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A Cultural Resource Overview:
Prehistory, Ethnography and History

Mt. Baker-Snoqualmie National Forest



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Prehistory, Ethnography and History

Mt. Baker–Snoqualmie National Forest

by
Jan L. Hollenbeck

with Program Assessment
by Madonna Moss

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1

INTRODUCTION



Introduction

Purpose and Scope of the Overview

This Overview is the product of an effort spanning several years, involving several stages of research and information sharing. It draws from the available literature, and from the formal and informal cultural resource records that have been amassed since the introduction of the "1650 - Historical" filing designation in the National Forest Administrative system. Archaeologists, Native Americans, and others have provided valuable information included here.

The National Forests have a responsibility to inventory, evaluate and manage cultural properties in the role of a trustee, for the benefit of future generations. The Cultural Resources Overview of the Mt. Baker-Snoqualmie National Forest has been developed to provide the information necessary for the Forest to fulfill its responsibilities under the current Land Management Planning and Historic Preservation laws, regulations and Executive Orders. The document synthesizes the known data relevant to prehistory, ethnography and history of the Forest, and identifies areas where our current level of knowledge is lacking. It provides a framework for the identification, interpretation and evaluation of sites and is designed to serve as the basis for future cultural resource investigations.

While this document will meet the requirements of the National Forest Management Act, it also assesses the needs of the Forest's Cultural Resources Management Program. The target audience is Forest Service personnel. It is anticipated, however, that it may serve a variety of academic and special interests as well. The information in the following sections on Prehistory, Ethnography and History is intended to be specific in area, but general in the sense that it does not disclose the locations of cultural resource sites. The Forest Inventory (Appendix E) includes the Forest Site Inventory lists. This section is to be used where site-specific information is necessary for project planning, by responsible Forest Service personnel. The information contained in the Forest Site Inventory is sensitive to dissemination due to the potential for misuse which may result in degradation of the resource.

The Overview is intended to be a dynamic document. Future cultural resource investigations will add to our current inventory and new information will provide new perspectives. The Overview will be updated as new data are available, and expanded to include more areas of research as the breadth of our knowledge grows.

The Mt. Baker-Snoqualmie National Forest Setting

Location

The Mt. Baker-Snoqualmie National Forest administers 1,724,011 acres in northwestern Washington along the western flank of the Cascade Range. It is contiguous to Canada on the north, and to the northern boundary of Mt. Rainier National Park on the south, a distance of 130 miles. The eastern boundary is formed almost entirely by lands administered by the Wenatchee National Forest,

except in the northernmost portion, where the North Cascades National Park lies adjacent. The western boundary is generally bordered by private land holdings. The Forest occupies portions of five counties - Whatcom, Skagit, Snohomish, King and Pierce.

The Mt. Baker and Snoqualmie National Forests were consolidated in 1974 for administrative purposes. Portions of both the Mt. Baker and the Snoqualmie Forests are now administered by other Forests (U.S.D.A. Forest Service Mt. Baker-Snoqualmie National Forest 1985). The Cultural Resources Overview is generally limited to a discussion of those lands currently administered from the Supervisor's Office in Seattle (Figure 1.1).

Geology and Physiology

The Mt. Baker-Snoqualmie National Forest is located within two physiographic provinces: the Northern Cascades Province, from the northern Forest boundary to Snoqualmie Pass; and the Southern Washington Cascades Province, south of Snoqualmie Pass (Franklin and Dyrness 1973). The northern Cascades is characterized by steep and rugged terrain. The valleys are uniformly deep and steep-sided. The southern province is generally less rugged; a series of ridges, separated by deeply dissected valleys, characterize the landscape. This is a result, in part, of Pleistocene and Recent glaciation having had more effect on the landscape of the northern Cascades than on that of southern Washington.

The northern Cascades exhibit the earliest geologic records to be found in the mountain range. Intensely folded and metamorphosed gneisses, schists, quartzites, and greenstones record periods of sedimentation, volcanism and mountain building. The age of the oldest rocks is uncertain, however, they are older than Middle Devonian (370 million years old) (McKee 1972:85).

The general configuration of the topography is strongly influenced by large, steeply dipping faults of Late Mesozoic and Early Cenozoic age (McKee 1972:85). During this time, there were episodes of sedimentation and volcanism, and the folding and faulting reached a maximum. These mountains had eroded to relatively low hills by the early Tertiary (63 million years ago), although the influence of this mountain building is still seen in the distribution of rock formations and their north-northwest trending alignment. The Cascade Mountains that we see today are the result of uplift of a broad north-south arch during the past 10 million years. In addition, several granitic batholiths intruded into the pre-existing strata during the Miocene period. The isolated volcanoes of the North Cascades Province, Mt. Baker and Glacier Peak, are relatively young; they formed during the Quaternary and are only 2-3 million years old at the outside (McKee 1972:87).

It is the volcanic strata that make the Southern Washington Cascades Province distinct. They are not, however, from the volcanoes we see today. The older, pre-Quaternary volcanoes have long since eroded to barely recognizable remnants. The remaining evidence consists of a varied assemblage of lava flows, volcanic ash beds, mudflow deposits and sedimentary rocks, composed of angular volcanic debris of basalts to finer cryptocrystallines (McKee 1972:102,178). Folds and faults, trending northwest, caused the deformation of these strata.

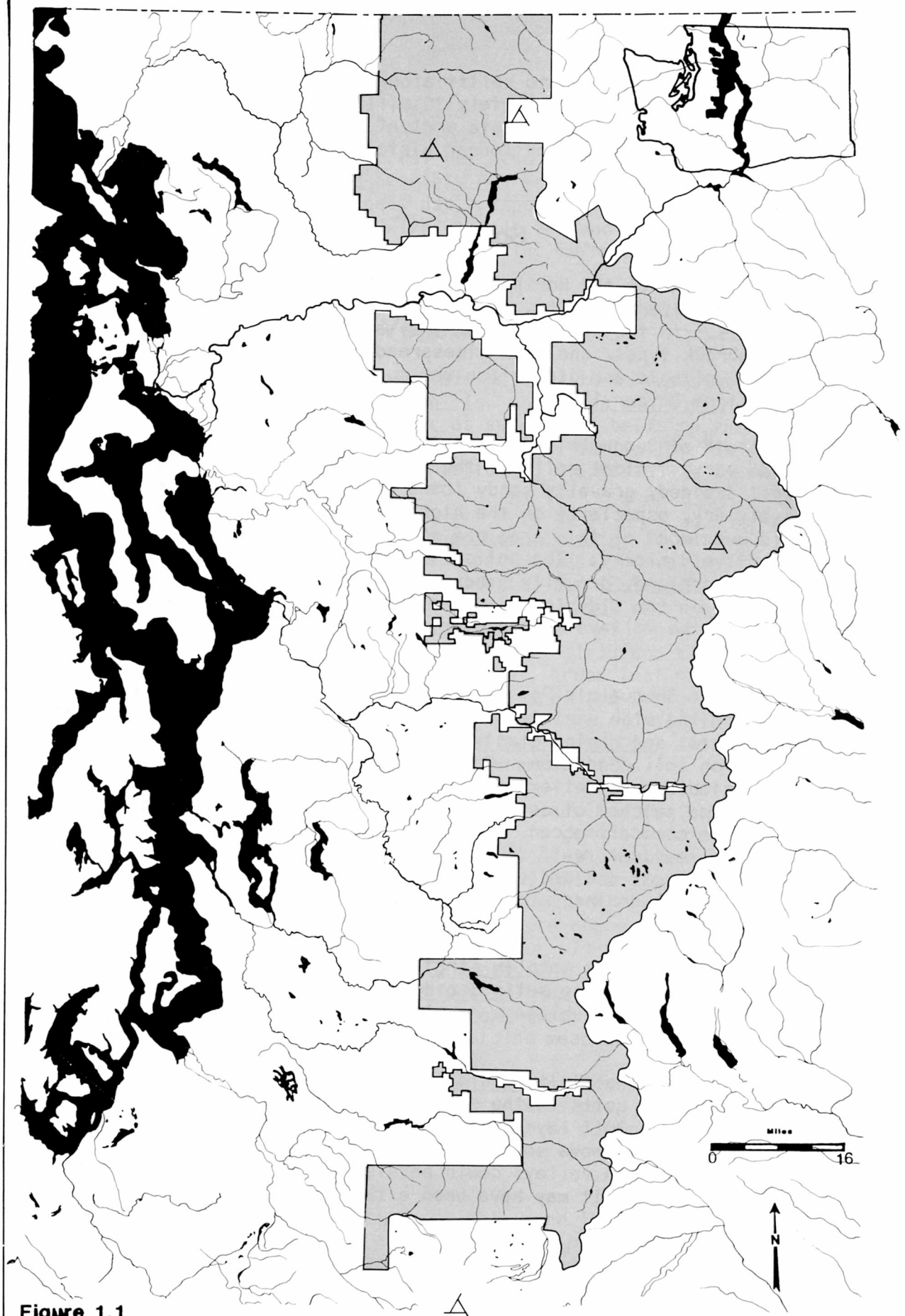


Figure 1.1
Location of the lands administered by the Mt. Baker-Snoqualmie National Forest

The modern Cascade range began to uplift along a north-south axis during the late Cenozoic (Pliocene - approximately 10 million years ago). The Quaternary volcano of Mt. Rainier is truly a late arrival to the scene, and has had little time to influence the broader and longer history of the Cascade range.

Soils

The geologic division of the Northern and Southern Cascades also divides areas of fundamentally different soils. Soil types are strongly dependent upon parent materials. In the northern area they are derived from granitic and metamorphic bedrock types, and from widespread glacial deposits. In the south, the bedrock is volcanic and glaciation was much less extensive. (The following discussion is from Snyder 1984).

In the area south of Snoqualmie Pass, soils are generally uniform. While conditions do vary, typical soils of the sideslopes and upper ridges are shallow, well drained, gravelly sandy loams over volcanic bedrock. These soils are relatively dry, especially on the higher ridges where the vegetation is open. Soils over most of this area are stable and natural erosional processes occur comparatively slowly. The soils in the valleys are deep, well to moderately well drained, gravelly sandy loamy sands. These areas are often more brushy than on the sideslopes, especially where drainage restrictions occur. Soils in the valleys change over time as flooding removes and deposits new soils.

The soils north of Snoqualmie Pass are much more variable and complex. This is partially due to the wide variety of bedrock types and the extensive influence of both continental and alpine glaciation. Because of this, it is difficult to describe a common soil condition. Compared to the southern Cascades, the soils are much less stable, are wetter, and often contain dense understory vegetation. Large patches of devils club, huckleberry and other herbaceous and brushy vegetation commonly occur. Characteristic soil conditions on sideslopes include shallow, residual, well drained gravelly sandy loam soils; shallow, well to moderately well drained sandy loam soils over thick glacial till; and deep, moderately well drained, loam and silt loam soils from highly weathered colluvial materials.

The valleys often contain a complex stratified soil from glacial till and glacial lake deposits. These soils are deep, have drainage restrictions, and often consist of numerous sublayers ranging from sand to clay. The understory is often dense and brushy.

Evidence of prehistoric activity would likely be more easily detectable on the sideslope and ridgetop soils in the southern area where the vegetation is open and soils are stable. Duff layers are thin and weathering and erosional processes which add or remove soil occur at a slow pace. Evidence of cultural resources in the southern valleys could persist for long periods in some areas, while in other locations it may have been either buried or removed by flood activity.

The northern area is subjected to many processes which could bury or remove evidence of past use. Much of the area has a duff cover several inches thick. Many steep sideslopes are subject to landslide activity, and many of the valleys are subject to both flooding and landslide occurrence.

Since the continental glaciation, portions of the Forest have been subjected to periodic ash and pumice falls, predominately in areas closest to Mt. Rainier and Glacier Peak. Much of the Forest has also received some ash from previous eruptions of Mt. St. Helens and possibly Mt. Mazama. This material could have buried prehistoric evidence of past use, especially extant material several thousand years old. Association with various ash and pumice layers, however, may allow for the application of certain dating methods.

Vegetation

The Mt. Baker-Snoqualmie National Forest includes three forested vegetational zones: Tsuga heterophylla, Abies amabilis, and Tsuga mertensiana (Franklin and Dyrness 1973). Generally, zones occur as sequential belts on the mountain slopes; however, mountainous topography of deeply cut valleys and high ridges cause the zones to interfinger. (The following discussion is taken from Franklin and Dyrness 1973).

The temperate western hemlock zone (Tsuga heterophylla) is the most important in western Washington in terms of timber production. Elevational range varies from sea level to 3,000 or 3,200 feet. Douglas fir (Pseudotsuga menziesii), western hemlock, and western red cedar (Thuja plicata) are the principal species. Pacific silver fir (Abies amabilis) occurs at the upper elevational limits. Deciduous trees are present on recently disturbed sites or low areas of impaired drainage. Red alder (Alnus rubra), broad leaf maple (Arbutus menziesii) and Oregon white oak (Quercus garryana) are not common, but are sometimes present on drier sites at lower elevations. Understory associations vary along moisture gradients. Salal (Gaultheria shallon) and a heavy growth of ferns (Polystichum minutum) are zonal characteristics.

Between the Tsuga heterophylla Zone of the lowlands and the subalpine Tsuga mertensiana Zone is the Abies amabilis Zone. It generally occurs at elevations from 2,000 to 4,200 feet on the western slopes of the Cascade range. The zone varies widely depending upon stand age, history and locale. Typically, noble fir (Abies procera), Douglas fir, and western hemlock are overstory dominants in a mixed stand, but Pacific silver fir, western red cedar, and western white pine (Pinus monticola) also occur. At the upper elevations, mountain hemlock (Tsuga mertensiana) and Alaska-cedar (Chamaecyparis nootkatensis) appear in the zone. Species of the heath family (Ericaceae) dominate the understory. Nonforested communities, such as meadows, are associated with the Abies amabilis Zone and may intergrade with subalpine meadows at higher elevations.

The highest forested Zone is the Tsuga mertensiana Zone, occurring generally between 4,200 and 5,500 feet. At the lower elevations, a forest cover of mountain hemlock characterizes the zone, while the upper elevations more commonly exhibit a mosaic of forest patches interspersed with shrubby or herbaceous communities.

The dominants in the lower elevations of this zone include mountain hemlock and subalpine fir (Abies lasiocarpa) and/or lodgepole pine (Pinus contorta) in drier areas. Pacific silver fir and Alaska cedar are major associates. The understory is comprised of a wide variety of species, many of which are from the heath, aster (Compositae), or rose (Rosaceae) families. At the upper elevations of the Tsuga mertensiana Zone, tree dominance gradually gives way

under the increasingly harsh alpine environment. The upper limit of contiguous closed forest at Mt. Baker is 4,600 feet; however, elevations vary with exposure. Areas above the timberline are few in western Washington, and are occupied primarily by glaciers, snowfields, bare rock and rubble.

Other plants associated with each of the above mentioned vegetational zones in the western Cascade region are discussed by Franklin and Dyrness (1973).

Climate

The climate of the Mt. Baker-Snoqualmie National Forest is mid-latitude west coast marine. Semipermanent high and low pressure areas over the north Pacific Ocean in combination with the Cascade mountain terrain have a definite influence on the climate. During the summer, the low pressure cell weakens and moves northward while the high pressure area spreads over most of the north Pacific. Air circulating in a clockwise direction around the semipermanent high pressure cell brings a prevailing westerly and northwesterly flow of comparatively dry air. This results in a dry season beginning in May and reaching a peak in midsummer.

In the fall and winter the low pressure cell strengthens and the high pressure cell weakens, while both move southward. Air circulating around the low pressure cell in a counterclockwise direction brings a prevailing southwesterly and westerly flow of moist air from the ocean. Condensation occurs as the air moves inland and rises along the windward slopes of the Cascades, resulting in a wet season beginning in October.

Rain is heavy during the winter months. Three-fourths of the annual precipitation falls in the six month period from October through March. The annual precipitation ranges from 35 to 50 inches over the lowlands, 75 inches in the foothills, and from 100 to 200 inches near the Cascade crest. Most of the winter precipitation falls as rain or snow between 1,500 and 2,500 feet, and as snow in the higher elevations. Mt. Baker, Glacier Peak and other high Peaks above 6,800 or 7,000 feet remain snowcapped throughout the year.

The average January maximum temperature ranges from about 40° in the lower elevations to 30° at 5,500 feet. Minimum temperatures range from 30° to 20°. At elevations above 5,500 feet, temperatures from zero to -16° have been recorded. The average July maximum temperature ranges from 75° in the lower elevations to approximately 60° in the higher elevations. The minimum July temperature is between 40° and 50° (Phillips 1972).

Fauna

The availabiltiy of large game animals in the Forest has always been an important factor in the use of these lands. Blacktailed deer (Odocoileus hemionus) were once common in the prairies and high alpine meadows, and now inhabit cut-over areas where browse species are available. Elk (Cervus canadensis) were re-introduced to the Cascades and can now be found grazing in the open meadows of the Tsuga mertensiana Zone in the summer. As the winter snows force them to lower elevations, they compete with deer for browse species. Deer and elk find winter range in the lower elevations of the Forest, extending up to about 3,000 feet in some areas during average and mild winter conditions (Figure 1.2).

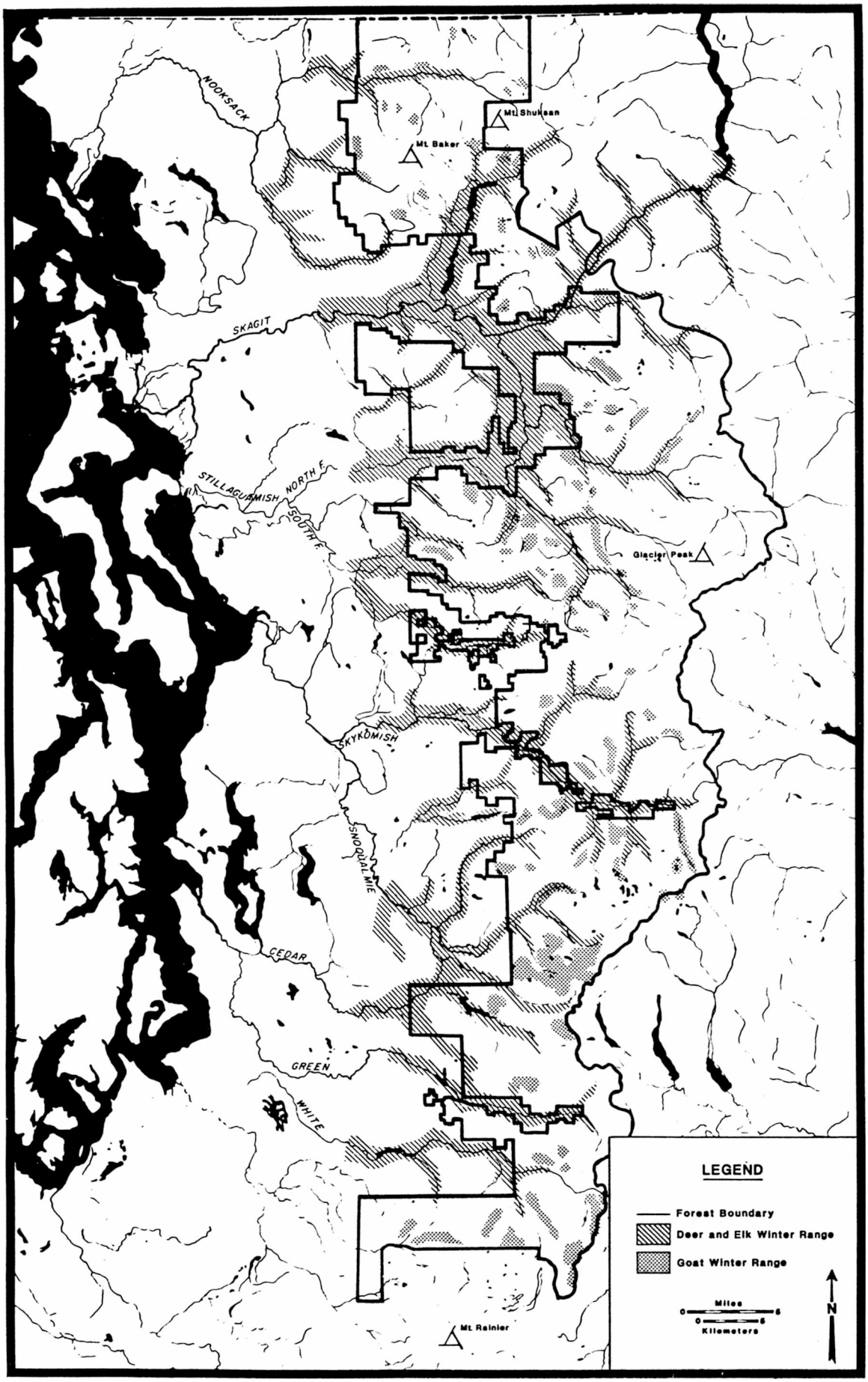


Figure 1.2
Deer, elk and mountain goat winter range on the Mt. Baker-Snoqualmie National Forest

Mountain goat (Oreamos americanus) inhabit the rocky alpine and subalpine areas. They were previously much more common than they are today. Recently, progress has been made in re-establishing the goat population by transplanting them from outside of the Forest. Mountain sheep (Ovis canadensis) may have crossed over into the alpine regions of the western Cascades, but the existence of established populations has not been documented. They have a very limited distribution in Washington today. Black bear (Ursus americanus) are common, but grizzly, once abundant, are now relatively rare. Most of the information regarding grizzly bear in the Cascades is from historic records (U.S.D.A. Forest Service Wenatchee National Forest 1985). Occasionally, moose (Alces alces) are seen in the area as well.

Cougar (Felis concolor), bobcat (Lynx rufus), and lynx (Lynx lynx) range throughout the Forest, while coyote (Canis latrans) are confined to the lowlands and are usually found in open areas. A number of smaller fur bearing animals are also present. These include red fox (Vulpes vulpes), fisher (Martes pennanti), marten (M. americanus), and muskrat (Ondatra zibethicus). Beaver (Castor canadensis) occur in suitable habitats in ponds, lakes and streams (Dalquest 1948; Kozloff 1976; Larrison 1970; U.S. Army Corps of Engineers 1975).

The Forest supports a large bird population. Although it is predominately mountainous habitat, many residents and seasonal visitors of the adjacent Puget Lowlands may be found within the Forest boundaries. These include loons, eagles, and osprey as well as a variety of owls, grouse, ducks, and small song birds.

Numerous rivers and streams drain into Puget Sound from the western flank of the Cascades. Streams are fed by heavy rainfall during the winter and by the melting snowpack and glacial water during the drier summer months. This provides a variety of river and stream types ranging in character from the cold, swift streams of the higher elevations to warmer, meandering rivers of the lowland valleys. Several lakes and ponds of varying size and temperature are also present. Six species of salmon, three species of sea-run trout, and five other resident species find spawning and rearing habitat within the Forest boundary (Table 1.1).

The anadromous species are the most economically important fish in the area. Five species of anadromous salmon utilize the waters of the National Forest. These are chinook (Oncorhynchus tshawytscha), sockeye (O. nerka), coho (O. kisutch), pink (O. gorbuscha) and chum (O. keta). Portions of seven major drainages provide characteristics suitable for these species (Williams et al. 1975).

(1) In the northern part of the forest, the Nooksack Basin is inhabited by five species of salmon as well as other anadromous fish.
(2) The Skagit Basin is the largest drainage, providing a great variety of ecological environments. All five salmon species are found in some part of the basin. The Samish River system, the largest independent watershed within the Skagit Basin, is inhabited by three of the salmon species, chinook, coho and chum.
(3) The Stillaguamish Basin has its origin in the forested foothills of the Cascade Range. Four Pacific salmon species populate the

Stillaguamish River system. Chinook, coho, pink and chum spawn in suitable habitats.

(4) The Snohomish Basin consists of two principal rivers. The Skykomish and Snoqualmie join to form the Snohomish. Chinook, coho, pink and chum use this basin.

(5) The Lake Washington Basin consists of all the waters funneling into Lake Washington. It includes the Cedar River system, the Sammamish River system, and eight smaller systems independent of either. Virtually all of the basin is suitable for chinook, coho and sockeye salmon.

(6) Chinook, coho, and chum are found in the Duwamish-Green Basin. Prior to the 1930s, odd year runs of pink salmon utilized this basin.

(7) Originating on the southwest slopes of Mount Rainier, the Puyallup Basin is the southernmost basin considered to be part of the National Forest. Chinook, coho, pink, and chum find suitable spawning and rearing areas in this drainage. Some sockeye are indigenous to the system but are not frequent at this time.

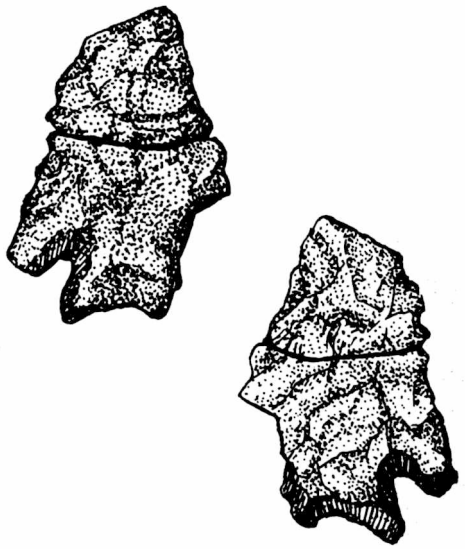
Table 1.1 Fish species found in the lakes, rivers and streams of the Mt. Baker-Snoqualmie.

	Anadromous*	Resident
Salmon	Chinook (*Onchorhynchus tshawytscha*) Sockeye (*O. nerka*) Coho (*O. kisutch*) Pink (*O. gorbuscha*) Chum (*O. nerka*)	Kokanee
Trout	Steelhead (*Salmo gairdneri*) Cutthroat (*Salmo clarki*) Dolly varden (*Salvelinus malma*)	Rainbow (*Salmo gairdneri*) Cutthroat (*Salmo clarki*) Dolly varden (*Salvelinus malma*) Brook (*Salvelinus fontinalis*)
Other		Arctic grayling (*Thymallus signifer*) White fish (*Prosopium williamsoni*) *Cottids* spp. (sculpins)

*A species can be both resident or anadromous depending upon whether it is landlocked or not.

II

PREHISTORY



Environmental Setting

Paleoenvironment

Setting the Stage

The environmental history that has influenced the archaeological record in the Pacific Northwest begins with the end of the Pleistocene epoch, approximately 12,000 years ago. The first evidence of human occupation in what is now Washington State dates from about that time. Prior to that, during the Pleistocene, the environment was characterized by glaciation and vulcanism, two geologic processes that were critical in shaping the the Cascades and vicinity into the landforms found on the Mt. Baker-Snoqualmie National Forest today. At least four major periods of glaciation took place, separated by nonglacial intervals. There may have been more episodes, however, evidence of all but the last is difficult to identify because each caused such tremendous alteration of the landscape. For this reason, the last period of glaciation, the Fraser Glaciation, is most relevant to our story of the prehistory of western Washington. It represents an environmentally complex time period, during which the ice advanced and retreated several times over an approximate 19,000 year time span.

The final glacial advance of the Fraser Glaciation, called the Vashon Stade, lasted approximately 12,000 years, from 25,000 to 13,000 B.P. (before present). A huge lobe of ice advanced from the north during this period, and pushed south beyond the Strait of Juan de Fuca, blocking all the water that normally drained through that passage. The Puget Lowland was eventually filled with a large lake. Alpine glaciers extending down the western flank of the Cascades contributed runoff into the lake, and deltas were formed along its margins. The maximum capacity of the lake was reached on several occasions, causing it to overflow and drain south through the Chehalis River Valley. This resulted in the disproportionately large valley of the Chehalis River, and the extensive river terraces visible today high above the present flood level (McKee 1972).

The Puget Lobe continued to advance, ultimately extending to a location near Tenino, Washington. The Cascades were not generally covered by the Continental ice sheet, however, alpine glaciers were active in the uplands, carving the characteristic steep-sided, u-shaped valleys familiar in the western Washington Cascades. Each major valley of the western mountain flank was probably occupied by a long valley glacier, but the subsequent overlap of the Continental ice along the foothills obscured the evidence of the extent of these glaciers (Figure 2.1). The alpine glaciers began to retreat before 15,000 B.P., but the Puget Lobe continued to grow. Drainage from the mountains was dammed by the ice in the lowland, and lakes developed along the interface:

> The evidence of ice-dammed lakes in the Cascade valleys is proved by evidence found within the valleys. Tremendous deltas as much as 1,000 feet high were built at the mouth of each valley. They consist of coarse beds of gravel and sand dipping upvalley. Farther back in the range, the lake

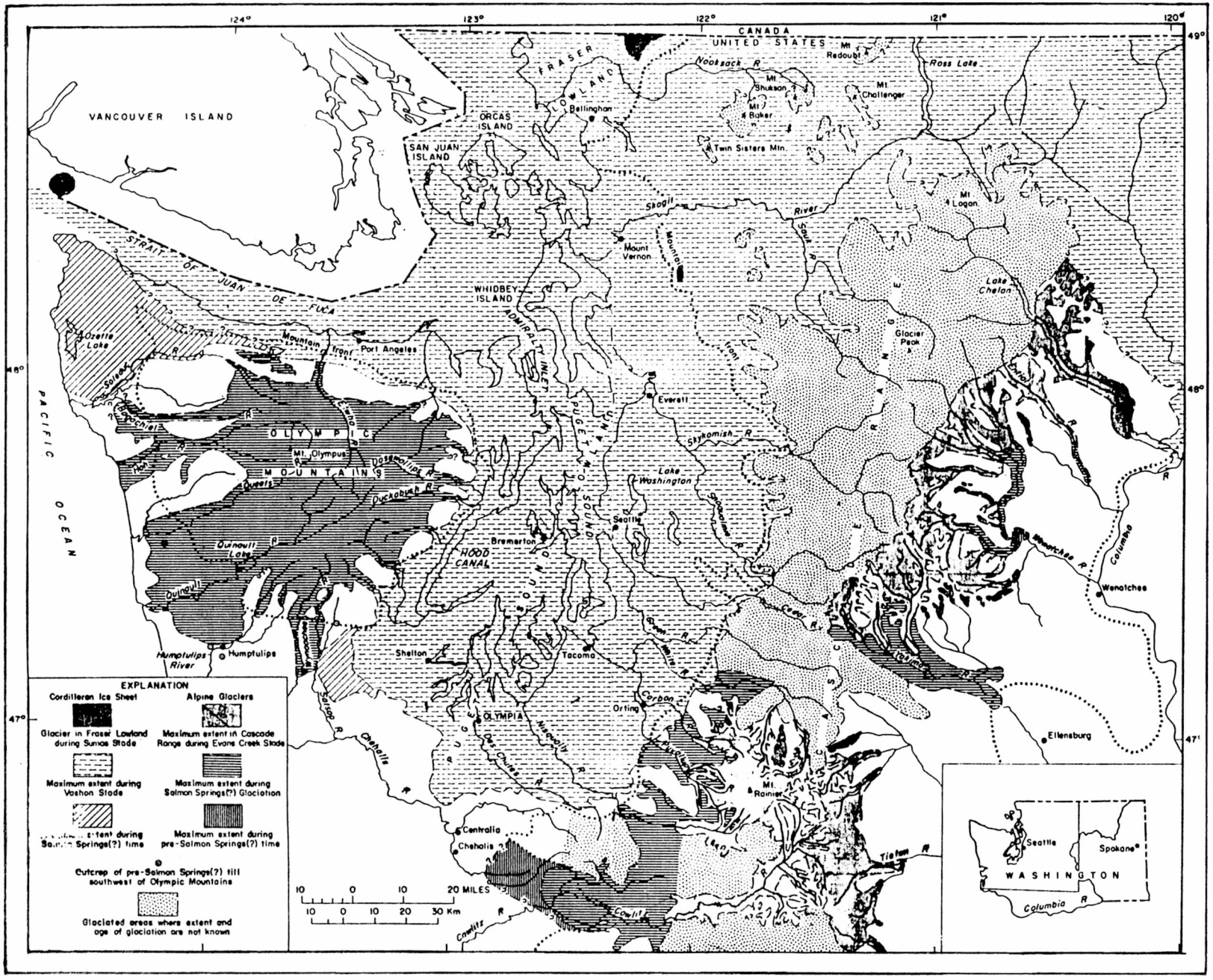


Figure 2.1 Inferred extent of glaciation in western Washington (from Crandall 1965).

deposits get progressively finer grained until thick, lake clays floor the valley (McKee 1972:300).

Spillover of the glacial dammed lakes along the eastern margin of the Puget lobe caused the cutting of spectacular ice-marginal channels along the Cascade Range front. This drainage flowed southwestward to the Chehalis River valley and escaped westward to the Pacific Ocean (Crandall 1965:345).

An ongoing oscillation of sea level, closely related to the glacial episodes, added to the complexity of the geologic environment. The sea level lowered during the periods of glaciation, because much of the world's water was frozen into massive continental glaciers. This was reversed during glacial melt, and the sea level rose accordingly. The effects of isostatic adjustment were in direct opposition. The sea level was raised while the weight of the ice depressed the continent. As the glaciers receded, the great relief of weight caused isostatic uplift and emergence of the land, resulting in a lower sea level relative to the continental shoreline. Additionally, active uplifting, tilting and faulting of the earth's crust varied the land/sea relationships.

Vulcanism, overlapping in some instances with glacial episodes, was another process of consequence in Pleistocene times in the Cascades. Mounts Baker, Rainier, St. Helens, Adams, and Hood and Glacier Peak were variously active, their unrest continuing into post glacial times. The Glacier Peak eruption, dated around 12,000 B.P., spread ash as far east as central Montana, northeast to Alberta, and south into northeastern Oregon. Only a small trace of ash is found west of the volcano where it has washed off the mountain into the upper White Chuck River. Of even greater significance was the explosive eruption of Mt. Mazama, about 6,700 B.P. All that remains today is the water-filled caldera, Crater Lake, in southcentral Oregon. So devastating was this volcanic eruption that its ashfall covered most of eastern Washington, extending northward all the way into southern British Columbia and southwestern Alberta, and south into northern Nevada.

These varied geologic features are the foci of many geologic studies. Research by archaeologists is progressing in attempts to correlate these events with the archaeological evidence of human occupation in the affected areas (cf. Mattson 1985; Yesner and Schalk 1985).

Climatic Conditions and Human Adaptation

People began to migrate into this setting in the Pacific Northwest region approximately 12,000 years ago. As a consequence of lower sea levels, a land bridge, called Beringia, was exposed across the present Bering Sea between Alaska and Siberia. Glacial activity in Europe and Asia had influenced the distrubution of plants, animals and people, and the land bridge provided a passageway for these to populate North America. During several major ice advances and corresponding interglacial periods of the Pleistocene, Beringia may have emerged and submerged several times, but it was last used prior to 13,000 years ago.

There are at least two explanations for the mechanics of people arriving in the Pacific Northwest. Neither proposal necessarily preempts the other; future studies may validate either or both. People entering the continental interior moved along ice free routes, but exactly when and where these existed is a subject of some debate. One older model suggests that an ice free corridor existed along the eastern flank of the Rocky Mountains, providing a passageway for southern migration. Some people remained in unglaciated portions of Alaska, others migrated inland. As the inland continental ice advanced and pushed southward, people, plants and animals moved south as well, and adapted, probably living well beyond the ice front. Environmental pressures may have also induced portions of this interior population to move westward, ultimately resulting in the settlement of the newly deglaciated coast of northwest Washington. A subsequent northward migration to coastal British Columbia is also suggested. It is hypothesized that it was an inland-oriented culture, dependent on big game, that later adapted to the coastal environments of Washington (see Borden 1975).

In a contrasting view, Fladmark (1975, 1979) suggests that ice free areas existed along the coastline providing a refugia for plants, animals and people. A maritime-oriented culture with suitable watercraft would have easily migrated from refugium to refugium, assuming the necessary resources were available. Following deglaciation, people moved into the newly inhabitable areas as the physiographic and soil conditions stabilized. Eventual movement inland from the coast would have led to the particular interior cultural development of the intermontane area (see Fladmark 1975, 1979).

As an alternative hypothesis, it has been suggested that the New World could have been populated by people from Asia before it was possible to walk between the continents by way of Beringia:

> ... an emergent land bridge was not an essential prerequisite for entering North America from Asia...people have had the capability to cross Bering Strait by watercraft for at least 30,000 years. Some archaeologists have noted this observation, but none have taken the next step and suggested that instead of abandoning their boats on the American shore to run joyfully inland in search of "big game," a few of these early voyagers may simply have continued southward along the Pacific Coast (Fladmark 1979:63).

The exact routes, the time period or periods of migration, and the potential for habitation of western Washington prior to the retreat of the Vashon Glacier are simply not known. The Cascades of Washington may be in a location influenced by migration from both the east and the west. For the time being, archaeologists must be content with a record of prehistory in northwestern Washington that begins with the retreat of the Vashon Glacier. The advances and retreats of the continental glacier so thoroughly altered the land that the evidence necessary to support alternative hypotheses regarding origins may never be found.

The climate influencing human occupation and adaptation in the Cascades may be generalized from pollen studies from adjacent Puget Sound (Hansen 1947; Heusser 1960). During the immediate post glacial time, the temperatures were lower than today, and humidity and precipitation were higher. Fluctuations in

relative conditions were reflected in the pioneer invasion of lodgepole pine, a species tolerant of the receding ice front, and western white pine, which thrives in cool, moist climates. The decline of these species reflects a warming and drying interval as the influence of the glacier became more remote.

The warmer interval that followed, called the altithermal, lasted approximately 5,000 years, from about 8,000 to 3,000 B.P. The vegetation was dominated by Douglas fir and western hemlock, and pollen remains collected from bogs near the foothills of the Cascades indicate that spruce was abundant. The duration and effect of the altithermal on the Puget Lowland and the Cascade west side may have been less severe than east of the mountains, due to Pacific marine influences. The changing climate caused changes in the distributions of floral and faunal species as the environmental zones fluctuated. Some species could no longer be supported and became extinct. Others adapted or migrated to compatible environments elsewhere.

The rebirth of glaciers in the high Cascades and the expansion of hemlock to supersede Douglas fir as the climax species in the lowland, indicate the return to a cool and moist climate, beginning approximately 3,000 B.P., and continuing to the present.

Cultural Setting

Introduction

For many years, it was thought that there were no manifestations of prehistoric culture in the Cascades. Archaeological research and field investigations in western Washington focused along the coastline and the Puget Trough, and very few sites were recorded higher than 100 feet above sea level or beyond the lowland drainage basins. To the east, the focus of attention from the archaeological community was on the Columbia River Basin. This was primarily due to the relative ease of access, the greater visibility afforded by shoreline exposures, and the land clearing that resulted from settlement and development of the lowlands. In recent years, it has become increasingly apparent that the Cascades were occupied prehistorically, and that village locations as well as specific-task sites may be represented in inland environments. Recent research indicates that the high country toward the mountain passes and along continuous ridges was visited during travel and trade, at the very least, and that specialized resource procurement activities, such as berry picking and hunting, took place throughout the elevational zones.

At least a 10,000 year span of human occupation can be demonstrated for Washington State (Kirk and Daugherty 1978). When did the Cascade environment stabilize enough to offer reliable plant and animal resources for people? We don't really know yet. Certainly, the availability of suitable habitation areas, shelter requirements, and the productivity and accessibility of food sources were crucial determinants in the establishment of settlement and subsistence patterns adapted to the local environment. Material recently recovered from the vicinity of Chester Morse Lake, in the Cedar River drainage, is suggestive of a prehistoric winter occupation in the foothills (1540 ft. elevation), that may represent use of this area over a 9,000 year period (Larson 1983; Lewarch 1978). The notion that the Cascade foothills were occupied during prehistoric times on a permanent year-around basis is relatively new, and research questions far exceed the answers at this time.

The reconstructions of human development in the Northwest are the results of decades of painstaking archaeological research. The reasons for the studies are multifold; the adequacy of the research and conclusions, highly variable. As scientific technology advances, our ability to decipher the few fragments of the archaeological record is vastly improved. Sophisticated techniques enable archaeologists of today to interpret past lifeways from flakes of stone, scraps of bone and vegetable matter, and alterations in soil composition. As long as the cultural remnants are left undisturbed, scientists are frequently able to determine what activities took place at a site, the time of year the site was occupied, the nature of the environmental setting and the ways in which people adapted to that environment, and the relationship of the people using the site to other groups in the region. Ironically, as our ability to expand the information retrieved from the sites increases, we are left with fewer and fewer sites from which to develop an awareness of our past. Land developments have erased much of the record, some of which is not duplicated elsewhere.

Relic collectors have contributed further to the loss of precious data, for once removed from the context within which they were deposited, the artifacts have little meaning. We are very rapidly approaching our last opportunity to provide some sense of stewardship and protection for the few sites that remain.

In 1951, Charles E. Borden, one of the leading archaeologists in Northwest prehistory, commented:

> By contrast with some areas of the North American continent where years of intensive research appear to have solved many, if not most of the major problems of time and space relationships, the Pacific Northwest is still an archaeological frontier. The few pioneers who have ventured into this region have created only a few small isolated clearings in what still remains a dense and largely unexplored archaeological forest (1951:35).

We have moved a quantum leap since 1951, but Borden's observation remains particularly applicable to the Cascades. To understand the use of the Cascades we must turn to the surrounding areas. Our knowledge of prehistoric development in the western Cascades is based on a combination of the extensive work that has been conducted east of the mountains in the Columbia River Plateau, in the Puget Lowland to the west, and in the Fraser River Valley of British Columbia.

Building a Chronological Framework

Early studies of Washington State prehistory resulted in detailed descriptions of sites and artifacts, with some attempts to place these in a chronological framework. Local cultural sequences were developed, but the study of relationships between sites to gain a broader understanding of regional cultural developments, was not a focus of research. Temporal placement is commonly accomplished through radiocarbon (C^{14}) dating or by relative dating techniques, such as stratigraphic position or seriation. Ideally, all are employed in the development of a chronology. Other dating techniques such as obsidian hydration and dendrochronology, are available to archaeologists. However, these have not been widely applied in this region.

Dating by C^{14} results in an absolute date, given in years before present (B.P.), and expressed with a standard deviation. It is based on the assumption that radiocarbon, present in all living organisms, disintegrates at a known and constant rate after the organism dies. The amount of C^{14} left in wood, bone or shell found in an archaeological context can be measured. The accepted "half life" , that is, the amount of time it takes for one half of the total radiocarbon to disintegrate, is 5,730 +/- 40 years. Although there are limitations, radiocarbon dating has been invaluable to archaeologists since it became available in the early 1950s, and it is often applied with other dating techniques.

The study of site stratigraphy can be used to interpret the age of certain deposits relative to one another. Undisturbed deposits are preferable as stratigraphic dating requires the representation of multiple-aged

archaeological or natural strata. Stratigraphic dating relies on the axiom that the most recently deposited material is above (on top of) earlier deposits. It is further assumed that all objects found in one stratum are contemporaneous. These associated data can then be correlated with material from other sites. Natural strata can be used as time markers; for instance, Mazama ash, (radiocarbon dated at 6,700 B.P.) has been invaluable in dating and drawing comparisons between a number of sites in eastern Washington. The applicability of stratigraphic dating remains somewhat limited in the Cascades, as many important but short-term use locations are not stratified in deposition.

Seriation is another relative dating technique that has the potential for use in the Cascades. One of the assumptions applied in seriation is that stylistic changes in artifacts can be classified, and ordered in terms of a sequence. A further assumption is that stylistically similar artifacts from different but spatially associated sites are relatively contemporaneous. Projectile points are commonly singled out of artifact assemblages as temporally diagnostic based on a number of attributes (Figure 2.2). These must be interpreted in combination with other artifacts and site characteristics, as well as stratigraphic placement. It is important to recognize that a style, although it may be representative of a certain time period, does not belong exclusively to that period. Also, cultural chronologies simply identify changing trends and not necessarily the mechanisms or reasons for such change.

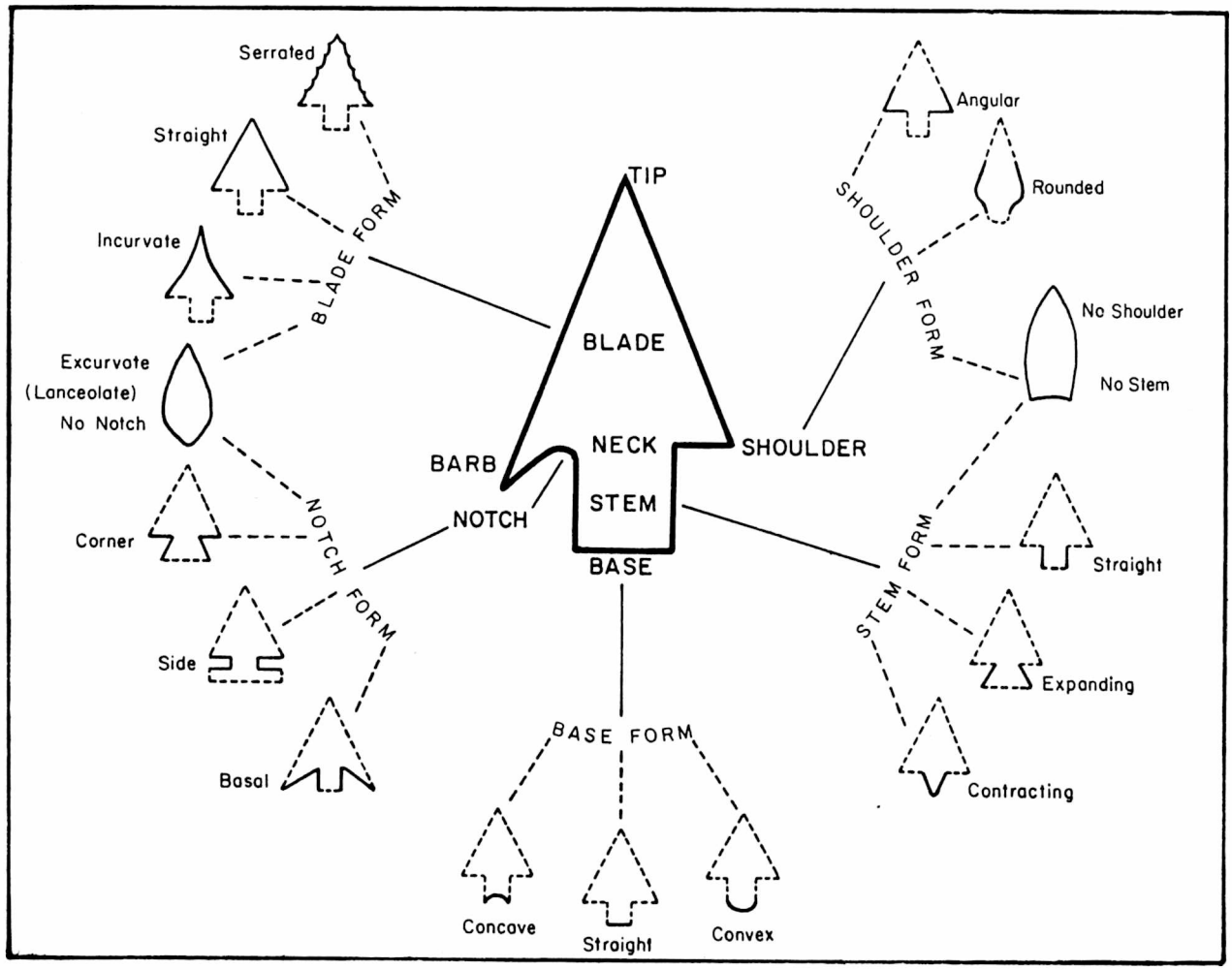


Figure 2.2 Stylistic attributes of projectile points (from Hollenbeck and Carter 1986).

Early Studies of Prehistory

Many of the archaeological materials found and collected prior to the late 1890s resulted from relic collecting, particularly from Indian burial grounds. The first major effort in Washington archaeology was that of the Jesup North Pacific Expedition, sponsored by the American Museum of Natural History. Harlan I. Smith directed virtually all of the archaeology and published his results between 1898 and 1936. Although this field work was of questionable standard even for the time, these excavations represent the majority of the work conducted in this area until after the Second World War.

British Columbia and Puget Sound Perspectives

Charles Borden, from the University of British Columbia, began his work of long duration in the Fraser River Delta in 1946 (Borden 1950, 1961, 1970). At this time, archaeologists began to focus on the development of cultural sequences as the framework for understanding the prehistoric past. Borden first suggested that the earliest culture of the Northwest Coast was of Eskimoid descent, and that this maritime oriented culture experienced some interior contacts and influence over a 3,000 year span of occupation, resulting in the ethnographic culture of the Pacific Coast that was evident when the early explorers entered the region. Borden reinterpreted his initial sequence in later years as exhibiting a complex interaction between maritime and interior cultures.

As archaeological research continued in this vein, several cultural sequences were proposed based on investigations of other coastal sites, e.g. Bryan 1955, 1963 (Puget Sound); Carlson 1954 (San Juan Island); Mattson 1971 (Skagit Delta). Robert Kidd ventured into the upper Snohomish River Valley and compared the artifacts from three inland sites to those from the Fraser Delta, concluding that this area contained some of the earliest prehistoric deposits found by that time in western Washington (Kidd 1964).

As Borden's work became more detailed and radiocarbon dates were used to define the phases, his sequence became the standard by which to interpret other local sequences. Borden (1970) proposed a sequence that extended back in time to about 3,000 years B.P., and included five phases of development: Locarno Beach (2,800 to 2,200 B.P.); Marpole (2,400 to 1,550 B.P.); Whalen II (1,650 to 1,200 B.P.); Pre-Stselax (1,200 to 750 B.P.); and Stselax (750 to 200 B.P.). Archaeologists continued to expand upon the Fraser River material, also building upon new data, laying the ground work for Northwest Coast prehistory:

> During the past seven years, local research has continued to be related to Borden's sequence extending it to earlier time periods through Carlson's work at the Helen Point site on Mayne Island, where he defines a pre-Locarno Beach component as representing the Mayne Phase... The work of Boehm (1973), also Calvert (1970) at the St. Mungo Cannery site and of R.G. Matson (1976) at the nearby Glenrose Cannery site also extends Borden's sequence. Carlson (1970a, 1975) suggests that the earliest St. Mungo material represents the Mayne Phase, and Matson (1976) uses the term Old Cordilleran Phase to describe a Glenrose component that predates material similar to the earliest St. Mungo Cannery site component (Thompson 1978).

The schemes that have been proposed (Table 2.1) are expanding our understanding of the length of occupation represented by sites in western Washington, and of the processes of culture change. They are not yet directly applicable, however, to the western Cascades. We see some apparent similarities and ties with eastern Washington cultures in the little work and data available from the western Cascades.

Table 2.1 Proposed cultural chronologies for the Northwest Coast and Columbia Plateau.

	Northwest Coast			Columbia Plateau			
BP	Fraser Delta (Borden 1968, 1970)	Gulf & San Juan Islands (Carlson 1970)	Glenrose Cannery Matson 1976)	Sunset Creek (Nelson 1969)	Lower Snake (Leonhardy & Rice 1970)	Okanogan (Grabert 1968)	Col. Plateau Synthesis (Galm et al. 1981)
200				Historic	Numipa	Cassimer Bar	Historic
500	Stselax	San Juan					
1000	Pre-Stselax	Late Marpole		Cayuse	Harder	Chiliwist	Cayuse
1500	Whalen II						
2000	Marpole	Marpole	Marpole				
2500				Quilomene Bar			?
3000	Locarno Beach	Locarno Beach					
3500		Mayne	St. Mungo	Frenchman Springs	Tucannon		Frenchman Springs
4000							
4500				Cold Springs			
5000							
5500			Old Cordilleran	Vantage		Indian Dan	
6000					Cascade		
6500							Vantage
7000					Mazama Ash		
7500						Okanogan	
8000							
8500					Windust		
9000							Windust
9500							
10,000							
10,500							
11,000							

Columbia Plateau Perspectives

Plateau archaeology also enjoyed an expansion of interest and investigations after World War II with the Columbia Basin Project River Basin Surveys, sponsored by the Smithsonian Institution and carried out between 1947 and 1953. These surveys and subsequent excavations were a stopgap measure to identify and interpret sites that would be impacted by large scale hydroelectric projects on the Columbia River. The work was largely inadequate, hampered by extreme limitations of time and funding. The sponsorship of the surveys by the Smithsonian gave recognition to the national importance of the archaeology of the Columbia River system. It also constituted the first attempt at widespread systematic data collection. Some 40 surveys and reconnaissances of reservoirs were conducted and several large scale reports of archaeological investigations produced (e.g. Campbell 1950; Daugherty 1956; Greengo 1982; Gunkel 1961; Nelson 1969). The results of this project were precursory to the direction archaeology would take in eastern Washington for the next two decades.

The major focus was the development of cultural chronologies similar to the trend of research on the coast at this time. The chronology most frequently cited along the middle and upper Columbia is one proposed in 1969 by Charles Nelson as a result of his work at the Sunset Creek site, now within the Wanapum Dam Reservoir (Table 2.1). The Sunset Creek Chronology was developed almost entirely on perceived changes in projectile point styles. While several archaeologists have pointed out the shortcomings of this methodology (e.g. Leeds et al. 1981), Nelson's projectile point sequence is a classic for the Columbia Plateau and has been used extensively as an index in the relative dating of cultural sequences (Figure 2.3).

Nelson suggested that the occurrence of permanent winter villages that characterizes the Ethnographic Period along the Columbia River was made possible by the introduction of more efficient techniques of root gathering and fishing, and by a newly acquired ability to store these foods. The technology that made this possible, he hypothesized, was introduced by Salishan communities expanding from British Columbia across the northern Columbia Plateau, and providing the economic basis to support greater numbers of people for longer periods of time. As more data become available, however, the Salishan expansion hypothesis does not appear to be consistent with the archaeological record, and traits that Nelson suggested were a result of this expansion are being identified much earlier in time than originally suspected.

Similar sequences, such as those for the Lower Snake River area (Leonhardy and Rice, D. 1970, 1980), and the Okanogan Valley (Grabert 1968), have been developed for other areas (Table 2.1). In addition, several syntheses of Plateau prehistory have been proposed (e.g. Browman and Munsell 1969; Daugherty 1962). Each may be equally valid, representing parallel cultural development where similarities are present between areas (Galm et al. 1981). Some recent research in the mid-Columbia region led to the revision of Nelson's chronological sequence (Galm et al. 1981), in which the presumed length of occupation of the Plateau is extended to include a pre-Vantage Phase called Windust, after the Snake River phase from which it was extrapolated (Galm et al. 1981). In this work, Galm and his co-authors lumped Nelson's Cold Springs Phase with the Vantage Phase "as there are no obvious differences between them" (1981); and subsumed the Quilomene Bar Phase with the Frenchman Springs and Cayuse Phases (Table 2.1). Additional work may serve to further modify these schemes.

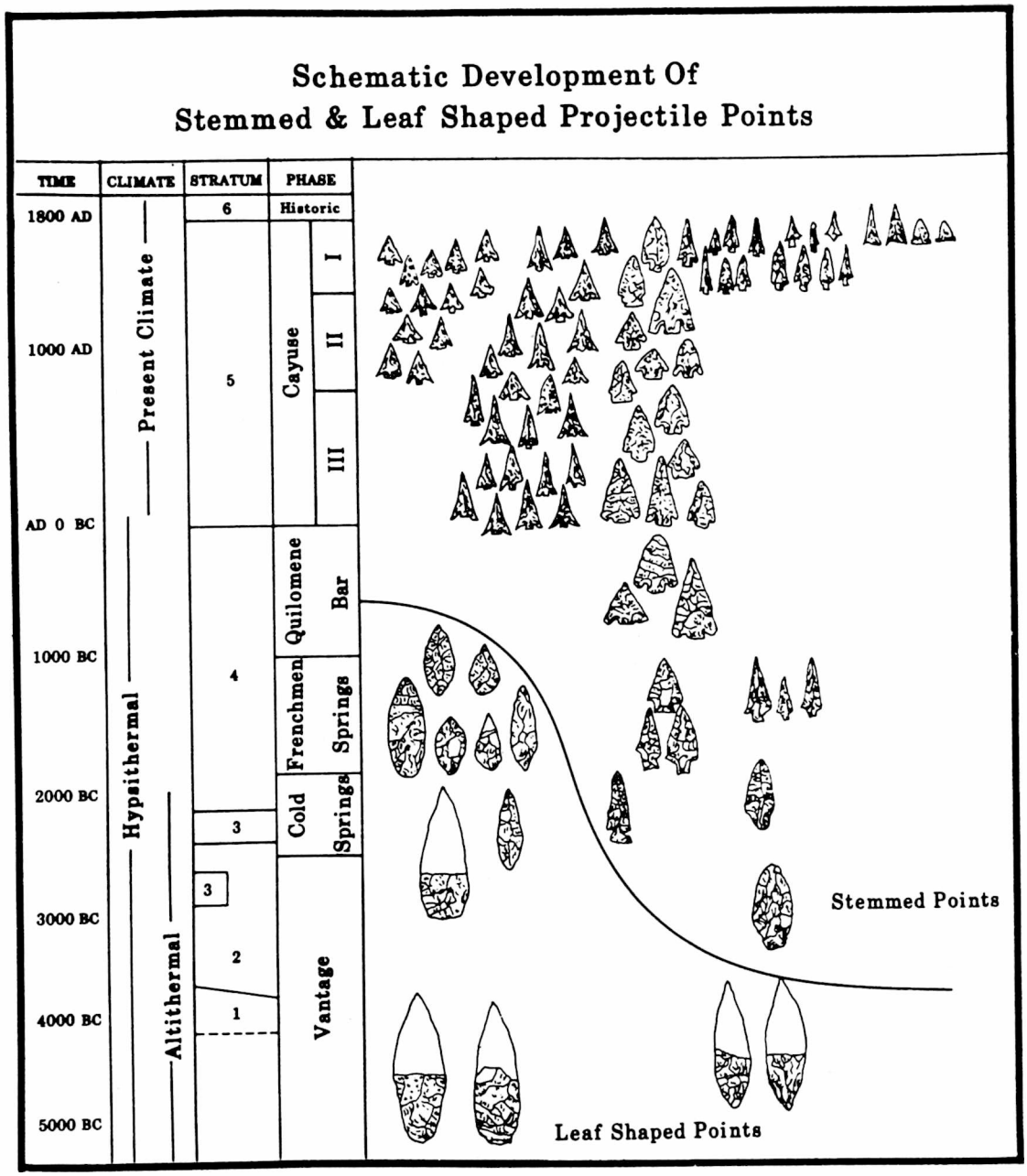


Figure 2.3 Schematic development of stemmed and leaf shaped projectile points (Nelson 1969).

Contributions From Other Areas

The earliest archaeological evidence known in Washington State should be addressed before an attempt is made to pull these ideas together for the Cascade area. Remains of early occupations are known from three localities - the Manis Mastodon Site near Sequim, the Lind Coulee Site near Warden, and the Marmes Rockshelter near the confluence of the Palouse and Snake Rivers. These do not yet fit neatly into any sequence; their relationship to later cultures is uncertain. The earliest component of the Manis Site has been dated at approximately 12,000 B.P., and demonstrates an association between man and

mastodon. The data recovered are inconclusive, but include what appears to be a bone point embedded in a mastodon rib. Since the locality represents a butchering site rather than evidence of occupation, there is not enough information to make inferences about the general lifestyle of these early people. However, a look to the Plateau at roughly the same period, 9,000 to 10,000 years ago, offers an amazingly detailed profile of a versatile people. Evidence from Lind Coulee and Marmes suggests that food sources included the large herbivores, such as bison and elk and smaller mammals (deer, coyote, badger, rabbit and skunk), birds, roots and berries.

The relationship between these findings and later cultures is uncertain. Similarly perplexing are the random observations of what are commonly classified as "Paleo Indian" point styles from various localities in the state. Paleo Indian is a term that describes a big game hunting tradition that was adapted primarily to the grassland environments of the Late Pleistocene in the Plains and Great Basin Provinces of North America. The occurrence of these points may reflect the influence or presence in the Northwest of an early hunting culture ordinarily associated with areas well to the south and east. They could also be the product of extensive trade networks. The problem is pertinent, since at least one characteristic artifact, a Clovis Point, was recovered from the vicinity of Lake Cle Elum, situated well into the Cascades (Figure 2.4).

Where dated the earlier part of this tradition (Clovis) is about 11,500 years old and usually associated with mammoth remains, and the younger part (Folsom) about 10,000 years old and usually associated with extinct species of bison. Dating of this tradition is not sufficiently reliable to demonstrate whether it originated and spred south from Alaska (there are no fluted points in Siberia) via the ice free corridor, or north to Alaska from interior North America as the Pleistocene fauna and their glacio-pluvial environment retreated with the waning of the last ice sheet. Fluted points are very rare on the Northwest Coast, and are only known from surface finds south of the area covered by glaciers (Carlson 1984:15).

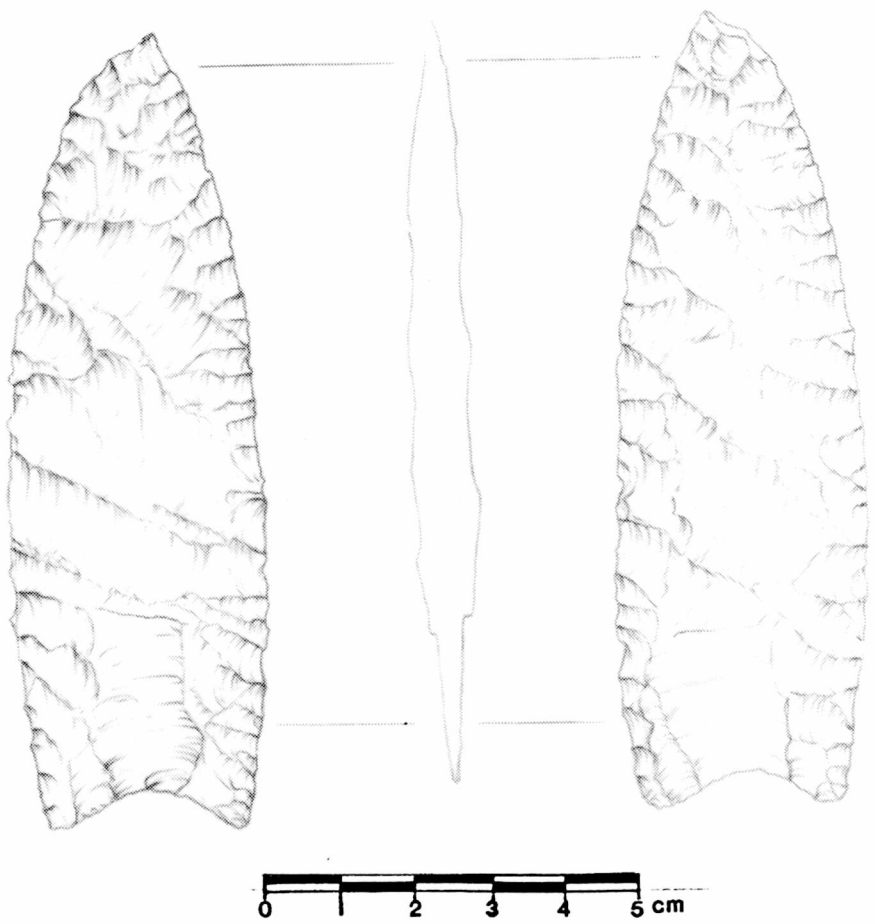


Figure 2.4 Clovis Point (from Hollenbeck and Carter 1986).

Chronological Synthesis

Very little research has been conducted in the upriver and mountain regions of western Washington. The data base is incomplete, and the gaps are filled with information about cultural traits extrapolated from other areas. The sequence presented below is speculative, but serves to synthesize some of the current concepts regarding western Washington prehistory.

The way in which people used and inhabited the foothills and mountains of the western Cascades was apparently influenced by their contacts with people from both the east side and the coast. As the distance from the coast increases, the sites and artifacts look more like those found in eastern Washington. Whether this indicates that the people using the Cascades were culturally different from those using the coast is an open question. The differences that developed between the maritime orientations and those found inland could represent component parts of a more complete settlement and subsistence system that included both environments. Continued research focusing on the contact zones, such as the inland prairies of the Puget Trough, will continue to shed light on the question (Kennedy et al. 1983).

It appears from our current level of knowledge, that the development of the northern and southern areas of the Forest was comparable; technological developments appear to have been parallel. Slight variations exist, but no major distinctions have been identified in the archaeological material. Virtually nothing is known at this time about the degree of cultural contact that took place in a north-south direction. Significant contributions can be made toward resolving such questions as more sites are found and studied.

Our assumptions of the prehistory of this region have been and will change as more data become available. The generalized sequence presented below for the western Cascades is summarized, in part, from a synthesis of eastern Plateau and Lower Columbia River sequences developed by Blukis Onat (1981). The periods of development are grouped into two major traditions with a transitional period identified between them (Table 2.2). Where radiocarbon dates are available, they have been used to bracket the proposed chronology.

Table 2.2 Proposed cultural sequence for the western Cascades (Adapted from Blukis Onat et al. 1980).

Years Before Present	Descriptive Name	Resource use	Tool types
Present	Ethnohistoric Cultures		
250	(ca. 250 BP-present)		
500			ethnographic material culture;
1000	Specialized Resource Utilization	regional resource specialization;	specialized ground and chipped stone tools and objects
2000	(ca. 2,500-250 BP)	development of trade	
3000	Development of Specialized Resource Use		bone and antler tools; wood working tools;
4000	(ca. 5,000-2,500 BP)	combined fishing (fresh and anadromous, land hunting, plant gathering and	ground stone tools; adzes and wedges; large ground stone projectile points; grinding stones
5000			
6000		mollusc collecting	
7000	Generalized Hunting and Gathering	introduction of anadromous fishing	side notched projectile points of basalt; scrapers
8000	(ca. ?12,000-5,000 BP)		
9000		generalized hunting of land mammals, some gathering, fishing and freshwater shellfish collecting	heavy unifacial and bifacial choppers; lanceolate projectile points of basalt
10,000			
11,000			
12,000			

Generalized Hunting and Gathering (?) 12,000-5,000 B.P.

This period of generalized hunting and gathering could extend back in time as far as the retreat of the continental ice sheet, 10,000 - 12,000 B.P., or could represent a shorter period of time. There are no radiocarbon dates to support the existence of this period in the western Cascades. However, based on the comparisons of artifacts from other areas, there appear to be components of this early period along the upland river terraces of the foothills. Also, some of this supposed older material has been found stratigraphically above glacial materials, adding support to the hypothesis that it represents an immediate post-glacial occupation (Kidd 1964; Mattson 1985).

The settlement and subsistence pattern represented by this phase is one in which the riverine and upland environments were visited on a regular schedule to take advantage of the available resources. People lived and travelled in small groups, occupying low or mid-elevations of the major river valleys during the colder months. For the remainder of the year settlement is postulated to have consisted of a semi-nomadic foraging pattern. Small groups established temporary base camps where they processed food and manufactured tools. From these camps they moved into the uplands of the Cascades, hunting, gathering, and possibly fishing.

There is no direct evidence for the early period subsistence economy, because the acidic conditions of the soil rarely preserve bone, shell or vegetable matter. A hunting economy is assumed, based on the number of inland site locations and presence of projectile points. From the Manis Site there is evidence for the use of mastodon, bison and caribou as well as the more familiar deer and elk (Gustafson et al. 1979). The extent of coastal exploitation, which would include use of shellfish, fish and sea mammals, is not known. Seasonal exploitation of the anadromous fishery is hypothesized for those sites occurring on river drainages. This resource may not have been available during the immediately post-glacial period, due to water temperature, siltation, or other variables. Fishing is hypothesized as a subsistence activity practiced at these locations only after the environment stabilized.

Part of the early period of occupation in western Washington is termed "Olcott," which originally referred to one site, named after the owner of the property on which it was found. This phase appears to have a wide representation in the Northwest. It has been referred to by various other names - including "Cascade" or "Vantage" in eastern Washington (Leonhardy and Rice, D. 1970; Nelson 1969), but these appear to be contemporary variations on the same adaptive pattern. In the western foothills and the Puget Sound regions, the term Olcott is loosely used to refer to a period of development and the associated tool types. Olcott (sometimes called Olcott-related) sites occur in a variety of different environments from the outer coast, to Puget Sound, to the base of the Cascades. Large flaked cobble tools are consistent components of the Olcott tool kit.

The environment of western Washington during and immediately following the glacial recession when occupation was first possible, was vastly different than at present. Occupation in the mountains would be dependent upon climatic conditions adequate to meet subsistence needs of both animals and plants. This would follow the retreat, although not necessarily the disappearance, of the alpine glaciers as well as the continental glacier. The relationships between

post-glacial environmental effects and cultural developments are not clearly understood. Many of the known sites are located inland from the present coastline on former terraces in the major river valleys. It is possible that changes in sea level during this time flooded parts of the exposed coastline and caused loss of evidence of occupation.

Characteristic artifacts are heavy cobble tools (choppers and scrapers) and large lanceolate and side-notched projectile points of basalt. Edge-ground cobbles are found, but other ground stone is usually absent from recovered materials. A variety of large chipped stone tools, including lanceolate knives and large utilized flakes, are common. The tools are manufactured from basalt or local siltstone; finer cryptocrystalline silica does not seem to have been used in this area until later. Food procurement and processing camps are thought to be represented, as well as tool workshops. These are differentiated by the composition and distribution of artifacts, and by site size. The sites are not dense in artifacts, but cover large areas and may extend over two or more successive terraces. They may be overlain by later materials, but early deposits are generally not deep or stratified, often occurring immediately above glacial deposits.

Development of Specialized Resource Use 5,000-2,500 B.P.

A transitional period between generalized and specialized resource utilization is proposed for the western Cascades. Differences between cultural development along the coast and the mountain regions become more pronounced as people adapt to varied resource availability and needs. An inland orientation develops in the Cascades, which is influenced by or related to cultural development in the Plateau region. Artifact styles similar to those of eastern Washington become more common, this similarity continues through late prehistoric and ethnohistoric times.

Sites in the foothills are generally assigned to this period on the basis of the addition of ground stone objects and the occurrence of shouldered and stemmed and smaller side-notched projectile point styles. Some tool types persist from the previous period, including the lanceolate knives and points, and cobble and spall tools. A wider variety of chipped stone tools are present, including gravers and drills.

A more complex system of trade is apparent. It is suggested that there was increased contact and exchange with people from across the mountains during this period. This is supported by the noticeable increase in the use of cryptocrystalline silica for tool manufacture, some of which is attributed to eastern Washington sources. Earlier, local basalt and siltstone seem to have been the preferred materials.

The Middle Period climate was warmer and drier at the onset, and became comparable to present conditions by about 2,500 B.P. The progressive development of the inland and riverine subsistence system probably has its foundation in the stabilizing conditions of the river delta, upriver and foothill environments. Bone and antler tools and other faunal remains are still rare in upland western Washington sites. However, this may be because the acid forest soils cause chemical decomposition of these materials. Thus, the extent of bone working technology is not known.

Woodworking is indicated by the presence of ground stone adzes. Along the coast during the same time period, woodworking was becoming an increasingly important aspect of the technological development. This similarity may suggest increasing cultural contacts and ties with the coast during this period.

Specialized Resource Utilization 2,500-250 B.P.

Sites assigned to the late prehistoric period are considered to be representative of the fully developed subsistence activities of the ethnographic reports. In the Cascade foothills, these would include anadromous fishing of the major drainages, and land mammal hunting and plant gathering of most of the species used by the beginning of the ethnohistoric period. People along the coast were expert sea mammal hunters and they developed a technology well suited to this purpose.

Specialization in resource utilization and advances in food storage technology were likely prerequisites to an increased population density for the area. Large villages were established at the base of the foothills and along major waterways during this period, and evidence of more stabilized settlement is present. Permanent winter village sites that include evidence of long-term food processing activities, such as earth ovens, may have existed in these areas. Knowledge of the necessary technology to store quantities of food for long periods of time enabled people to focus their procurement activities on the optimal exploitation periods for specific resources, such as fish and berries. Upland camps used during specific exploitation of resources or as temporary travelling camps are considered part of the well established hunting, gathering and fishing subsistence system.

Elaboration of the tool types and styles is the trend during this period, but the tool assemblages may contain any combination of the artifacts present during previous periods. For the uplands, the additions that define the period are not clearly delineated; however, the presence of small, corner-notched and triangular projectile points is generally seen as characteristic. A wider variety of ground stone implements may be present, and these may include anthropomorphic or zoomorphic carvings. In sites where bone and antler survive, their occurrence supports the existence of seasonally oriented hunting and fishing activities.

Ethnohistoric Cultures 250 B.P.- Present

This period is characterized in the material archaeological record by the addition of objects of European manufacture. Many traditional tools were replaced by imported ones. Some tools were rendered unnecessary by the introduction of manufactured goods, while other tools exhibited a melding of native and imported materials, such as metal blades used with traditionally shaped adze or knife handles. Several artifact types that first appeared in earlier periods continue to be made and used, but a more diverse variety of raw materials were used in their manufacture. A wider range of stylistic attributes are apparent in the artifacts as well.

An active system of travel and trade among the native cultures was noted by the early ethnographers. Trade extended from the points along the coast to unknown distances east. Trade routes extended up all the major drainages, with some overland routes connecting two or more drainages. The degree of travel and trade that existed along a north to south axis is not known for the Cascades, however, the east-west routes connected with existing north-south systems along the coast and the Columbia River.

European contact caused disintegration of native cultures. Although it has not been well documented, the traditional lifeways and populations were greatly disrupted during this period of contact. Diseases for which the Indians had no immunities were introduced and entire villages were quickly decimated. The land demands of the settlers resulted in displacement of the Indian people. They were often forced to abandon the settlement and subsistence patterns that had been developing in the area for thousands of years, for the ways of a different culture. The resulting cultural conflict came to a climax with the Indian Wars of 1855-56. The concerted effort to change not only their material culture but their social, political and religious organizations damaged the cultural integrity of the Native Americans.

Mt. Baker-Snoqualmie Prehistoric Overview

Introduction

Hunting, berry collecting, plant gathering, travel and trade appear to have been the most common reasons for use of the Mt. Baker-Snoqualmie National Forest lands. The few cultural resources that have been found on the Forest appear to reflect this range of uses. Investigations under the current cultural resource program are limited to surface examination. Subsurface investigations have been conducted at only one site on the Forest to date. Future direction of the program, however, promises to change that trend. We are increasingly faced with the realization that the more we learn about prehistoric use of the Cascades, the more evidence we find of that use.

The following sections summarize, by Ranger District, the results of surface investigations that have been completed on the Mt. Baker-Snoqualmie. The five Ranger Districts of the Forest are arranged from north to south, and include the Mt. Baker (the result of a consolidation of Glacier and Baker River District in 1983), Darrington (to which the Monte Cristo District was added in 1983), Skykomish, North Bend, and White River Districts. For comparison and background, pertinent off-Forest investigations are described under the Ranger District with which they are most closely associated. Only those investigations which successfully located sites are included in this discussion. In addition, Table 2.3 lists the professional surveys completed on Forest lands to date, excluding small hydroelectric project surveys (see Washington State Office of Archaeology and Historic Preservation 1984) and timber sale reconnaissances conducted in-house. A list of the inventoried prehistoric archaeological sites concludes each section.

Table 2.3 Professional surveys completed for the Mt. Baker-Snoqualmie National Forest. *

District	Location	Author(s)	Year	Title
Mt. Baker	(Overview)	Blukis Onat, Bennett and Hollenbeck	1980	Cultural resource overview and sample survey of the Skagit Wild and Scenic River study area.
Darrington	(Overview)	Blukis Onat, Bennett and Hollenbeck	1980	Cultural resource overview and sample survey of the Skagit Wild and Scenic River study area.
	T31N R9E Sec 10, 13-15, 22, 26	Lindeman and Mierendorf	1979	Cultural resource inventory of the Pondor, Dubor and White Chuck timber sales
	T31N R10E Sec 14, 31 T31N R11E Sec 13-18, 24 T31N R12E Sec 18-21, 28	Stump, Ross, Lindeman and Stratton	1977	Cultural resource inventory of the Owl Creek Salvage Sale, White Chuck River.
	T32N R8E Sec 14, 15 T32N R9E Sec 1, 2, 4 T32N R10E Sec 9 T32N R9E Sec 26, 35	Holley and Ramenofsky	1979	A cultural resources survey of selected areas of the Mt. Baker-Snoqualmie National Forest.
Skykomish	T27 R9E Sec 16 T27N R10E Sec 15, 19 T28N R10E Sec 5 T29N R10E Sec 7, 17, 20	Holley and Ramenofsky	1979	A cultural resources survey of selected areas of the Mt. Baker-Snoqualmie National Forest.
North Bend	T20N R8E Sec 9	Holley and Ramenofsky	1979	A cultural resources survey of selected areas of the Mt. Baker-Snoqualmie National Forest.
	T21N R9E Sec 4,10 T21N R10E Sec 4, 8, 10, 16, 18, 22, 24 T22N R8E Sec 14, 26, 36 T22N R9E Sec 36 T22N R10E Sec 32	Wilke	1980	Cultural resource assessment of Cedar River exchange lands.
	T20N R10E Sec 2, 6 T21N R10E Sec 20, 26, 28, 30, 36 T25N R9E Sec 34	Hollenbeck	1983	A cultural resources survey of the Weyco 2 land exchange

District	Location	Author(s)	Year	Title
	T20N R8E Sec 11, 12, 13, 14, 22, 23, 24, T20N R9E Sec 2, 4, 6, 8, 12 T20N R10E Sec 4 T21N R9E Sec 8, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36 T21N R10E Sec 32, 34 T22N R9E Sec 4, 10 T26N R9E Sec 2, 4, 6, 11, 12, 14, 22	Carter	1978	Archaeological reconnaissance Mt. Baker-Snoqualmie group of selected Alpine Lakes Wilderness exchange lands.
	(Overview)	Hedlund, Ross and Sutton	1978	A cultural resource overview of the Green River Watershed area.
White River	T17N R7E Sec 30 T18N R7E Sec 4, 5, 6, 8, 16, 18, 20, 28, 30, 32	Lewarch, Reynolds and Jermann	1975	Archaeological reconnaissance Mt. Baker-Snoqualmie group of selected Alpine Lakes Wilderness exchange lands.
	T19N R9E Sec 2 T19N R10E Sec 16, 18, 20, 28	Hollenbeck	1983	A cultural resources survey of the Weyco 2 land exchange.
	T18N R11E Sec 1-5, 11 T19N R10E Sec 25 T19N R11E Sec 28, 29, 30, 33, 34, 35 T19N R12E Sec 34, 35, 36	Rice	1976	Naches Trail, Naches Pass Road and Rod's Gap Alternate.
	(Overview)	Hedlund, Ross and Sutton	1978	A cultural resource overview of the Green River Watershed area.

*Many parcels surveyed for land exchanges have been subsequently transferred from Federal Ownership.

View from the Mt. Baker District

Adjacent and Off-Forest Projects

Most of what is known about prehistory in the vicinity of the Mt. Baker Ranger District is the result of four surveys that have been completed over the last ten years. These focused along the major waterways in the Skagit River system. Although no less than twenty-two site locations have been identified in the upriver area of the Skagit drainage (Figure 2.5), our knowledge of prehistoric use of this area remains meager. Only one upriver site has been investigated to any degree, and this site represents only one of the site types that may occur within the Cascades.

Six prehistoric sites were identified within the Ross Lake National Recreation Area during two surveys conducted by Western Washington University (Grabert 1975; Grabert and Pint 1978). As the surveys were restricted to areas of proposed development, it is not suggested that the results accurately depict the number or distribution of prehistoric sites in the area. Robert Mierendorf, of Northwest Anthropological Laboratory, is currently working under contract with the National Park Service to develop a cultural resources overview and a model for predicting site locations within the North Cascades National Park. Although his conclusions are not yet available, Mierendorf's research has resulted in the location of additional sites, already contributing to the understanding of prehistory of this poorly known area (Mierendorf, personal communication 1985).

Five of the sites identified by Grabert (1975) and Grabert and Pint (1978), are on major waterways: the Hozomeen site (45WH79) is along the shores of Ross Lake on a terrace above the Skagit River; Big Beaver (45WH80) is at the confluence of the creek of the same name and the Skagit. Three sites in the vicinity of Newhalem (45WH63, 45WH64, 45WH81) are located within close proximity to tributary creeks and the river. The riverine locations provide a number of clues about resource use. For example, the availability of anadromous fish was probably the main consideration at these localities. If the ethnographic pattern can be used as an analogy for prehistoric use, the river provided a travel corridor to link other resource use areas accessible by water. In addition, fresh water was constantly available, one prerequisite to long-term occupation of an area.

A sixth site was identified on Cascade Pass during the National Recreation Area Reconnaissance (45CH221). A chipped-stone scraper and a flake were found during the professional survey, but there are other reports of artifacts found there by Park personnel and recreationists. Unfortunately, so few artifacts do little more than attest to use or visitation of the area. The location provides evidence of a travel route to eastern Washington and corroborates ethnographic data of transCascadian travel and trade. In this regard, it is important to note that both artifacts are made of material exotic to the area. Neither of the artifacts is stylistically diagnostic of a particular cultural period in the Northwest (Grabert and Pint 1978:64).

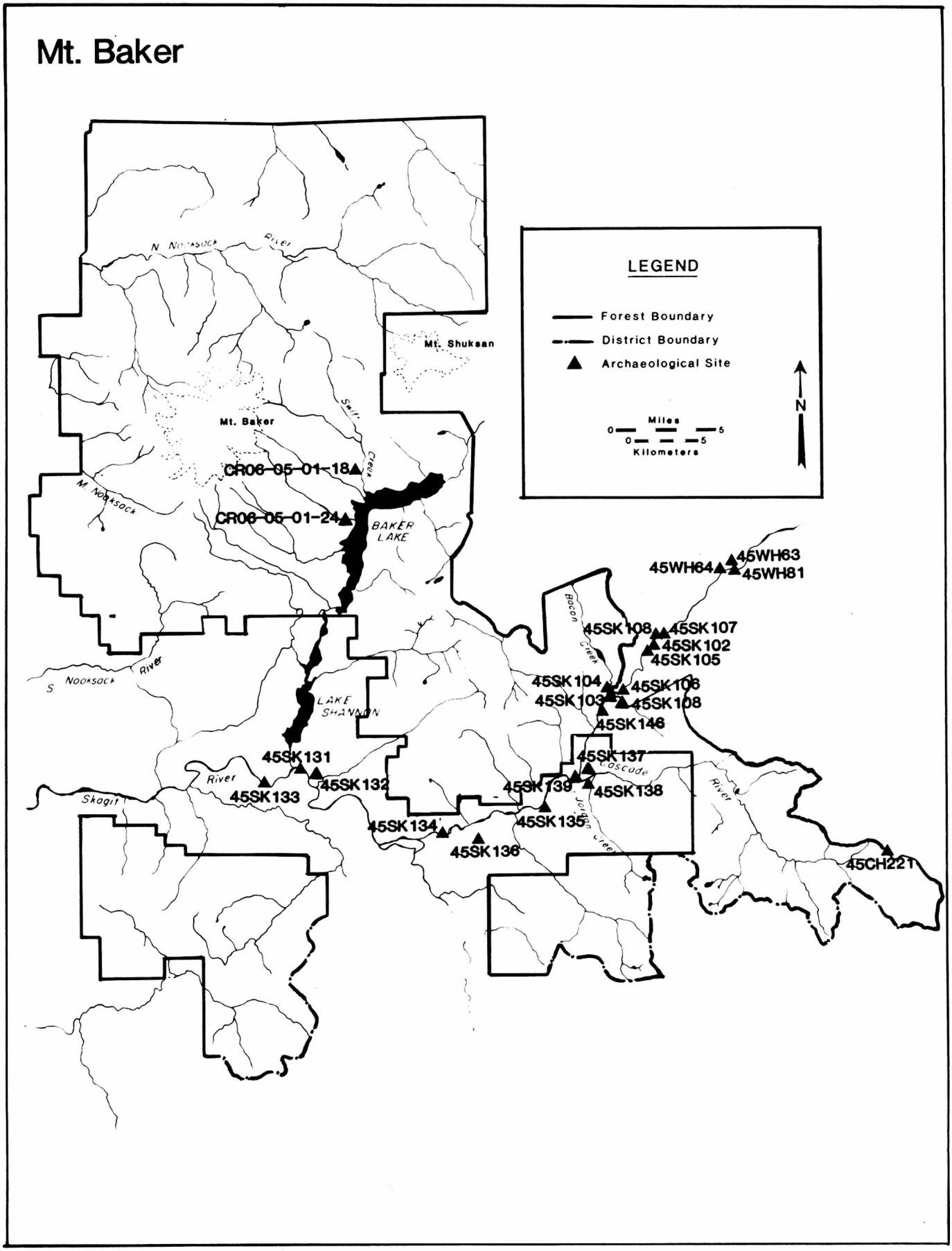


Figure 2.5 Prehistoric sites within and adjacent to the Mt. Baker Ranger District.

The Newhalem Site (45WH81)

In 1978, Grabert and Chesmore (1979) conducted test excavations at the Newhalem Site. They identified four clusters of artifacts on the surface of the site, and placed over 20 test units in the site (1 x 1 m and 1 x 2 m units). The majority of artifacts recovered (approximately 90 specimens) were pebble-spall implements. A number of utilized flakes were present also. The primary material used was locally derived graywacke. Only three cryptocrystalline silica flakes were recovered. No temporally diagnostic artifacts were recovered, but Grabert and Chesmore reported the occurrence of ground stone artifacts and a carved soapstone object, which they suggest is a fish effigy or amulet. A historic component overlies prehistoric material at this site. Radiocarbon dates are not available; they were considered impractical because of the possibility of mixing recent charcoal with archaeological remains.

The results of these investigations indicate that the site was occupied during the late prehistoric period and through historic times, spanning the last four or five centuries. The types and distribution of prehistoric artifacts at the Newhalem site are interpreted as the remains of a fishing camp, located away from a main settlement. This interpretation has some support from the ethnographic literature, as the permanent village at Newhalem is reported to have been located on the north bank of the Skagit, while 45WH81 is on the south bank (Collins 1974:19).

In 1978, a survey of an area along the upper Skagit was completed in conjunction with the proposed Copper Creek hydroelectric development (Skolnik 1978). Six prehistoric use sites were identified along the banks of the river. The finds varied from a sparse scatter of lithic material observed on the ground surface, to isolated artifacts, to one location at which the only physical indication was firecracked rock and charcoal found during subsurface coring (45SK104 - see District Inventory CR06-05-01-25). The surface artifacts generally consisted of basalt or siltstone flakes, yet two cryptocrystalline flakes were found at one site. No conclusions were drawn, as none of the sites have been tested and no temporally diagnostic artifacts found.

In 1981, Moura (1981) recorded a site uncovered during a construction project on private land (45SK146). The site is located on an older terrace above the Skagit River. His observations were limited to surface material and what came up with the backhoe during construction. It was Moura's impression that the material looked Olcott in appearance and technique of manufacture. Olcott materials from the area typically exhibit evidence of weathering (Kidd 1964), and Moura noted a chemical patina on the surface of the artifacts that were uncovered. Again, the location on an old terrace and the occurrence of large basalt or siltstone cobble tools are characteristics that tentatively suggest an early cultural component in the western Cascades.

The fact that most known sites are located along the Skagit River is at least partially due to sampling bias; there has been little systematic work in the uplands. Yet, portions of the Nooksack River have been surveyed and no prehistoric sites have been recorded along the upper reaches. The Skagit is unique in comparison to the other rivers of the Forest, in that it breaches the Cascades, providing the means for an extensive communication and travel system between culture areas. The implications of this have not been fully addressed.

The Wild and Scenic Rivers Study

Another survey was conducted in the upper Skagit River Valley in 1979, under contract with the Mt. Baker-Snoqualmie National Forest. Blukis Onat et al. (1980a, 1980b) completed a cultural resources Overview for the Skagit Wild and Scenic River study proposal. Again, this study focused along the major waterways; the Skagit, Cascade, Sauk and Suiattle Rivers were included. Only a partial reconnaissance was completed in response to recreation developments proposed by the Forest at the time. The project scope of work limited the archaeologists to surface investigations, which resulted in the location of eight prehistoric sites (45SK131, 45SK132, 45SK133, 45SK134, 45SK135, 45SK136, 45SK137, 45SK139). In addition, one previously recorded site (45SK103 - Skolnik 1978) was revisited during the field investigations for this project. All are located on terraces along the banks of rivers, at the mouths of tributary creeks, or along oxbow lakes. Most of the artifacts observed at these sites were large basalt or siltstone flakes and cobble tools, with no temporally diagnostic pieces. Cryptocrystalline silica flakes were seen at only one location (45SK135).

With only the ethnographic literature and surface observations from which to draw, Blukis Onat made some generalizations about the periods of use that were represented by these sites. Where sites were found to be on second terraces above the historic floodplain, it was hypothesized that these could have potential for earlier components to be present. Sites located within the current floodplain, or in areas where a great degree of cutting and channeling has taken place, are more likely to yield remains of lesser antiquity. Furthermore, the locations of seven of the eight prehistoric sites were correlated with ethnographically recorded village sites.

Blukis Onat et al. recommended that all of the prehistoric sites are potentially eligible for the National Register of Historic Places "due to their possible significance in local Skagit prehistory, the prehistory of the Cascade region, and the development of prehistoric and ethnohistoric cultures in the Northwest area" (1980a). However, further work at these sites is not anticipated at this time. None of the eight prehistoric sites recorded during this survey are on National Forest land. As the administrative agency for the Skagit Wild and Scenic Rivers, the Mt. Baker-Snoqualmie follows these management directions for cultural resources within the administrative boundaries:

1. On National Forest lands, procedures in FSM 2360, 36 CFR 800 and current Memoranda of Agreement with the State Historic Preservation Office (SHPO) will be followed to inventory, evaluate and protect cultural resources.

2. On private lands, procedures in FSM 2360 and 36 CFR 800 will be followed to evaluate and protect cultural resources impacted by a Federal undertaking.

3. State laws will be relied upon to protect cultural resources impacted by activities of private landowners and private land development.

4. If State laws do not protect a major cultural site and the cultural resource affected is significant, the Forest Service may attempt purchase of necessary rights to insure protection.

Within District

Most reconnaissance on the Mt. Baker District has been conducted in conjunction with timber sales. Until recently, it appeared that if people had used the mountains prehistorically, they did not leave evidence of that use. As we learn more about site identification in the Forest, we are beginning to find traces of the past use. In 1983, a large flaked cobble was found on Swift Creek (CR06-05-01-18) (Figure 2.6), quite a distance from the main river course. It is reminiscent of the Early Period material (Olcott). Unfortunately, no other artifacts were found in association, leading to speculation that the cobble may have been redeposited. The area had undergone some previous disturbance as a result of road construction, one of the reasons that the deposition of this artifact is in question. A testing program will be undertaken to determine the significance of this find, before the site is disturbed further.

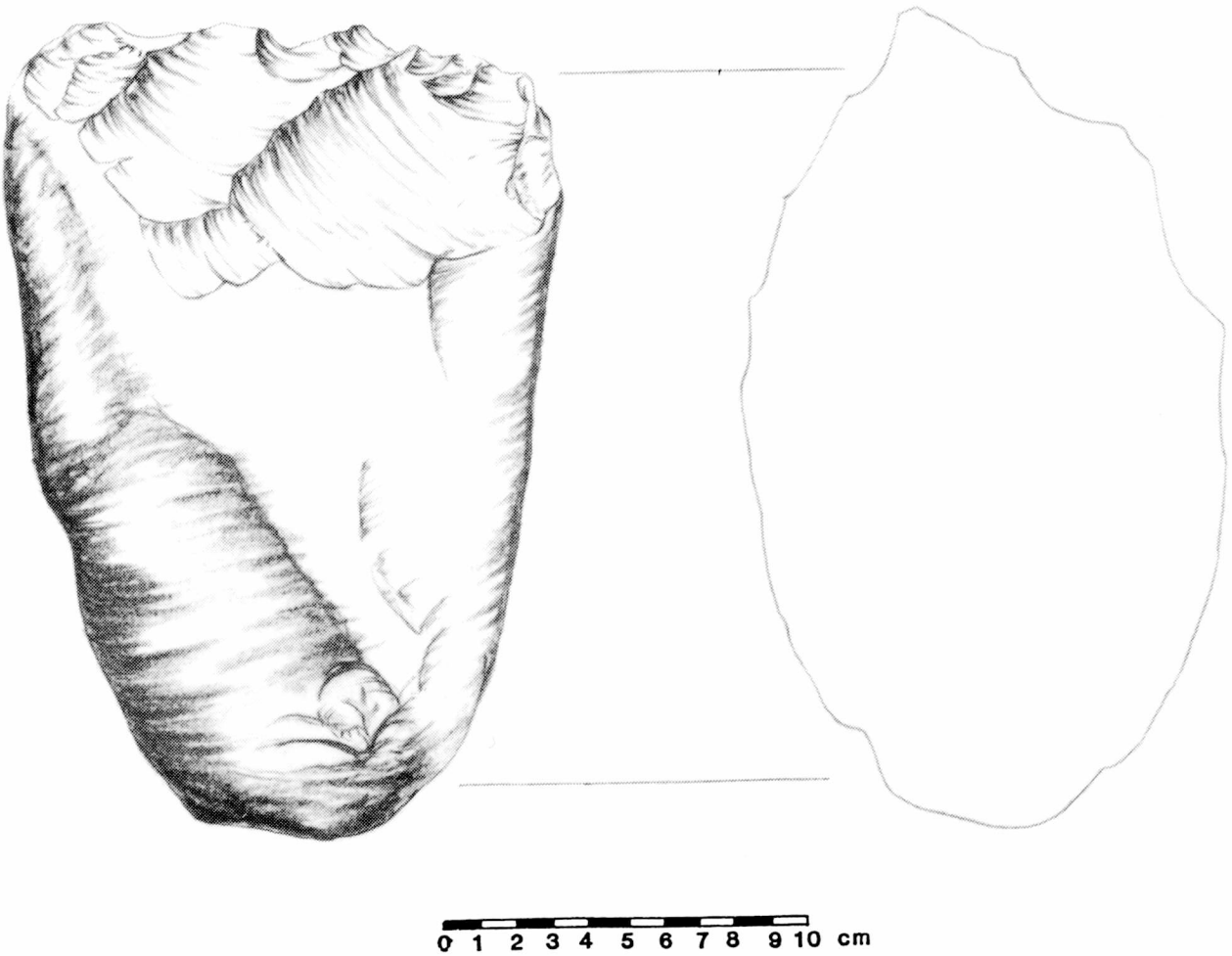


Figure 2.6 Cobble chopper tool from site CR06-05-01-18, Mt. Baker Ranger District.

More recently, the District Archaeologist conducting a survey for a timber sale, found a scatter of flakes below the present water level of Baker Lake (CR06-05-01-24). Additional work has not been done at this site.

As a result of the Copper Creek hydroelectric project proposal (Skolnik 1978), one additional site was recorded on the Mt. Baker District near the mouth of Bacon Creek (CR06-05-01-25 - 45SK104). While no artifacts were observed, this site was identified based on the evidence of a layer of charcoal found during subsurface coring. It is also close to an ethnographically recorded village site. No other information is known, and the site should be tested to verify the existence of cultural material before additional ground disturbance takes place at this location.

An actual prehistoric use and settlement preference for riverine areas may well be reflected in the distribution of known sites (Figure 2.5); although three other explanations appear more likely. Firstly, it is possible that the use of the mountainous terrain was of a nature that did not result in archaeological remains. A temporary campsite not revisited or an overnight stop while en route elsewhere, would not leave much of a mark on the landscape. Secondly, terrain and vegetation have continued to hinder discovery of prehistoric remains. Thirdly, to date, little archaeological work has been done. The key to future identification is a continued inventory program in the forested zones based on knowledge of the environmental setting and the kinds of sites that have been found in adjacent areas.

Mt. Baker District Prehistoric Site Inventory

Three prehistoric cultural resource sites have been inventoried on the Mt. Baker Ranger District (Table 2.4). The inventory list below also includes the prehistoric sites that were identified within the administrative boundary of the Wild and Scenic Rivers, listed by their State Inventory Numbers. As mentioned above, the Mt. Baker-Snoqualmie has certain responsibilities for these sites, although involvement beyond review and comment on proposed undertakings is unlikely at this time.

Table 2.4 Mt. Baker Ranger District prehistoric site inventory

Forest Inventory Number	Name	Description	Recommendations
CR06-05-01-18	Cobble Chopper Site	An isolated biface pebble tool located on a south facing slope between two creeks that drain into Baker Lake. Possibly located on an aborginal trail route.	Further investigation and testing recommended to evaluate this site.
CR06-05-01-24	Baker Lake Lithic Scatter	Flakes were found along the shore of Baker Lake, below the present lake level.	Further investigation and testing recommended to evaluate this site.
CR06-05-01-25	Bacon Creek 45SK104	Charcoal subsurface	Further investigation and testing recommended to evaluate this site.
	Prehistoric Sites within the Wild and Scenic River corridor, administered by the Mt. Baker Ranger District.		
45SK131	Ovenell's Site	Located on a series of terraces above the current flood level of the Skagit River. Stone artifacts observed on the surface.	See Blukis Onat et al. 1980.
45SK132	Jackman Creek Site	Artifacts have been found in the creek.	See Blukis Onat et al. 1980.
45SK133	Maupin Site	Located on a slight river terrace surface. Observations include cobble choppers, flakes, and partial bifaces, and fire cracked rock.	See Blukis Onat et al. 1980.
45SK134	Johnson's Site	A concentration of basalt flakes was observed in a road cut. Located on an earlier floodplain terrace of the Skagit River.	See Blukis Onat et al. 1980.
45SK135	Corkindale	Lithic materials, including choppers, flakes and a projectile point were seen along a former riverbank. Very small pieces of shell and bone, as well as fire cracked rock were also seen.	See Blukis Onat et al. 1980.
45SK136	Barnaby Slough Site	Located on a terrace above a remnant oxbow. Basalt flakes and fire cracked rock were seen eroding from a disturbed area.	See Blukis Onat et al. 1980.
45SK137	Raspberry field site	Located on alluvial deposits at the mouth of the Cascade River. Lithic debris was observed on the surface.	See Blukis Onat et al. 1980.
45SK138		A burial site	See Blukis Onat et al. 1980.
45SK139	Marblemount	Located above the Skagit River, lithic flakes were observed on the surface.	See Blukis Onat et al. 1980.
45SK103	Bacon Site	Located on a terrace above the Skagit River, basalt flakes were seen eroding from the river bank.	See Blukis Onat et al, 1980.

View from the Darrington Ranger District

Adjacent and Off-Forest Projects

Archaeological investigations conducted at sites along the lower Stillaguamish and its tributaries have been important to the understanding of prehistoric development in western Washington. Three sites are located near Arlington; the Myrick/Anderson Site (45SN26) and the Olcott Sites (45SN14 and 45SN63) are located on older river terraces above the present day Stillaguamish (Blukis Onat, personal communication 1983; Kidd 1964). Although none of these sites have yielded material suitable for C^{14} dating, the artifacts are very similar to the early material found in the Fraser River Valley, and are therefore interpreted as belonging to the same time period, between 9,000 and 5,000 B.P. (Borden 1961).

The Olcott Sites (45SN14, 45SN63)

The Olcott sites represent a large and complex habitation area near the confluence of the South Fork of the Stillaguamish and Jim Creek. There is an extensive collection from the surface (Kidd 1964) as well as from construction monitoring and test excavations (Blukis Onat 1978, 1979, 1980). It includes flaked cobbles, cores, flakes, bifaces and lanceolate points. Tools manufactured by grinding are usually not associated with early components. These artifacts are made of basalt or siltstone, and exhibit a distinctive patina caused by chemical weathering. This artifact assemblage is interpreted as being associated with the early post-glacial settlement of western Washington, a period during which unspecialized gathering and land mammal hunting subsistence activities were practiced.

Artifacts at the Olcott sites are distributed over a series of at least four old terraces, and have been found intermittently over a distance of approximately two miles. Occupation or recurring use of this location may have extended over a long period of time, with habitation shifting to different terraces as the level of the river receded and the effects of the melting glaciers became more remote. Additionally, a site containing some tools manufactured of cryptocrystalline silica (chert, chalcedony) was found at the mouth of Jim Creek (45SN33B). This site is tentatively interpreted as belonging to a later period, based on the occurrence of the cryptocrystallines which in this instance are often attributed to non-local sources and associated with the development of a later trade network. The site has not been further tested. Archaeological test excavations at the East Arlington Regional Park locality (45SN63), which is an extension of the original Olcott Site, led Blukis Onat to suggest that an entire sequence of resource development may be represented in the combination of these sites (personal communication 1983).

Olcott or Olcott-related material has also been found on terraces near Granite Falls and along both sides of the Pilchuck River, as well as in the Skykomish drainage; but none of these locations have been tested. Thus, there exists a gap in our knowledge concerning the transition between the early material along the base of the foothills of this area and the use of the mountains, as documented ethnohistorically.

The Wild and Scenic Rivers Study

A Cultural Resources Overview was completed for the Wild and Scenic Rivers Study Area, under a contract between the Institute of Cooperative Research and the Forest (Blukis Onat et al. 1980a, 1980b). On the ground surveys were limited to high probability localities, proposed development areas, and ethnohistorically reported use areas. The survey identified a number of locations with good archaeological potential (see Blukis Onat et al. 1980b:37-47). The mouths of creeks are included, as are remnant channels and oxbows of the larger rivers. These are considered likely prehistoric habitation or camp sites in the riverine environment. In addition, many of these locations may be associated with ethnohistorically recorded sites. Areas with potential for early cultural deposits are former river terraces that may be associated with higher water levels of the post glacial period.

One site was recorded during the survey portion of this project. The site is located near the mouth of Tenas Creek, where two older river terraces are present above the Suiattle River. It is not on National Forest land (see District Inventory below). Surface evidence of the Tenas Creek Longhouse site (ICR-80-Su-P1) was not found, yet subsurface augering revealed areas of charcoal which may be associated with a habitation site. According to ethnohistoric reports, this was the location of a longhouse over 100 years ago. Further survey and testing are recommended in this vicinity to determine the existence of additional cultural material.

Within District

The Darrington District has one prehistoric site recorded on the Washington State Archaeological Site Survey Inventory. Along the south bank of the White Chuck River, Lindeman and Mierendorf (1979) identified Duwhkulub Shelter (CR06-05-02-23 - 45SN80) during a timber sale survey conducted under contract with Washington Archaeological Research Center. The name is derived from the Sauk word for the White Chuck River. On the protected floor of this granitic overhang, they found fire-broken rocks and one cobble exhibiting pecking along one end and an edge, possibly used as a hammerstone; these artifacts were recorded and left in place. No other artifacts were found during the surface examination, and subsurface tests were not attempted. One earlier reference to this location by Nels Bruseth, Forest Service employee, avid outdoorsman and freelance writer from Darrington, mentions artifacts having been found there in the past (Bruseth 1951). No conclusions can be made because of the scarcity of information available. Lindeman and Mierendorf, however, made the following observations:

> ... The shelter is located within 50 m of an important aboriginal fishing site (mentioned previously) just up the Sauk River from the mouth of the White Chuck River. In addition, the shelter is located approximately 100 meters from an ethnographically reported Sauk-Suiattle campsite at the confluence of the White Chuck and Sauk rivers. Another consideration is that prior to initial logging activities in this century, there may have been stages in the local floral succession during which the shelter was visible from the Sauk River, a major tributary of the Skagit River and a documented aboriginal travel route. Finally, the shelter (and the [usually] accompanying excellent preservation of perishable remains) are rare occurrences for archaeological pursuits west of the Cascade Mountains. Should any cultural remains exist below the surface of the shelter, the potential contribution to regional prehistory and history would be immeasurable (1979:53).

of the Cascade Mountains. Should any cultural remains exist below the surface of the shelter, the potential contribution to regional prehistory and history would be immeasurable (1979:53).

Two other locations are included in the District prehistoric site inventory. An isolated ground stone maul was found along an intermittent drainage during planting at the Captain Moses Seed Orchard (Figure 2.7). The channel is possibly a remnant of an abandoned course of the Suiattle River. A likely place for prehistoric use and/or occupancy, it is unfortunately subject to soil erosion and redeposition caused by water action. To date, nothing else has been found at this location, but it is considered a sensitive setting for sites in terms of cultural resource potential.

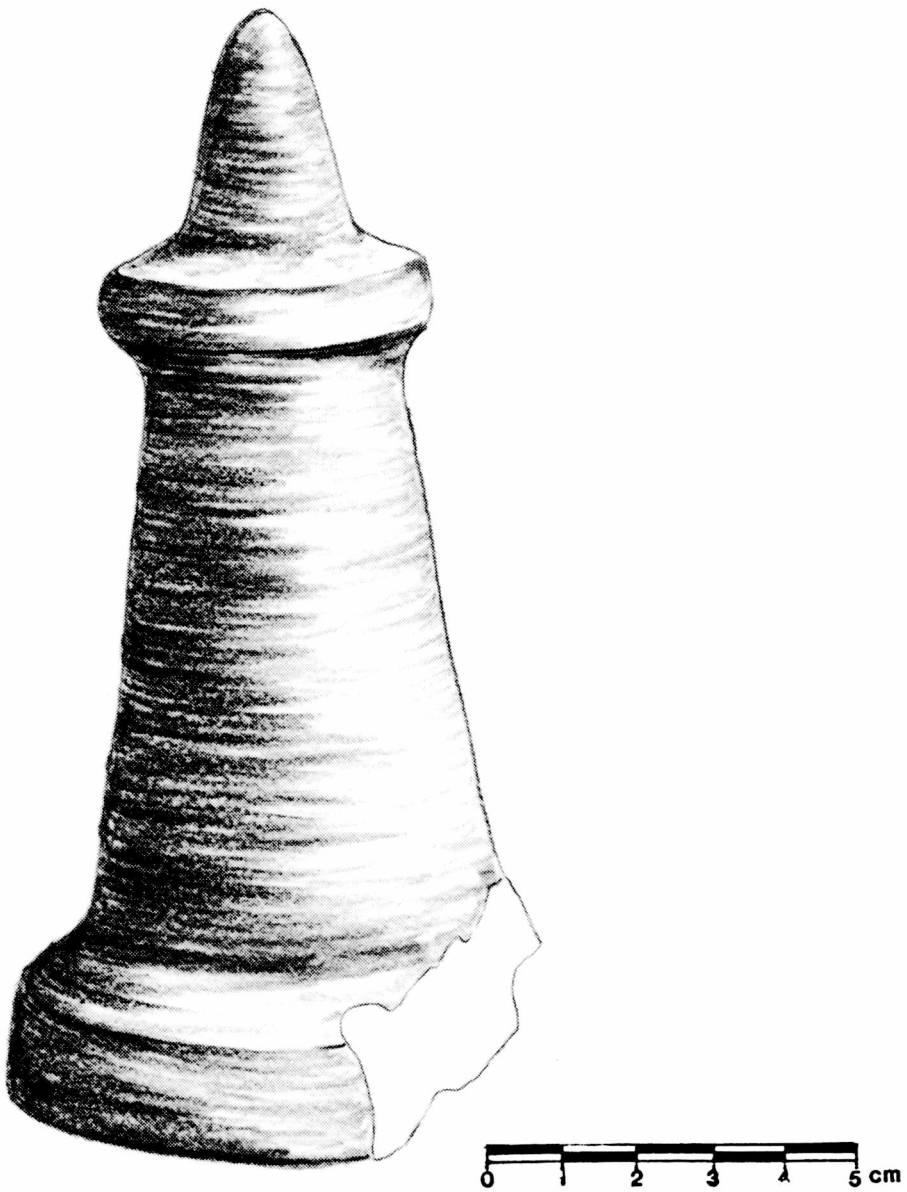


Figure 2.7 Ground stone maul from Captain Moses Seed Orchard (CR06-05-02-48), Darrington Ranger District (drawn from a photograph, scale unknown).

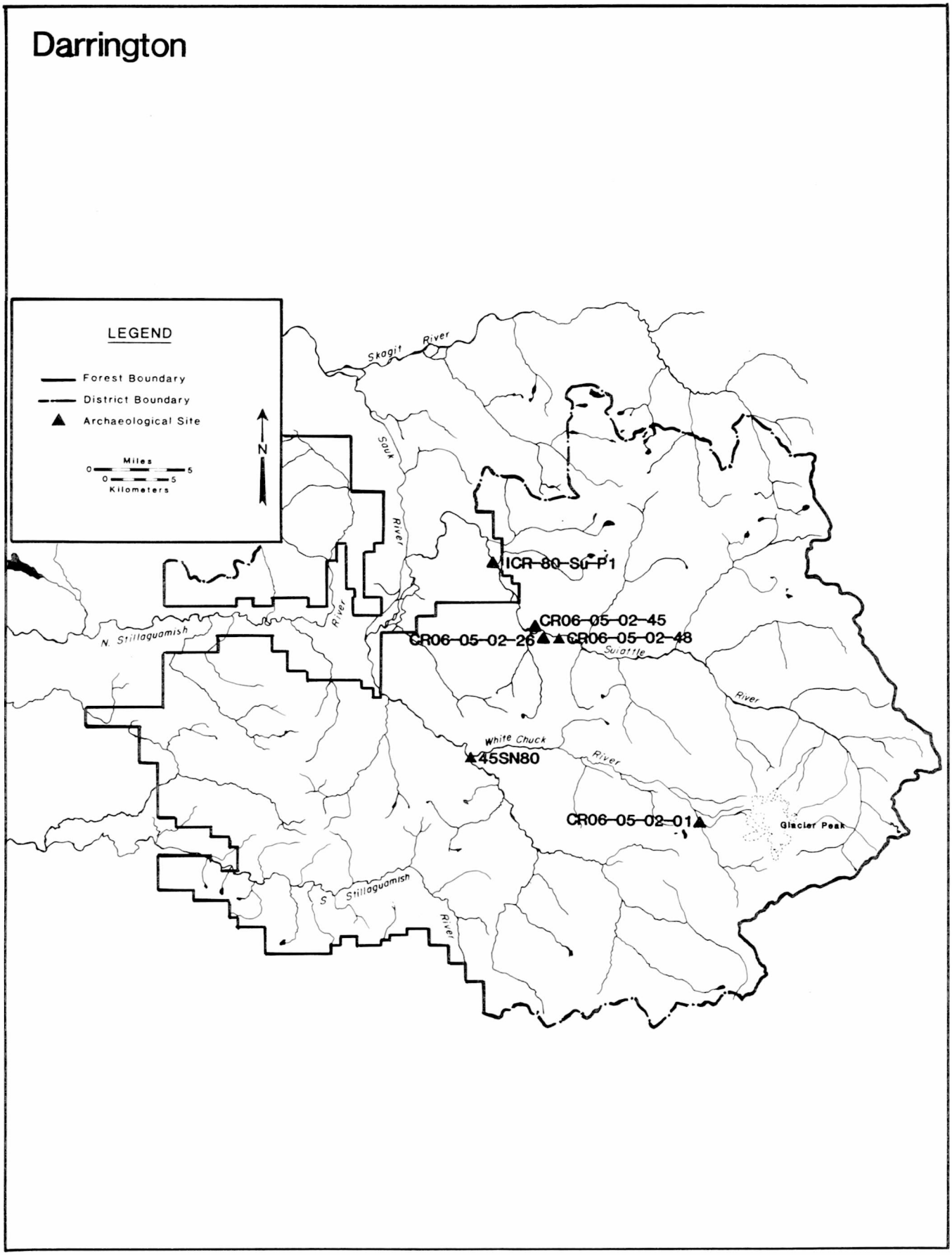


Figure 2.8 Prehistoric and ethnohistoric sites inventoried within the Darrington Ranger District.

Forest Service personnel identified a petroglyph in the shape of a sun symbol, on a rock near Kennedy Hot Springs. It remains a mystery because its antiquity has not been documented and there is some question as to whether it is of aboriginal origin. The rock is located on a small flat next to a creek, and is close to the hot springs. Its setting currently makes this a popular camping area. It can be assumed that it was an inviting camp site in prehistoric times too, if it was in an area that was used or travelled through during the prehistoric past.

In areas of few archaeological sites, any clue to occupancy or use may be invaluable to our reconstructions of settlement and subsistence patterns. Where ethnographic evidence exists, but no artifacts have been found, it is possible that natural erosion or deposition have redistributed or covered the material that may have been present. Moreover, temporary camps of short duration may contain little or no evidence of their use in the form of artifacts. Yet, by incorporating information about suspected localities with that from known sites, patterns of land use can be hypothesized. These will be helpful in developing future survey designs for locating prehistoric sites on the Forest.

Darrington District Prehistoric Site Inventory

Three prehistoric sites have been inventoried on the Darrington District. Very little is known about these sites, and it will be necessary to gather additional information to determine their significance. Two ethnohistoric sites are included in the inventory below, due to their association with Indian use and occupation of the area (Table 2.5). The Tenas Creek longhouse site is also included, listed by a temporary identification number because it falls within the Wild and Scenic River boundaries administered by the Forest Service (See Blukis Onat et al 1980).

Table 2.5 Darrington Ranger District prehistoric site inventory

Forest Inventory Number	Name	Description	Recommendations
CR06-05-02-01	Kennedy Hot Springs	A petroglyph of unknown origin and antiquity.	Protect site until its significance can be determined.
CR06-05-02-23	Duwhkulub Shelter 45SN80	Surface observations include fire cracked rock and a possible hammerstone. Site is sheltered by a rock overhang.	Further investigation and testing to complete an evaluation.
CR06-05-02-26	Captain Moses Seed Orchard Stripped Cedar trees	A group of four cedar trees scarred from deliberate bark removal. Scars are V-shaped. Site is located on a terrace above the river.	Trees have been removed. Retain permanent records.
CR06-05-02-45	Suiattle River Stripped Cedar trees	There are reported to be at least 25 stripped cedars in addition to at least 3 large oval pits (of unknown origin). Scars are "V" shaped. Site is located on a terrace above the river.	Complete an evaluation of the site.
CR06-05-02-48	Capt. Moses Seed Orchard Maul	An isolated ground stone maul located along an abandoned river channel.	Retain records and artifact for future study.
ICR-80-Su-P1 (pvt)	Tenas Creek Longhouse Site	Charcoal was seen in subsurface cores. No evidence of a prehistoric site is visible on the surface. Site is located on a terrace above the river at the location of an ethnohistoric longhouse.	Further investigation and testing to complete an evaluation.

View from the Skykomish Ranger District

Adjacent and Off-Forest Projects

There are a number of known prehistoric sites in the foothills adjacent to the Skykomish Ranger District (Mattson 1985), but very little is known about them. No prehistoric sites have yet been located on the District (Figure 2.9). Four locations of prehistoric use have been recorded along the Skykomish River and its tributaries, approximately between Index and Monroe. From first appearances, they represent two periods in prehistory.

Woods Creek (45SN16), Butler's Berry Field (45SN20) and the Schonhard Site (45SN72) exhibit similar artifact assemblages indicating occupation during the Early Period. This interpretation is based on limited surface collections and an examination of collections in the possession of the land owners, as none of the sites have been tested or dated. The sites, however, appear to have yielded some combination of artifacts generally considered Olcott, including cobble tools, cores, large flake tools and bifaces of basalt or siltstone (Kidd 1964; Mattson 1985).

An important characteristic of the early sites in this area is their location relative to present river and creek channels.

> The hypothesis that high elevation equals greater age is advanced because a) glacial retreat bares high ground first and b) isostatic adjustment of sea and land relationships favor higher over lower areas. That is, drowned river valleys will emerge above tidal influence later than contiguous higher ground (Mattson 1985:38 after Kidd 1964).

Butler's Berry Field Site, for example, is located three-fourths of a mile north of the Skykomish River, abutting a low hill. A series of oxbow lakes and numerous bends in the river suggest that it was once located closer to the main water course, presumably at the time of occupation. The Wood's Creek Site was found in a similar topographic environment, yet at a higher elevation; the former is at 80 to 100 feet, and the latter is 240 to 280 feet above sea level (Kidd 1964). The sea level of the early prehistoric period was higher than today, and without the extended development of river deltas, these areas were much closer to marine resources. Since historic times, the activity and flooding of Cascade drainages have probably caused the destruction of sites located nearer the present channels.

A fourth site, located farther upriver near Index, is representative of occupation during a later time. The surface presence of cryptocrystalline silica points and other artifacts, in addition to cobble tools and basalt flakes has led to the assumption that the site at Swanson's Auto Court (45SN74) dates comparatively late (Washington State Archaeological Site Survey Record); however, without excavation, the evidence is not conclusive. There remains the possibility here for a stratified deposit with multi-aged occupations.

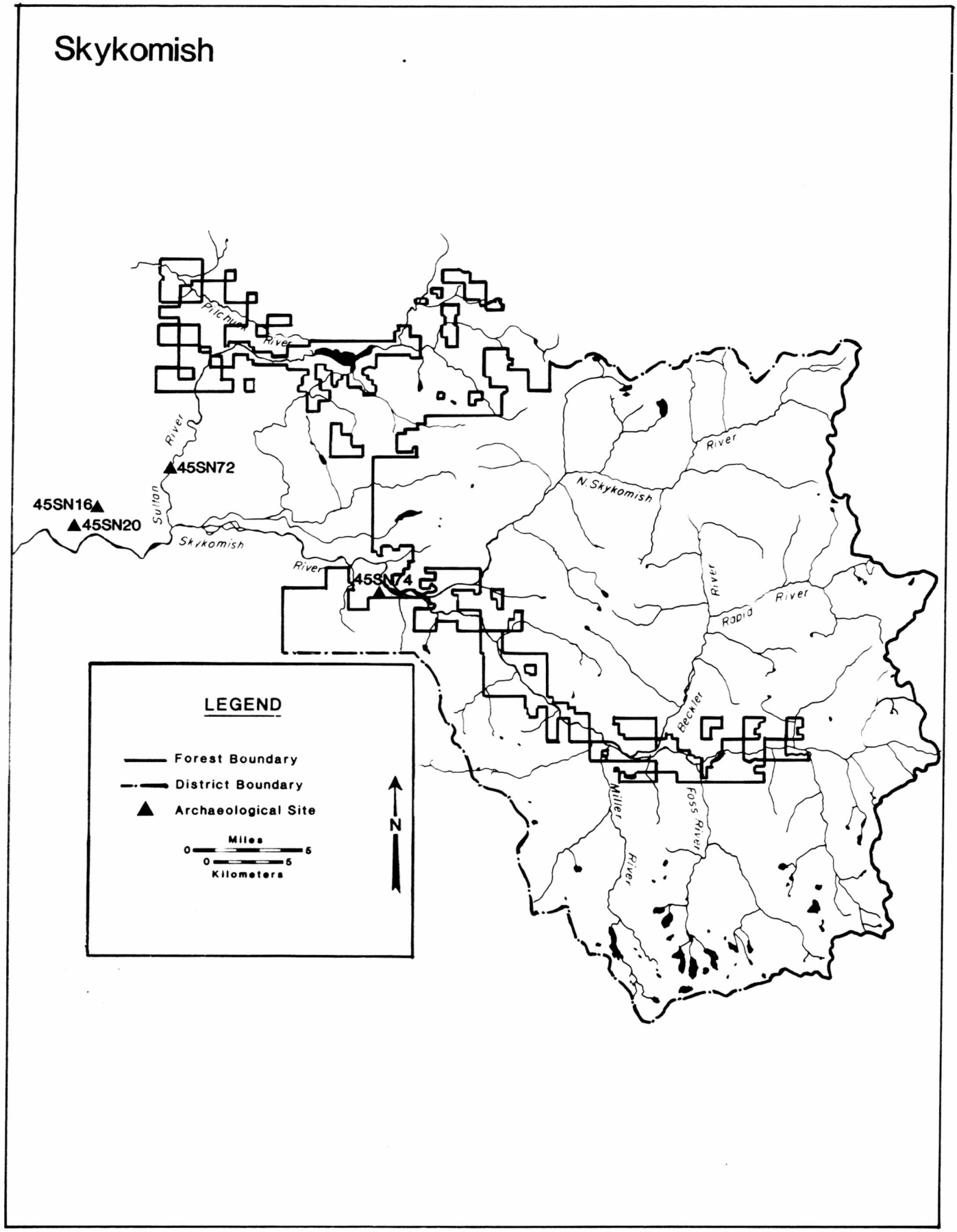


Figure 2.9 Prehistoric sites in the vicinity of the Skykomish Ranger District.

Several sites have been reported along the Pilchuck River. John L. Mattson, while gathering data for his Ph.D. dissertation (1985), located many sites around Granite Falls and along both sides of the Pilchuck. Excavation and testing at a few sites have returned interesting results.

Tu-Sa-Go-U (45SN32)

Mattson conducted an excavation at the Tu-Sa-Go-U site in 1976. He placed two 1x1 meter units and one 4x4 meter unit in the site, noting that cultural material extended to a maximum depth of .75 meters. Mattson recovered over 700 artifacts from the excavation, all of which were stone, and the majority of which he identified as basalt (597). Only nine artifacts were identified as some form of cryptocrystalline silica material. The artifact assemblage consisted primarily of waste flakes, however, a wide variety of tools were present including cores, knives, scrapers, projectile points, large utilized flakes, large spall tools, cobble tool, manos and a hammerstone. The artifacts, according to Mattson, exhibit a level of lithic technology that represents the earliest phase of Puget Sound Basin prehistory, possibly predating an Olcott phase. The projectile points are predominately large lanceolate styles, made of basalt.

In conclusion, Mattson states: "45SN32 is part of a site complex which appears to extend from the town of Granite Falls to the community of Lochsloy [approximately two miles] to the southwest. Archaeological evidence is highly suggestive of a residence area for this particular site, grading into a kill site at the James place (45SN27) and a primary tool reduction center at the Ray Gray site (45SN40). The topography and land/water relationships would easily lend themselves to a mega-fauna hunting situation which is commonly ascribed to peoples associated with this type of artifact inventory" (Mattson 1985:290).

The Office of Public Archaeology conducted a survey in 1977 for the proposed State Route 2 right-of-way, and determined that three sites (45SN29, 45SN48 and 45SN49) would be damaged by the road construction. After completing preliminary testing at these sites, the conclusion was reached that only 45SN49 and the north half of 45SN48 (referred to as 45SN48N) warranted further investigation (Chatters and Thompson 1979). Significant concentrations of artifacts were not found at the other two localities.

Myrick Site (45SN48N) and the Pilchuck Site (45SN49)

In 1980, the Office of Public Archaeology returned to further test and evaluate the sites. A total of 152 units (2x2 m) were excavated at 45SN48N, and 193 artifacts were collected, consisting primarily of flakes and cores of basalt and weathered siltstone. In addition, a few battered cobbles were recovered. In their report of the excavations, Lee Stilson and James Chatters conclude: "Complete data analysis... indicates that 45-SN-48N is a specialized quarry site, probably dating to the 'Olcott' phase or 'Early Period' (ca. 12,00 - 5,000 B.P.)" (1981:1).

The Pilchuck site, 45SN49, is located very close to 45SN48N, however there is no apparent cultural or chronological relationship between them. The artifact assemblage recovered from 56 test units (1x1 m) is similar to the

recent components of excavated sites along the Snoqualmie River (Tokul Creek (45KI19) and Biderbost (45SN100), and at Lake Sammamish (Marymoor - 45KI9). About half of the the artifacts were cryptocrystalline silica material, but very few were functionally diagnostic. It is suggested that the site represents a temporarily occupied seasonal camp and is assigned to a time period of about 1,000 to 200 B.P. Stilson and Chatters base their conclusion on the restricted range of artifact types and the low artifact density uncovered during the test excavations (1981).

Within District

Until recently, there was only one report of artifacts having been located on the District, and that information is uncertain. In a report of a cultural resource assessment of the Sultan River hydroelectric project, Gail Thompson and Glen Lindeman wrote: "...one informant reported finding a projectile point in the Sultan Basin, although its location was said to be above the proposed reservoir raise. Of course, prehistoric hunting could have left isolated remains, and the finder located no other artifacts after searching the area" (1979:45). The finder, in this case, would not reveal the exact location, but it appears from the above description that it may have been retrieved from National Forest land.

In the fall of 1986, a prehistoric site was discovered during a highway reconnaissance project and a test was begun in December. Unfortunately, more detailed information was not available in time to include in this overview.

The district has initiated several reconnaissances for specific projects; but so far, their finds have been limited to historic sites. Drawing from the ethnohistoric literature, additional evidence associated with hunting and berry picking may be expected.

Skykomish District Prehistoric Site Inventory

No prehistoric sites have been inventoried on the Skykomish District.

View from the North Bend Ranger District

Adjacent and Off-Forest Projects

In 1977, the U.S. Army Corps of Engineers contracted with the Office of Public Archaeology in Seattle to assess the extent of impacts that would occur to extant cultural resources with implementation of the planned improvements to the dam at Chester Morse Lake. Reconnaissance activities were limited to the shores of the lake, and included inventory and surface collection to provide basic data for functional and temporal interpretations. The lake level was relatively low when the field work began in late August, which aided in the discovery of six prehistoric sites within the project area. These were identified by lithic material visible along the exposed beach and ground surface of the adjacent shoreline (Lewarch 1978, 1979).

The results of that study have already added a great deal to our understanding of prehistoric use of the Cascades, and future work promises to add much more. In an analysis of the site material, Lewarch (1978) found that projectile points could be associated with styles that date back as far as about 4,000 years B.P. (Frenchman Springs Phase, see Table 2.1) The variety of formed tools, utilized flakes and surface features were indicative of a wide range of activities having taken place within the lakeshore environment. Tool manufacturing (45KI25, 45KI29, 45KI30, 45KI31), subsistence related cutting, scraping, pounding and cooking activities (45KI25), and ethnographically reported berrying (45KI30) are represented in the artifact collections. In addition, a notched basalt net weight from one site (45KI31) is significant in that it can be directly attributed to fishing activities.

Lewarch (1978) hypothesized that one large and complex site (45KI25) may be a winter village habitation site, making it unique among the known prehistoric sites in the Cascade foothills. Lewarch based his interpretation of 45KI25 on the high artifact density, large horizontal extent, and large range of artifact types present, which suggest a variety of subsistence activities. Until these findings were made available, only sites suggested to be temporary camps had been identified within the foothills, and these are located primarily on river terraces. The lake environment also represents an environmental setting not previously investigated within the Cascade foothills. This site and one other (45KI32) were tested in the summer of 1983 by the Office of Public Archaeology, and stratified deposits of up to one meter were discovered (Larson 1983). From the lower levels came basalt and siltstone artifacts, and cryptocrystalline was more prevalent in the upper, most recent, deposits. Projectile point styles imply that a complete sequence of cultural occupation for the last 9,000 years may be present, but absolute chronological data have not been generated.

The complex of sites has been determined eligible for the National Register of Historic Places. Larson states: "The lake environment, the variety of physiographic settings within that environment in which the sites are located, and the probable continuous re-occupation of the lake for 9,000 years offer a data base for examining changes over time in resource utilization and settlement pattern of a specific environment whose use by prehistoric populations is minimally understood" (Larson 1983).

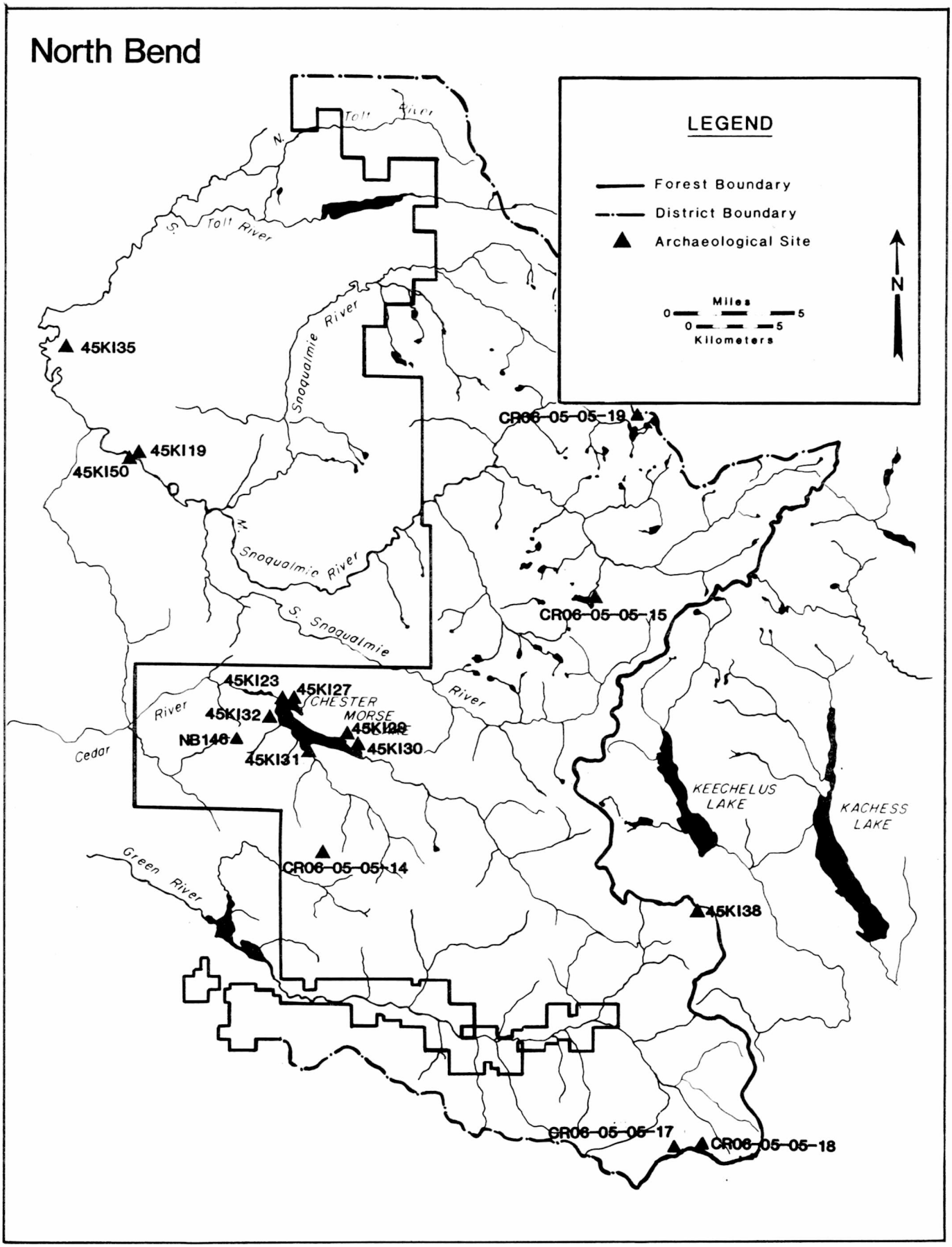


Figure 2.10 Prehistoric sites within and adjacent to the North Bend Ranger District.

At lower elevations along the base of the foothills, there are a number of significant sites from which a sizeable amount of data has been collected. Three sites within the Snoqualmie drainage have been excavated over a period that spans about two decades. Work has been at a standstill for the last couple of years, but it is not unlikely that excavations will start up again at sometime in the future.

The Biderbost Site (45SN100)

In 1961, the Washington Archaeological Society began work at the Biderbost site (45SN100). The project was picked up in later years by Seattle Central Community College, and at times the two groups worked at the site together under the direction and supervision of Dr. Astrida R. Blukis Onat. Biderbost is located on the Snoqualmie River near Duvall, and because of preservation conditions rare in the inland environments, recovery of wood artifacts, matting and basketry was possible. The occupation site was apparently situated on a promontory or abutment extending into the river, which has since been severely eroded by recent fluvial action. A portion of the midden is currently below the present water level; and the watersoaked condition accounts for the preservation of fibrous materials. The wide range of fiber and lithic classes are indicative of a densely inhabited permanent village occupied at least through the Middle and Late Periods. It was an important salmon fishing location; parts of a fishing weir were recovered during excavation. Organic material has provided the means by which the site can be radiocarbon dated, and a date of 2,000 +/- 80 B.P. coincides with the occupation age that is suggested by artifact styles (Nelson 1976). Projectile point styles exhibit strong similarities to those found on the Plateau, and a communication and trade system that involved the eastern Cascade people is hypothesized as the source of the similarities.

The Marymoor Site (45KI9)

Dr. Robert Greengo of the University of Washington conducted excavations at the Marymoor Site on Lake Sammamish intermittently between 1964 and 1970. Marymoor is a stratigraphically complex site and exhibits some disturbance or redeposition at the possible juncture of two occupational layers. Two areas of use that are temporally discrete have been identified. The area identified as the earlier of the two (Location A) received the majority of attention; it was excavated by U. of W. students in 1964, 1966, 1967 and 1968. Over 1,000 artifacts were recovered. Based on the high number of points and blades, and the projectile point styles present, this locality is interpreted as a seasonally re-occupied hunting camp, used during the middle period of prehistory (5,000 to 1,000 B.P.) (Greengo and Houston 1970).

More economically diverse use is represented at Location B, manifest by fish remains, woodworking implements, and a possible earth oven. Some artifacts of the early types are present, that is, large lanceolate projectile points of basalt and large basalt cobble and flake tools. However, there are also artifacts that indicate a later occupation (e.g. ground stone implements). In addition, projectile point styles suggest a period much later than any represented at Location A (Greengo and Houston 1970). There appears to have been a general trend toward the more frequent

use of cryptocrystalline silica material for tool manufacture, that coincides with the same trend at Chester Morse Lake (see above). However, the Marymoor deposits are not well defined stratigraphically, as the site has undergone severe erosional and depositional disturbances.

Tokul Creek (45KI19)

Excavations at Tokul Creek (45KI19) were conducted by Seattle Community College in 1967 (Onat and Bennett 1968), and Blukis Onat returned to the site and vicinity in subsequent years for continued observation and artifact recovery from the eroding river bank. This location, where Tokul Creek enters the Snoqualmie River, was utilized as a salmon fishing camp prehistorically, and continued to be used through ethnohistoric times (Turner personal communication 1983). It is also suggested, based on locational and ethnographic data, that the site was used as a stopover for parties travelling across the mountains.

Artifacts include finely made corner-notched projectile points and other formed chipped stone tools, as well as ground stone and tool manufacturing debris. These are made of stone from both eastern and western Washington sources. Tokul Creek is assigned to the Late Period (occupied during the last 1,000 years), and probably represents cultural patterns that were present at the time of Euro-American contact. The general area was apparently occupied or re-occupied on a seasonal basis, for a much longer period. This is tentatively suggested by an artifact assemblage from upstream that appears to contain earlier material (Middle Period?), and by an assemblage from across the river that appears to extend to the Early Period. Thus, as at the Chester Morse site, an entire sequence may be represented at one environmental locality.

Onat and Bennett (1968:24) compare Tokul Creek to sites from the environmentally transitional zone between the foothills and the Puget Trough. The similarities are attributed to the influence resulting from a communication network between the Snoqualmie Valley and the Plateau.

Forest Projects

A timber sale reconnaissance completed by one of the North Bend Cultural Resource Technicians led to the discovery of a site along the ridge above Chester Morse Lake, near the headwaters of Rack Creek. The site consists of a sparse lithic scatter, exposed in a disturbed area on the crest of the ridge. One Cascade-style projectile point was found and collected (Figure 2.11). The Forest archaeologist visited the site with a representative from the City of Seattle Cedar River watershed, and it was determined that the site is not on National Forest lands. The site has not been inventoried by the District, but the locational information was retained for future reference in the Overview Site List (NB 146).

The Mt. Lindsay site (CR06-05-05-14) was discovered during a proposed spur road construction (Rd. 213.3) timber sale reconnaissance by a District Cultural Resource Technician. The site is located on the ridge (4,160 feet) between the Cedar and Green River drainages. The site is not on National Forest land,

however, it was inventoried during the course of the reconnaissance projects. Artifacts collected from the surface of the site include a jasper projectile point (Figure 2.11), a nephrite (jadeite) ground stone adze, a utilized flake, and several waste flakes. Jasper occurs locally; some of the other artifacts may be the result of imported resources. Since the closest water source is three quarters of a mile away, it would appear that people used this camp temporarily. This scanty information tentatively suggests that this was probably a temporary camp, used for hunting and as a stop while travelling between eastern and western Washington; however, much more substantive information is needed to validate this interpretation.

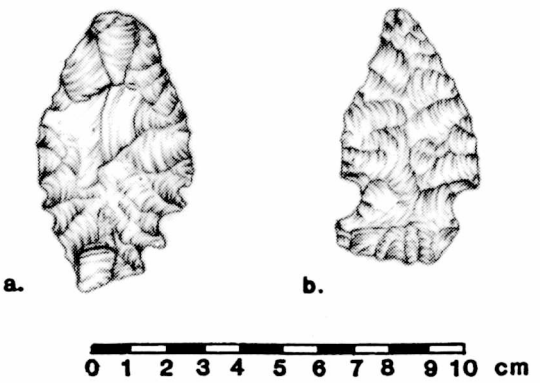


Figure 2.11 Projectile points from the vicinity of the North Bend Ranger District: a. Rack Creek; b. Lindsay Mountain (CR06-05-05-14).

A Cultural Resource Overview of the Green River Watershed

Another site should be mentioned before we proceed to a discussion of sites on the Forest. A high elevation prehistoric site is recorded in the vicinity of Lizard Lake, near Stampede Pass (45K138). The land ownership in this drainage is mixed, and this particular location is not on National Forest lands. The site was recorded during a survey by the Washington Archaeological Research Center conducted for the Forest Service (Hedlund et. al. 1978). Surface examination yielded a cryptocrystalline silica core-scraper and hearth features in the vicinity of the lake. Green River Community College has one artifact from this site. The site is located near a pass through the Cascades, indicating travel, and the local habitat would have been exploitable during the summer months by people practicing a hunting and gathering subsistence economy. Beyond these limited observations, little else is known about this site.

Within District

Two high elevation prehistoric sites have been inventoried within the boundaries of the North Bend District, and several potential locations are known through the ethnographic record. Neither of the inventoried sites have been tested, so only tentative interpretations can be made. Based on the high elevation and small site size, they appear to be short-term use locations, probably temporary camps.

The location of the Snow Lake lithic scatter (CR06-05-05-15) is also a factor in determining the function of that site. Located at 4,016 feet, it is seldom free of snow until the middle of the summer season, and snow reaches that elevation again in the early fall. The site is not far from the present Pacific Crest Trail, and it is also associated with a currently used main trail route between the Middle and North Forks of the Snoqualmie River. The landform orientation is north to south, rather than the more common association with east to west cross-Cascade travel. A total of five projectile points have been found at the site; four of crytocystalline silicate and one of basalt. These include one complete corner-notched arrow point, and two bases of larger stemmed points (possibly dart points). In addition, a point midsection and a preform were also noted. Other tools include retouched flakes, and a possible spokeshave. The comparatively large number of projectile points at the site indicates hunting, and even today, mountain goats are a resource available around the lake. Cryptocrystalline materials are found locally in the area, and the tool making debitage evident on the surface represents materials that may be of local origin. A tentative comparison of the projectile point styles suggests use of this site during the late prehistoric period, the Cayuse (see Table 2.1).

The Snoqualmie Lake Site (CR06-05-05-19) is also within the Alpine Lakes Wilderness. This site was found by a Forest Service employee who made a small collection from the site upon discovery in 1981. The collection consists of small waste flakes of a variety of cryptocrystalline silica materials, and one modified and utilized agate flake. No functionally or temporally diagnostic pieces were identified. To date, the site has not been revisited for the purpose of further recording its function, extent or condition.

North Bend Prehistoric Site Inventory

Five prehistoric sites are included in the North Bend Prehistoric Site Inventory. Beyond locational data, very little is known about these sites. Of the five, only three are on National Forest lands (CR06-05-05-15; CR06-05-05-17; CR06-05-05-19). The others are on private land adjacent to the National Forest.

Two small surface lithic scatters are reported along the Pacific Crest trail, however, full inventory data has not been collected. The White River Ranger District administers this section of the Pacific Crest Trail. One of these sites is on private land. In addition, two sites have been found within the Alpine Lakes Wilderness, and one site is reported from Lindsay Mountain (Table 2.6).

Table 2.6 North Bend Ranger District prehistoric site inventory.

Forest Inventory Number	Name	Description	Recommendations
CR06-05-05-14 (pvt land)	Lindsay Mtn.	The site is located along a wide, flat ridge at 4,160 feet. Lithic materials including flakes, a projectile point and a ground stone adze blade were found and collected.	Further investigation and testing to determine extent and significance.
CR06-05-05-15	Snow Lake Lithic Site	The site consists of a sparse lithic scatter visible on the ground surface. Site is located on the lake shore.	Further investigation and testing to determine extent and significance.
CR06-05-05-17	Pacific Crest Lithic Site I	A scatter of ccs material on the ground surface. Site is located along the Pacific Crest.	Further investigation and testing to complete inventory and determine extent and significance.
CR06-05-05-18 (pvt)	Pacific Crest Lithic Site II	A scatter of ccs material on the ground surface. Site is located along the Pacific Crest.	Further investigation and testing necessary to complete inventory and determine extent and significance.
CR06-05-05-19	Snoqualmie Lake Lithic Site	The site consists of a sparse lithic scatter visible along the lake shore when the lake level is low.	Further investigation and testing to determine extent and significance.

View from the White River Ranger District

Adjacent and Off-Forest Projects

There has been some effort over the past few years to expand our knowledge of cultural resources in the upland environments in the vicinity of the White River District, but most reports focus on the surrounding lowlands. Temporary camps may be expected to occur along the Divide Ridge in particular, as this continuous ridge provided an excellent path for foot and horse traffic above the densely vegetated water courses, and would have been a preferred travel route. Sites are clustered along travel routes; and the vicinity of Naches Pass and tributary trails was a major contact area between eastern and western Washington Indians (Figure 2.12).

The first bonafide investigations in the south central Cascades began with test excavations conducted at Frying Pan Rockshelter, a site situated at 5,300 feet elevation in Mount Rainier National Park (Rice, D. 1965). At that time, it was the highest known archaeological site in the state of Washington. The recovery of deer bone, scrapers, knives and projectile points from the rockshelter deposits led Rice to speculate that the site was probably a hunting camp, used during the summer months. He suggested that it dated to between 1,000 B.P. and historic times.

Some interesting discoveries from lower elevation sites adjacent to the Forest are worth noting for comparisons of prehistoric land use patterns. While the Forest encompasses much of the high country, it is important to consider the full scope of resource use of a foraging culture oriented toward the seasonal exploitation of resources. Nineteen sites have been located, investigated and/or tested on the Enumclaw Plateau at the base of the Cascade foothills, within the White River drainage. Generally, these sites "...reflect an inland adaptation and are located back from major streams on higher ground" (Hedlund 1983).

Connel's Prairie

Investigations at Connel's Prairie were conducted by Gerald Hedlund, of Green River Community College over a period of four years (1968-71) and reported in 1973. Connel's Prairie is located between the present towns of Buckley and Sumner, along the White River. It is at the base of Mt. Rainier, however, the elevation of the area does not exceed 700 ft. above sea level. It is one of three open prairies found on the Enumclaw Plateau; the others are Porter's Prairie (across the White River east of Connel's Prairie) and Muckleshoot Prairie (north of the White River and Connel's Prairie). At two sites, Imhof (45PI44) and Schodde (45PI45), Hedlund identified three prehistoric localities in the prairie setting, covering an area of more than twenty acres.

The Imhof Site was excavated by Green River Community College archaeology classes in the summers of 1968-71, during which time the equivalent of approximately 60 units (5x5 ft.) were excavated. The sample from the Schodde site was limited to surface collection of the plowed field in 1968. A total of 1,031 prehistoric artifacts were recovered from the

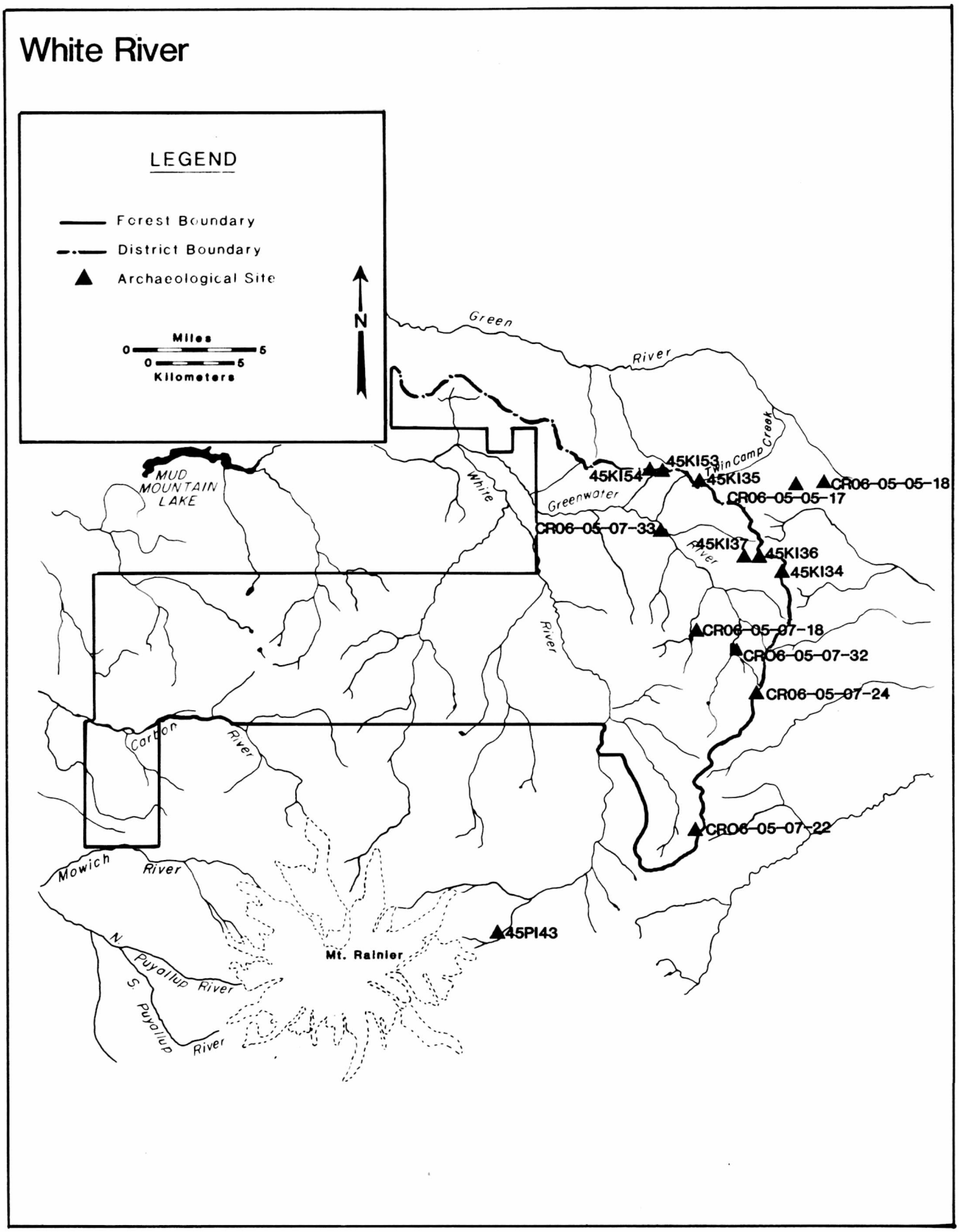


Figure 2.12 Prehistoric sites within and adjacent to the White River Ranger District.

sites: 768 from excavations at the Imhof farm, and an additional 263 from surface recovery at the Schodde farm. These included a wide variety of artifacts, predominately of cryptocrystalline silica and petrified wood, mostly from the plow zone. Flake side-scrapers and knives were the most commmon kinds of tools found. Hedlund identified several other kinds of scrapers and blades as well as utilized flakes, burins, gravers, cores, core tools and projectile points. Of the points, Hedlund states:

> Most of the points, 47.5%, were classified as triangular in shape of a blade, while leaf shape was the second in number with 34.5% being so classed. The general picture of the points would indicate a similarity to those of the Cayuse phase of Nelson (1969:300)... Better than 40% of the points from the Connel's Prairie sites were Cayuse-type triangular points with rectangular stems, and most of them were barbed (1973:49).

Features included an earth oven, five fire hearths, and post holes, providing evidence for the existence of a shelter. Charcoal samples submitted for C^{14} analysis returned dates of 440 +/- 70 B.P. and 690 +/- 85 B.P. (Hedlund 1973:80). Hedlund concludes that this site, occupied during the late prehistoric period, was the location of hunting and gathering activities focusing on the exploitation of the large, open prairie environment. He proposes that open prairies, like Connel's, were not natural but rather were kept open by burning for the purposes of maintaining that environment (Hedlund 1973:5). The existence of point styles that show distinct similarities with Cayuse Phase materials from the Plateau and the presence of exotic cryptocrystalline materials and petrified wood, according to Hedlund, illustrate that the Plateau contacts that were recorded ethnographically were also present during prehistoric times.

Jokumsen Site (45KI5)

A short distance away and across the White River, Hedlund and Green River Community College students worked at a very different site (45KI5). Excavation permeated deposits of the Osceola Mudflow, and evidence of a prehistoric occupation was found both above and below the deposits. This mudflow, a result of volcanic activity inside Mt. Rainier, swept down the valley of the White River and spread over the area now called the Enumclaw Plateau. The mudflow can be dated at 4,980 +/- 60 (Hedlund 1976). Radiocarbon samples associated with artifacts from below the mudflow indicate that the site was originally inhabited from approximately 6,000 B.P. to 4,800 B.P., and re-occupied after the mudflow.

Hedlund hypothesizes that the high number of burins and gravers from the site "...were used to make other tools from material such as bone or wood... one must conclude that bone and/or wood was important in the prehistoric culture of this area. Acidity and alternating wet and dry soil conditions did not favor preservation of wood or bone in the site" (Hedlund 1976:87). Other artifacts from the site include perforators (awls and drills), scrapers, knives, points and utilized flakes.

Artifacts from above and below the mudflow were dissimilar in form and material. Triangular shaped points were generally found at lower levels than lanceolate shapes. This vertical distribution appears to be inconsistent with generally held concepts regarding the "Olcott" or "Cascade" phase leaf-shaped points, which are thought to represent the early period of prehistory. More in keeping with the patterns evident elsewhere, most of the points from above the mudflow were made from cryptocrystalline silica, while those from the pre-mudflow deposit were primarily coarser-grained volcanic materials (Hedlund 1973). Additionally, above the mudflow, there is evidence of fire hearths, earth ovens, and "...house pits and other structural remains have been identified" (Hedlund 1983:114), while pre-mudflow features found thus far have been limited to lenses and possible rock alignments.

Forest Projects

A Cultural Resource Overview of the Green River Watershed

While completing an Overview of the Green River Watershed under contract with the Forest, Gerald Hedlund recorded five prehistoric sites, four in the vicinty of the White River District (45KI34, 45KI35, 45KI36, 45KI37) (Figure 2.12), and one to the north, at Lizard Lake (45KI38) (see North Bend District, above). Although a couple of these were apparently found prior to Hedlund's involvement in this particular project, they were reported with the findings from his Overview research (Hedlund et al. 1978). Three sites are located near Naches Pass; Government Meadows (45KI36), Meadow Creek (45KI37), and the Fitch Site (45KI34). Of these, only the first (45KI36) is on National Forest land. The sites are probably related to hunting activities in the meadow areas and travel through the Pass. The basis of this interpretation is the presence of utilized flakes and scrapers of cryptocrystalline coupled with the geographic location. Meadow Creek has a preponderance of chipping detritus and cores as well (Hedlund et. al. 1978:21). Additional work beyond initial examination has not been conducted at any of the locations, therefore, any further interpretation is premature.

The site at Government Meadows is the only one of the three in that vicinity on Forest lands. This site indicates a period of use from prehistoric through historic times; historic artifacts were found on the surface of the site. The site is located near Naches Pass, which played an important role in the history of the settlement of western Washington and is on the Washington State Register of Historic Places.

Another site on the Divide Ridge has an extensive artifact inventory from surface collections conducted by Green River Community College under Hedlund's direction. Twin Camps (45KI35) is on Forest lands, however, the collection is curated at the College. The surface collection recovered scrapers, knives, gravers, burins, cores, and two cryptocrystalline silica projectile point fragments. The variety of artifact types represents more diverse activities than those apparent at the Huckleberry Mountain sites, and includes wood and/or bone working (gravers and burins), hunting and butchering (knives, scrapers, and points), and to some degree, tool manufacturing (cores and waste flakes).

The site has sustained major disturbance by artifact collectors, roads, camping areas and other recreational use.

Huckleberry Mountain

Archaeological testing at two sites on Huckleberry Mountain (45KI53 and 45KI54) was completed in 1979, prior to a road construction project (Hartmann 1979). These two lithic sites are only about a mile apart, however, only the former is on National Forest property. Forest involvement in the road construction caused both to be investigated. They appeared as sparse lithic scatters on the surface, however, some interesting characteristics were noted.

A total of eight test units (1x1 m.) were placed at 45KI54, and undisturbed deposits were found to a depth of 20 to 30 centimeters below the surface. This material has not been analysed other than to note a variety of formed tools, utilized flakes, and detritus in the collection. No projectile points were recovered (Hartmann 1980). The site may contain much more information which will contribute to our knowledge of regional prehistory, and it has been determined eligible for the National Register of Historic Places (U. S. Department of the Interior 1980).

After completing a collection of all the surface artifacts from 45KI53, two one-by-one meter test excavation units were dug. No additional artifacts were found. Hartmann concluded that the site had been largely destroyed by previous land disturbing activities to the extent that the retrieval of additional information through subsurface investigations was unlikely (Hartmann 1979).

Both of the above sites appear to represent small transient camps that may be associated with fall berry picking activities and rest stops during travel along Huckleberry Ridge. Both contain a predominance of thinning flakes, suggesting to Hartmann (1979) that tool maintenance, rather than tool manufacture, was the major lithic activity. A number of obsidian flakes were found at 45KI53, and based on the scant amount of material recovered so far, it is unusual for this material to occur in the western Cascades. Hartmann concluded that the material was transported either for use by the travelling groups or as an item of trade; probably both.

After the findings of the archaeological testing were submitted, the road construction project was completed with the implementation of special construction procedures that adequately protected site 45KI54 against destruction or alteration.

Within District

Timber sale reconnaissances and incidental finds have led to the inventory of additional sites within the White River District. The Maggie Creek Site (CR05-07-24) and the Blue Bell Site (CR05-07-22) are both located within an eighth of a mile of the Pacific Crest. The Blue Bell Lithic Scatter is located at an elevation of 6240 ft., the highest elevation site identified on the Forest. Chipped stone artifacts of a variety of types of cryptocrystalline silicate were observed, although no formal tools have yet been identified. Subsurface material is likely present at the Blue Bell site as well as Maggie

Creek. Because so little is known about high elevation sites, both sites have potential to yield information important to our knowledge of prehistory of the area.

In addition, two sites have been reported from lake shore environments in the Norse Peak Wilderness. One has been formally inventoried; it consists of a flake scatter visible in the beach material of the lake, near the mouth of a tributary stream (CR06-05-07-18). Collected material includes a projectile point of red and white banded chert, that appears similar to those identified east of the mountains as part of the Cayuse Phase (Figure 2.13). A projectile point has also been reported from the vicinity of another lake close by, but the site has not been visited by an archaeologist for further recording. The point, collected by a private individual, is not available for comparison.

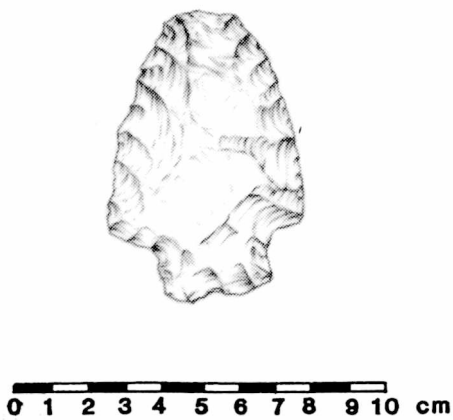


Figure 2.13 Projectile point from the the vicinity of Lost Lake (CR06-05-17-18).

White River Prehistoric Site Survey Inventory

There are nine prehistoric sites on the White River District Site Inventory (Table 2.7). All but one are on National Forest lands. The exception is the Huckleberry Mountain Site (45KI54 - mentioned above) discovered during a road construction project. In addition, the White River District is responsible for administering a segment of the Pacific Crest Trail, along which two prehistoric sites have been located (see North Bend District Site Inventory).

Table 2.7 WHITE RIVER PREHISTORIC SITE INVENTORY

Forest Inventory No.	Name	Description	Recommendations
CR06-05-07-9	Huckleberry Mountain (45K153)	A surface lithic scatter along the divide ridge. Subsurface material was not located during testing program. (Hartmann 1979).	Site has been determined ineligible for the NRHP. Retain permanent records for future reference.
CR06-05-07-10 (pvt)	Huckleberry Mountain (45K154)	A lithic scatter located along the divide ridge. Surface and subsurface materials were located during testing program (Hartmann 1979). A variety of formed tools, utilized flakes, and detritus were found and collected. The site was found to be eligible for the NPHP.	Comply with National Historic Preservation Act for sites that are eligible for the National Register of Historic Places.
CR06-05-07-15	Twin Camp (45K135)	Large surface lithic scatter, no subsurface investigation has been completed - the size of this site indicates that there may be potential for subsurface material. Site is located along a ridge, approximately 4,400 feet elevation. Surface artifacts reside at Greenriver Community College.	Further investigation and testing of site to determine integrity extent and significance.
CR06-05-07-16	Government Meadows Camp (45K136)	The site is located on the periphery of an open meadow near the crest of the Cascades. Cryptocrystalline silica flakes were observed on the surface along with some historic artifacts.	Further investigation and testing to determine extent and significance.
CR06-05-07-18	Lost Lake Lithic Site	A sparse lithic scatter located along the lake shore. Artifacts include a projectile point.	Further investigation and testing to determine extent and significance.

Forest Inventory No.	Name	Description	Recommendations
CR06-05-07-24	Maggie Creek Lithic	A sparse lithic scatter visible in on the ground surface. Site is located on a ridge at approximately 4,400 feet elevation.	Further investigation and testing to determine extent and significance.
CR06-05-07-22	Blue Bell Lithic Scatter	A scatter of chipped stone artifacts exposed in disturbed area. Site is located in saddle along a linear ridge, at 6,240 feet elevation.	Further investigation and testing to determine extent and significance.
CR06-05-07-33	Himes Camp	A surface scatter was seen on ground surface. Formal inventory has not been completed.	Further investigation to complete inventory, determine extent, and significance.
CR06-05-07-32	Echo Lake	A projectile point reported from the vicinity of Echo Lake. Formal inventory has not been completed.	Further investigation to complete inventory, determine extent, and significance.

Summary

The archaeology of western Washington, and the Cascade province specifically, is in the frontier stages of development. Very few sites have been located in the forested high country of the mountains, and only a fraction of those have been investigated to any degree. Thus, the archaeological material is often compared to what has been found to the north, east and south, where chronological schemes have been developed. By applying the developmental sequence described, we can surmise that prehistoric utilization of the Cascade Mountains probably represents a long term adaptation to changing conditions through experimentation, variations in social organization and a continually developing technology.

Early settlement was by small groups occupying open campsites dispersed along river terraces and lake edges. These groups probably ventured into the high country during the warmer months to take advantage of plant and animal resources. Their forays may have taken them to specific localities close to the mountain passes, or even across the mountains, to meet and trade with people from the eastside. However, in earlier periods, climatic extremes may have limited both the extent and routes of travel.

In later times, new patterns emerged, superimposed upon the old. The generalized hunting and gathering way of life gradually developed into a more specialized system for resource procurement and utilization, which was able to support more people for longer periods of time. Communities congregated in semipermanent winter villages along the major drainages and lakes. Small groups radiated out from this base in the spring, summer and fall to begin a systematic cycle of fishing, hunting, plant gathering, berry picking and quarrying activities. They stopped and stayed at a series of small camps associated with one or more of these resources, to gather and process for winter stores. An active trade system developed that encompassed the coastal inhabitants, upriver people, and people from eastern Washington. These people travelled to gather for social activities as well as economic ones. This development culminated during the Ethnohistoric Period, and represents the lifestyle that was practiced by Indian people of inland western Washington at the time of contact with non-Indian cultures.

One of the objectives in searching for archaeological remnants of these uses is to construct a model of subsistence and settlement in the Cascades through time. In doing so, however, we must recognize that the Cascade landscape is highly variable and that use and adaptation were not uniform: landform features and differential resource distributions strongly condition the type and duration of the human response.

The ultimate goal of predicting and discovering sites will be the refinement and resolution of a series of research questions. Previous research has focused primarily on the coastal environments, and relatively few investigations have been conducted that begin to answer questions about the prehistoric use of the Cascades. Most of our speculations about prehistoric Cascade culture(s) are derived from an astonishingly incomplete record. The story of human development through time and across the wide and diverse

geographic spaces of the Cascades, the methods devised to take advantage of the varying resource availability, the social patterns evolved to meet the demands of an upland oriented lifestyle, and the nature of the influences filtering through via trade, travel, marriage, and personal preference, are questions that will require consideration in future research. There is no doubt that the archaeology of the Cascade Mountains can provide essential insight into our understanding of the development of human patterns, past and future, in the Northwest.

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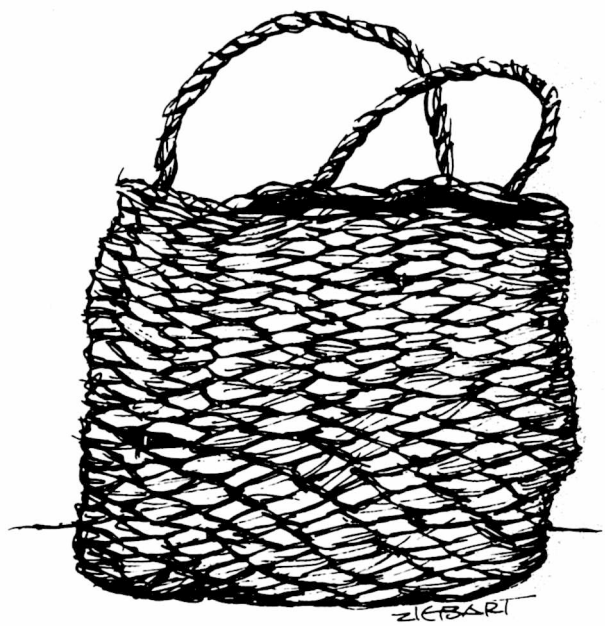
III

ETHNOGRAPHY



Ethnographic Setting

Introduction

The prehistoric period in the interior of western Washington came to a close during the middle 1800s, when the territorial governor, Isaac Stevens, began efforts to treat with the Indians. Some of the first written records are the results of lawyer/ethnographer George Gibbs (1855, 1877), whose task it was to meet with the Indians, record their locations and populations, and assess the Indians' attitudes towards the treaty. Later expeditions into the Cascades, particularly those for planning railroad routes across the mountains, provided additional documentation of the Indians' life in the upriver territory. These fragments, combined with later anthropological studies and the ongoing recollections of the Native American elders, have permitted the reconstruction of ethnographic patterns - the way of life of the inland western Washington groups as it was at historic contact.

The people who lived in the upriver territory of the present Mt. Baker-Snoqualmie National Forest in the middle 1800s, belonged to the Salish language group. They spoke two distinct, but mutually intelligible, Salishan languages, Nooksack (Lhechelesem) and Puget Salish (Lushootseed). In Nooksack country, the Nooksack language has been largely or wholly replaced by another Salishan language, Halkomekm, or by Puget (Suttles personal communication 1980). In addition, several dialects of these languages were spoken. The tribes most closely associated with the upriver and forested territory of the Mt. Baker-Snoqualmie National Forest are, from north to south, the Nooksack, Upper Skagit, Sauk-Suiattle, Stillaguamish, Skykomish, Snoqualmie, Muckleshoot and Puyallup (Figure 3.1). They are generally distinguished by drainage system. Among these groups, there were close similarities in political organization, lifestyle and religious beliefs. Kinship ties, shared subsistence areas, dynamic trade networks and topographic continuity linked groups and provided the basis for sustained relationships.

Archaeologists have long depended upon available ethnographic data for some basic ideas about prehistoric settlement and subsistence. It is assumed that the economic patterns observed and documented by early ethnographers were part of a continuum, and that in the prehistoric past there should be evidence of these trends. Parallels are drawn between resources used and microenvironments visited during the later period and those used in earlier times.

These ethnographic analogues are not without weaknesses. By the time much of this information was being collected, over the past sixty years, more than a century had lapsed since the first contacts with non-Indians began to alter the traditional lifeways. Archaeologists have identified some of the problems by using ethnographic information to reconstruct prehistory. For the study area these may include:

A. The introduction of horses from east of the mountains to some western Cascade groups, around A.D. 1750. Without a doubt this had a great impact on the existing way of life, although the effects have not been documented. Those who adopted the horse would have been directly influenced, yet even the outlying groups may have experienced some

changes. A good deal of the archaeological record relates to a pre-horse period, while all the available ethnographic material documents a post-horse culture.

B. Diseases introduced by the whites decimated the non-immune native population. Subsistence needs and settlement patterns were very different after major changes in population size and distribution.

C. The introduction of new materials in the form of both tools and foods changed the structure and content of daily life.

D. An ethnographic overview for the area includes information obtained from the texts and notes of early explorers, settlers and military personnel as well as people who studied the Indian cultures for the purpose of recording ethnography. Their interests, education and biases are interwoven with the information presented.

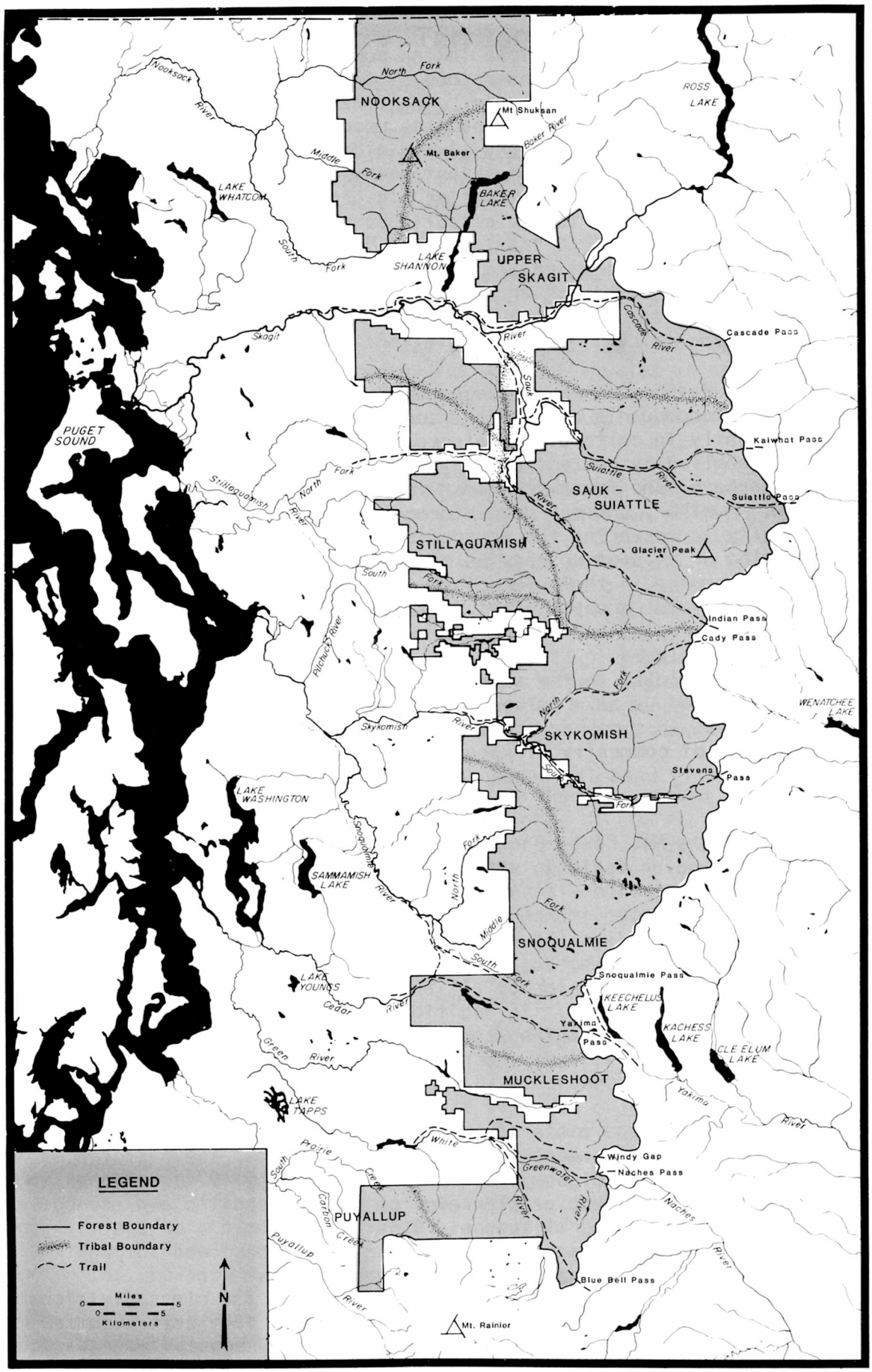


Figure 3.1 Tribal distribution in the vicinity of the Mt. Baker-Snoqualmie National Forest.

Sociopolitical Organization

The formal organization of the American Indian communities and groups living in western Washington was largely misunderstood at the time of historic contact, and misrepresented in the early accounts. The first non-Indians who provided us with written accounts of the native peoples used the term "tribe" to distinguish different groups of Indians living along the coast and inland water systems. This concept was also a convenient means of consolidating the many different groups at the time of the Treaties, in order to systematically relocate the entire population to the established reservations. Application of such terms as "tribes," "chiefs," "nations" and "confederations" was the direct result of Euro-American exploration and settlement of the Pacific Northwest. It is more accurate to use "bands" and "groups" when referring to the native inhabitants, reflecting the political autonomy practiced at the distinct living sites. As anthropologist Leslie Spier explained:

> In western Washington the villages appear to have been largely autonomous in a political sense but differentiated only slightly in culture. Local groups of this kind have been marshalled by dialect both by the natives and by ethnographers, who forthwith refer to the dialect groups as tribes. Further, present day informants have great difficulty in answering the apparently simple question, to what tribe or triblet do they belong. This is because the majority combine in their immediate ancestry affiliation with a number of local groups. That this is not at all a recent phenomenon is evidenced by the early accounts, which record the pride displayed in studied intermarriage with other peoples, especially in the aristocratic classes. The upshot is that some of us have solved the dilemma by describing these peoples in somewhat arbitrary groups: groups having some degree of community of speech, contiguous territory, and a name commonly used in the sense of a tribal designation (1936:5).

In the foothills of the Mt. Baker-Snoqualmie National Forest, the physiographic divisions defined by seven drainage systems produced the geographic subdivisions of the populations. The occupants of one drainage system were drawn together by a common environment, economic system, culture, and often, dialect. These broad groupings and all the associated villages were often referred to under a common name, such as Snoqualmie or Skagit. The individual villages of a drainage may have formed alliances during a time of crisis, such as war, or for social activities. In addition, intermarriage between the villages was encouraged to strengthen certain economic ties. However, these ties were not politically oriented. Each village retained a separate identity and remained autonomous.

The native peoples recognized a hierarchy of social classes in which there were members of the noble class, commoners and slaves. At times, the differences between the upper and middle classes were indistinct (Riley 1974). Riches took the form of tangible goods, such as blankets, canoes or food; to own a large number of slaves also exhibited affluence. Rights of ownership or use regarding certain resource areas were often inherited or bestowed through marriage, and these rights transferred into a measure of wealth. Anthropologist Carroll Riley noted that although the rank and class divisions existed among both Puget Sound coastal and inland tribes, they were less important in the case of the latter (1974:45).

Territory

The concept of territory was another aspect of the native cultures that was largely misunderstood by non-Indians. The native peoples recognized certain territorial rights insofar as they were defined by the home village site, and the areas normally traversed during their seasonal wanderings (Spier 1936:10). Hence, land use, not ownership, was the underlying theme of territoriality. The tribes of Washington did not think in terms of boundaries.

Travel was usually controlled by convenience, and also by the state the relationship, whether friendly or not, between the people of the areas in question (M. Smith 1940:24). Quarrels over land, per se, were rare, although an unfriendly trespass could result in conflict (Haeberlin and Gunther 1930:12). Subsistence territory was fairly specific along the major rivers, and particularly with regard to the lucrative fisheries which were also, not surprisingly, the locations of the larger and more important villages (Lane 1973a:16). Barbara Lane, who conducted anthropological research regarding Indian fishing rights, commented:

> ...it is correct to say that the freshwater fisheries were controlled by the locally resident population. During the winter season, the local residents were the exclusive users. At other seasons, use rights would be extended... Visitors from beyond the immediate locality would arrive to take advantage of particular runs not available in their streams or not running at that particular time in their locality. Certain of these visitors would have rights because they were related to local residents. Others might request permission to fish and such permission was normally extended provided amicable relations existed between the local people and the visitors (1973a:16-17).

Boundaries became increasingly vague the further they moved from the village sites. The upriver groups had a definite sense of how far their hunting territory extended, however, that did not preclude use by another group. Again, it may have been appropriate to seek permission, but such a request was rarely denied. Non-village areas were generally open to all who cared to use them (Indian Claims Commission 1974:291; M. Smith 1940:25). Co-utilization of the village areas was not uncommon, so long as it was on a friendly basis and the user had some connection through kinship (Indian Claims Commission 1974:116).

A complex system of kinship and culturally defined reciprocal rights complicated the concept of territory. Marriage partners were deliberately selected outside of the home village. As a consequence, multi-directional ties were established between the members of villages or bands, ultimately resulting in the practice of cross-use of subsistence areas and shared territory. Thus, there was frequent movement along the drainages, between river valleys, and even across the Cascades. Hunting and gathering areas especially were open to use by several different villages and in fact, provided the location and opportunity for socializing between groups during the seasonal food gathering activities. Fishing stations, as mentioned above, were more tightly controlled, being situated closer to the village sites.

In summary, territory could be defined only in the loosest sense of the word. Topographic features might provide a basis of division between villages, and

mountain ridges the dividing line between tribes, but in reality, such boundaries were overlapping and continually redefined on the basis of personal relationships. Private ownership was an alien concept, in fact, its later imposition became one of the major forces disrupting the native lifestyle.

Villages

The nucleus of the settlement pattern was the winter village, a permanent collection of homes that were reoccupied during the colder months each year. Villages consisted of one or more houses occupied by extended family groups. The village represented a social, economic and political kinship group, although village association could be changed by marriage or choice.

Communally occupied houses were constructed similarly throughout Puget Sound, although upriver houses tended to be somewhat smaller (Collins 1974a:118). They were of cedar planks, and measured approximately 40 or 50 feet wide by 80 or 100 feet long, or more. They were partitioned or divided by family units. Sleeping platforms were built along the walls with storage shelves above. Mats were used on the floors and hung as partitions and at the door. Fire hearths were situated around the sides of the houses, and were shared by two or more families. Villages would also contain sweat lodges and possibly some other less permanent structures. These would have been considerably smaller than plank houses, and made of a wood frame lashed together, with mats or brush placed against it forming the walls of the structure. Each would have had a fire, but in the case of sweat lodges and some temporary dwellings, the fire would probably have been outside rather than inside.

Temporary campsites could be associated with any of the resource procurement activities such as hunting, gathering, fishing or quarrying, as well as with travel routes. Although the need for shelter would be determined by the purpose and length of stay, mat houses were constructed at many of the temporary camps. These were used from one to three weeks or a month. They were easily constructed, could be dismantled and packed for travel, and quickly erected at another location. The mats were woven of cattail or similar reeds or grasses, which were fairly light and easy to carry.

Two styles of shelters were constructed in the Cascade culture area; both square and conical shapes are reported. Haeberlin and Gunther describe one square style Snoqualmie summer house:

> Four poles forked at the upper end were set in the ground to make the four corners of the house. On these rested the horizontal poles which supported a gabled roof. The framework of the house was tied together with cedar twigs (stēdgwad). The roof and three of the sides were covered with mats (K!wā'daq). The front was completely open, but when it rained a mat was hung down from the roof and served as a door (1930:18).

In another account, conical-shaped houses at Lake Sammamish are attributed to the Snoqualmies (Turner 1976). They may have used both; the Snoqualmies are documented as having very close ties with the Yakima, and Teit (1928) notes that this conical shape was the most common among them. These were constructed with a frame of poles tied together at the top, and covered with mats that ran horizontally around the structure (Haeberlin and Gunther 1930:18) (Figure 3.2).

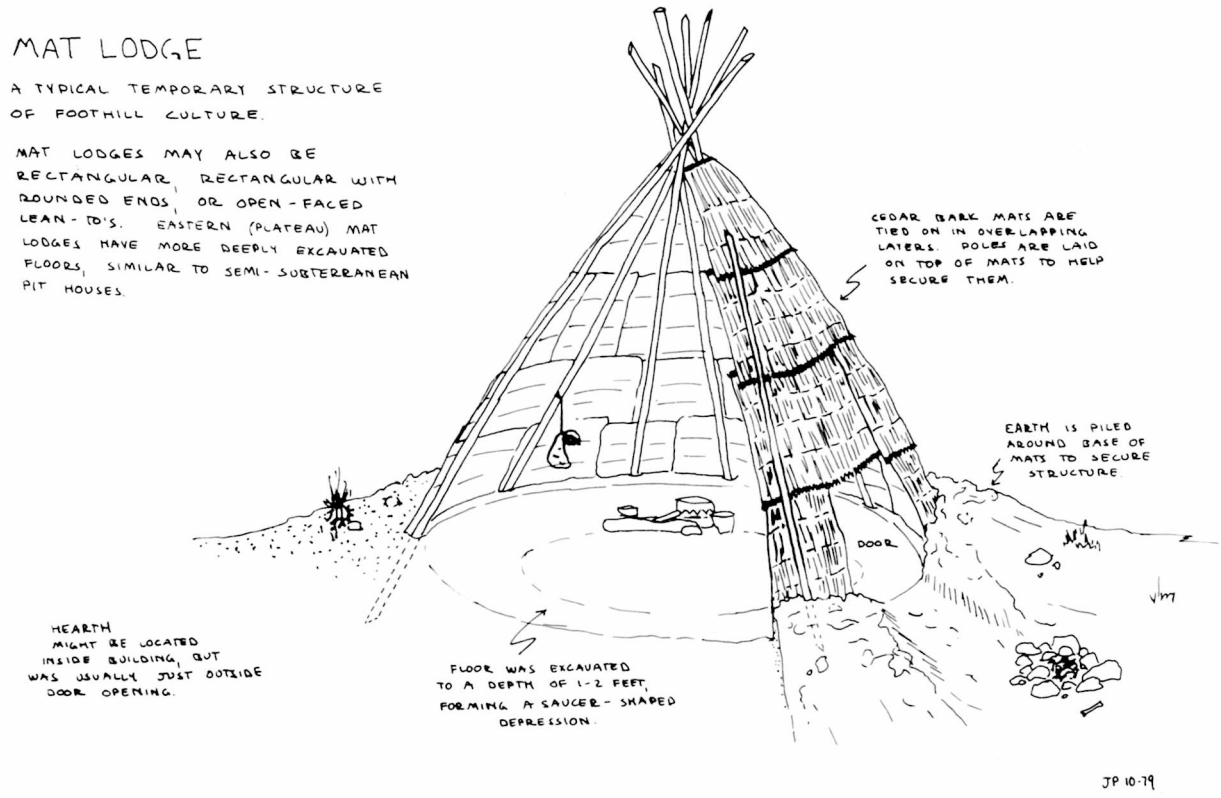


Figure 3.2. Mat lodge; a typical temporary house from the Cascade culture area.

The square houses were open on one side to face a fire placed centrally in a cluster of similar houses. Conical houses may have had a fire on the inside, this shape being comparatively more conducive to ventilation than the gable-roofed square house. Archaeological evidence of a temporary camp might, therefore, exhibit remains of one centrally placed hearth, or several in a cluster. This information in and of itself, is not indicative of population size or duration of use of a locality.

Other structures that may have been found at or near the transitory camps include sweat lodges. These were used for the necessary cleansing and purifying procedure preparatory to a hunt (A. Smith 1964:147; M. Smith 1940:121). One description is of a one-person hemispherically shaped structure, framed with maple limbs and covered with green boughs, and secured at the base with dirt. The fire was always outside; hot stones rolled into the lodge were sprinkled with water to create steam (M. Smith 1940:121).

Village composition continually fluctuated as families moved about to other villages and formed new alliances. The common practice of intermarriage cemented relationships between drainages, as did the cooperative use of resource gathering areas. On occasion, people from different drainages may have formed alliances for specific reasons, such as food gathering, defense or ceremonial activities. The purpose and distance from the home village may have controlled, in part, the duration of any connection thus formed. All relationships remained outside of any political control.

The village leaders or headmen were influential members of the community. Their authority "...tended to be task oriented with the appropriate specialist taking over leadership according to the occasion, e.g. hunting party, communal fish drive, raiding party, life crisis ceremony" (Lane 1973a:8). Often selected for their desirable personal qualities such as intelligence, wealth or skill, the role of a leader lay more in guidance, arbitration or crisis management than in governmental fiat. The position may last as long as the need for someone of that particular skill, and the extent of the leadership, for the most part, did not exceed the village boundaries.

The village group only remained together for part of the year, primarily the colder months. Small groups dispersed throughout the countryside in search of food and raw material for the remainder of the year. During these times, the village was reduced basically to a few year-round residents, such as the elderly and infirm. But the residents returned throughout the spring and summer with food to store for the winter, and visitors travelling between food gathering localities may have stopped to rest and socialize. Much of the native social organization was defined by these seasonal movements:

> In the winter when weather conditions generally made travelling conditions difficult, people remained in their winter villages and lived more or less on stored food... That season, however, was devoted primarily to intra- and intervillage ceremonies and manufacturing tasks. This was the time when people congregated into the largest assemblages, occupying large multifamily houses... Throughout the rest of the year individual families dispersed in various directions to join families from other winter villages in fishing, clam digging, harvesting camas, berry picking, and other economic pursuits. People moved about to resource areas where they had use rights based on kinship or marriage. Such rights were clear cut and important in native society, but were not readily observable to outside observers of Indian life (Lane 1973a:7-8).

Population

The earliest population censuses for the western Washington Indians vary widely. For the ease of the task, the villages or bands were often combined under one heading on the early population documents. It is difficult to distinguish from the records the tribes that are recognized today. Several estimates for the area were reported in the middle 1800s, and these range from numbers like 7,559 for the entire western district of the Washington territory in 1854 (Stevens 1855a), to 5,563 for the Puget Sound region in 1838-39 (Riley 1974:428), to 2,689 for the Puget Sound tribes in 1844 (Stevens 1855a). James Mooney, who in 1928 prepared a treatise on the native populations of America, estimated that the earliest documentation suggests numbers as high as 22,000 for western Washington in the year 1780, reduced to about 4,000 by 1907 (1928).

There are several reasons for the great discrepancy in numbers. Census information was often based on interviews with one or two village or band representatives rather than on the personal observation of the data collector. This was especially true regarding the people who lived upriver. The data were primarily gathered along the Puget Sound waterway and immediately adjacent areas, and seldom were the upper tributaries negotiated for the purpose of systematically counting the inhabitants. Furthermore, numbers fluctuated, depending on the season of the year they were counted. In the spring or summer, when the villages were more accessible to outside observers, village occupants were likely to be dispersed throughout the countryside actively involved in the food quest. Re-establishment of the winter dwellings the following year might involve an alteration in the village composition due to intermarriage or changes in the home base.

Since the first historic contact of Indian with non-Indian in the Pacific Northwest, there has been a dramatic reduction in the native population. Diseases were introduced for which the native inhabitants had no immunities. Lewis and Clark noted in their expedition along the Columbia River (1805-06) that a smallpox epidemic had preceded them by about thirty years (Gibbs 1855:408). The contagion may have spread north from California, and passed through the Pacific Northwest numerous times during the first part of that century. The Puget Sound area was not so hard hit by the first wave of disease as was the Columbia Plateau. Mooney suggests that it was the 1852-53 epidemic that "spread, with its usual destructive effect among nearly all the tribes of Washington and northern Idaho, wiping out whole villages..." (1928:14). In addition, syphilis, rum and gun powder contributed to the decline of the coast tribes. Finally, the move to relocate all the native peoples to reservations contributed to the population attrition. Both east and west of the Cascades, the transition and disruption of cultural traditions left many people with little resistance to any type of pestilence (Mooney 1928:14).

Settlement Patterns and Subsistence Economy

Seasonal Patterns

The winter population of the villages represented the largest assemblage of occupations at one site. However, not all the people would necessarily remain there all winter. Small hunting forays or social excursions to other villages may have been scheduled. Generally though, the winter subsistence was dependent upon foods that had been gathered and carefully processed and stored to last the winter. Preparations were made by the first signs of spring, that would initiate the well organized and highly systematic food collecting ventures of the next eight months.

During the spring, summer and fall, the permanent winter village site would serve as home base. Though dispersed for extended periods, the village members returned intermittently to store foodstuffs to meet the demands of winter consumption.

One of the first tasks of spring was preparation of the fishing sites. The weirs had to be reconstructed every year. Hunting and berry picking were the primary uses of the mountains, and these activities may have also required the construction of drying racks for food curing. These were built of cedar posts, with the drying platforms of cedar bark. Fires were built below for drying. There may have been several at one campsite, and they were probably not disassembled, but repaired or newly constructed each year.

Winter villages were reoccupied in earnest around the middle of October, and the food stores carefully packed away. Although occasional hunting trips might augment these supplies, they comprised the primary source of sustenance until resumption of the food gathering activities in the spring. Houses were also cleaned and repaired and the temporary structures erected. As winter set in, emphasis shifted from the subsistence quest to maintenance of the material necessities and social life. Women were occupied with household tasks, including sewing and mending of clothing, weaving of mats and baskets, and preparation of meals. Men refurbished the tools and weapons and undertook occasional hunting trips. In general, the less hectic winter months provided much time for socializing and participation in religious and ceremonial events, with dancing, singing and shamanistic rites cementing the ideological bonds between the village members.

Forest Resources

The Indians used many native plants and animals for their subsistence and material needs. Some were abundant throughout the northwest and were obtained by all the tribes from sources within their own territory. Others were relatively rare, and some of these became valuable trade items. The following sections focus mainly on resources that were obtained in the upriver environment by the Indians who claimed aboriginal territory within the Forest. Only part of the picture is presented. Table 3.1 gives an example of some of the other resources that made up the subsistence economy of the Puget Sound Indians. Not all of the resources were used by all of the tribes, and the preparation or use may have varied.

Table 3.1 Resources Utilized by the Puget Sound Indians

Plants. The following fifty-one varieties of native plants are of practical use, besides cultivated plants, and grasses for stock:

Alder. The wood is used for firewood, and for making dishes, plates, ladles, ballers, and masks, for the building of fish traps and rough houses; the bark is used for medicine and dyeing.

Barberry. The bark is used for medicines; the wood for firewood.

Cat-tail Rush. The blades are used for making strings and ropes, one kind of basket and mats, the rest of which are among their most useful articles. The head was formerly used in making blankets.

Red Cedar. This is the most useful vegetable production of their country, its wood being used for planks for houses, burial enclosures, rails, shingles, shakes, and the like, also for canoes, oars, baby boards, buoys, spinning wheels, boxes, torches, arrow shafts, fish traps, tamahnous sticks, and firewood; the limbs for baskets and ropes, the bark for baskets, mats, sails, infant head protectors, strings, ballers, and when beaten for women's skirts, beds for infants, wadding for guns, napkins, head bands, blankets, and for gambling purposes; the gum and leaves for medicine and the roots for making baskets.

Cherry. The bark is used for strings and medicine.

Cottonwood. The wood is used for firewood, the barks for medicine and strings; and the buds for medicine.

Cranberry. The berry is used for food, the juice for paint, and the young leaves for tea.

Crab-apple. The wood is used for wedges, hoes, mauls, mallets and firewood; the fruit for food and the bark for medicine.

Currant. The berry is occasionally used for food.

Dogwood. The wood is manufactured into gambling disks and hollow rattles, and is used for fuel.

Elder. The wood is made into arrow-heads, which are used as play-things; the bark is used for medicine and the berry for food.

Fir, red. The wood is valued for firewood, lumber, masts, spear handles, spits and spars; the bark is preferred to everything else for fuel, as it is often 3 inches and sometimes 6 inches thick and pitchy; the pitch wood is good for fire pots, torches and kindling, and for the latter purpose is sometimes sold to the whites; the pitch is used for fastening on arrow and spear heads, and for cement.

Gooseberry. There are two varieties, both of which are used for food.

Grass. Specific name unknown--is used extensively in making and ornamenting baskets. It is found in swamps.

Hazel. The nuts are used as food, the wood for rims to snowshoes, nets and the like, and the bark for strings.

Hemlock. The wood serves for firewood and halibut hooks, the leaves for tea, and the branches for covers in steaming food.

Huckleberry, black, blue, and red. The berries of all varieties are used for food, and the juice occasionally for paints.

Ironwood. The wood is used for arrow-shafts, arrow and spear-heads, and mat needles, and the bark for medicine.

Indian Onion. The bulb is eaten.

Kelp. Strings and ropes, especially fish-lines are made from the root.

Kamass. The root is edible.

Laurel. The wood is used in making spoons, vessels and fancy articles; the leaves for medicine.

Licorice. The root is medicinal.

Maple. The wood is useful for hacklers, mat blocks, paddles, oars, bobbins, seine blocks, combs, fish and duck spear-heads, fish clubs, rails and firewood. The leaves are used in steaming a smaller variety of maple, also used for firewood.

Moss. Used to wrap around wood while steaming to make bows and the like, the whole being buried in the ground.

Nettle. The fibre is used in making strings similar to twine, one of the strongest strings they have.

Oregon Grape. The root is valuable as a medicine, and the root for dyeing yellow.

Raspberry. The berries are a food and juice a red paint.

Rose. The roots and leaves serve as a medicine.

Rush. A round kind is used for making mats.

Sallalberry. The berry is used for food.

Salmonberry. The berry and young shoots are eaten.

Skunk Cabbage. The leaves are used for medicine, and the roots occasionally for food.

Strawberry. The berry is gathered for food.

Thimble-cup. The berry and young shoots are eaten.

Spruce. The wood is carved and the leaves are good as medicine.

Vine Maple. The wood is burned for fuel.

Willow. Occasionally the wood is used as fuel and the bark as strings.

Yew. Paddles, bows and fish clubs of the best kind are made from this wood.

Fern. The roots beaten were formerly an article of food.

Kinnikinic (arcto-Staphylos). The berry is used for food and the leaves are occasionally mixed with tobacco for smoking when this latter article is scarce.

Fire Weed (Epilobium). The cotton-like down from the seed was worked into blankets.

Ponce-da-num. The stem is used for food and the seeds, when ripe, as a medicine, being peppery.

Plants not identified. The roots of two varieties, the top of one of them and the young shoots of another kind are eaten; the root of another variety is medicinal. One of these is a rush, the equisetum.

Beasts. The following sixteen kinds of animals are useful to them:

Bear--black. The flesh is eaten, the skin is used for robes and quivers, and is sold to the whites, and the teeth are useful as ornaments.

Bear--grizzly. I have never seen one in this region, or ever heard of one being seen by anyone within the 12 years which I have been here. One of the Indians has however told me that it has been known to them, that its skin was used for robes, and that it was a strong te-mah-no-us animal supposed to be used by the medicine men in making people sick.

Beaver. The meat is good for food, and skins for furs, and the teeth are employed in the women's game of gambling.

Cat--wild. The flesh is eaten and the skins are made into robes.

Dog. Common, is of use for hunting, domestic purposes, and the like.

Dog--wool. The hair is used for making blankets. The breed is not extinct.

Deer. This is probably the most useful wild animal known to them. The flesh is used for food, the skins for robes, strings, fringes, moccasins, cloths, shotpouches and the like; the fawn skins are sometimes made in to buoys for whaling; formerly they made shirts which answered the purpose of shields or suits of armor from the skins; the sinews they used for thread, the hoofs for rattles in religious dance, and the brains in tanning.
Elk. The flesh serves for food, the skins for robes and shield-shirts, and when dressed for strings and clothes, and of the horns they make wedges, chisels and paints. The animal is in most respects used much as the deer, but is not so common by far.

Muskrats. The skins are useful as furs and the teeth in gambling occasionally.

Otter. The flesh is eaten.

Otter--sea. The skins are among the most valuable furs.

Panther. The skins are made into robes and clothes.

Raccoon. The skin is used for furs and the flesh is food.

Sheep or Goat--Mountain. The flesh is used as food and the horns for dishes and ladles.

Wolf. The skin is used for robes, quivers, and caps.

Mink. The skins are useful as furs.

The intestines of several of these animals are used for holding oil, and the bones for various articles, as awls, arrow and spear heads, combs, fasteners and the like.

Birds. These are seventeen kinds which they utilize as follows: the crane, 7 varieties of ducks, i.e., the mallard, pin-tail, wood-duck, scoter, teal, diver, and canvas back, the grouse, goose, two varieties of loons, and the pheasant are used as food, while the feathers serve as beds, pillow, and ornamenting the hair at festivals. The Gull also occasionally serves for food for old people, and the feathers for beds, although they are rather coarse.

Eagle-hawk and red-headed woodpecker. The feathers are useful for feathering arrow, and in tamahnous headbands.

Kingfisher. A piece of the skin where the tail or wing feathers enter it was formerly used in fishing, attached to the line near the hook, as it was superstitiously supposed that it would attract the fish.

Fish and other marine animals. Thirty-six of these are used by them. The following are eaten: three varieties of clams, two of crabs, two of codfish, and their eggs, the dog-fish when food is very scarce, two kinds of flounders, the halibut, herring, mussels, oyster, porpoise, five varieties of salmon with their eggs, namely, silver, dog, red, black and hump-backed, the hair seal occasionally, smelt, sea eggs, scallop, skate, sturgeon, trout, whale, and cuttle-fish, and one called tse-kwats by the Twanas.
The shells of the abalone, dentalia and sometimes the olivella, were used as money and ornaments. Large clam shells are of use as drinking dishes. The skin of the dog-fish is used as a substitute for sand-paper. The dog-fish, porpoise, hair seal, shark and whale furnish valuable oil, much of which is sold to the whites, and some of which is eaten. From the skin of the hair seal are made buoys used in whaling and sealing, small sacks, pouches and the like. Scallop shells are used as rattles in tamahnous. From the bones of the whale are made war-clubs, and part of the cod-fish hooks, and its sinew is used as thread.

(From Eells 1887.)

Plant Uses

The wide range of microenvironments of western Washington provided the aboriginal people with abundant floral resources. Over 100 species of native plants were used as foods (Gunther 1973; Turner 1975). In addition, these provided technological and medicinal materials as well. Women were in charge of collecting, processing and storing plant resources. Some plants were gathered in large quantities and were dried and stored for use throughout the year, while others were only useful when fresh.

Plant gathering was a significant subsistence activity. With few exceptions, it was not limited to the Forest. Although some foods were only found in specific areas of the region, there was a good deal of trade that distributed food resources between areas, so that the diets of tribes in the Mt. Baker-Snoqualmie vicinity contained similar foods. There was some variation, however, in the quantity and importance of particular foods from tribe to tribe (Keeley 1980:1).

The contribution of plant food to the native diet has been underestimated in the past, emphasizing a greater dependence on hunting and fishing than was actually the case. Anthropologist Helen Norton recently estimated the pre-contact diet, in percentage of caloric intake, to be 49% plant foods (29% roots and sprouts, 20% fruits), 40% fin fish, 10% shellfish, and 1% small and large mammals for the region west of the Cascades (Keeley 1980:3). This estimate, too, might be a little biased toward the coastal groups, as inland people may have shown a proportionately greater dependence on mammals.

Berries

Berrying and root digging would have been the most common food gathering pursuits to take place in the Cascades. Some of the very popular places are documented in the ethnographic literature; others may not be identifiable today due to naturally and culturally imposed vegetative changes. Places that were once open to the invasion and proliferation of food species may now be completely obscured by vegetation of later stages. As one Indian noted: "Where [my] family used to gather berries is now all grown up" (A. Smith 1964:165). Equally valid is this observation by another Indian, "There weren't blackberries like there are now, because the country was heavily timbered. They grew in just a few open spaces where the country was burnt over" (Collins 1974a:176). Today, logging has opened up many more areas that would not have been sources for berries in the past. Berrying places also changed from year to year:

> ...there is no reason to suppose that the same mountain meadows were visited year after year, for their floral characteristics alter with the growth cycle, affecting their economic yield, and the quantity of berries in a single locality varied significantly from season to season with other factors. Since hunting was secondary in importance to the gathering activity and engaged in in the vicinity of the berry grounds, the localities where this pursuit was carried out changed seasonally with shifts in the berry patches (A. Smith 1964:33).

Several types of berries were collected along the mountain slopes and ridges. Many of these were gathered earlier in the lower elevations as they began to ripen in June or July. By August, family groups would make special trips into the mountains for berry collecting and processing.

Huckleberries were the most important. As many as seven species of huckleberry commonly occur on the Forest along different elevational gradients (red huckleberry, Vaccinium parvifolium; oval-leaved huckleberry, V. ovalifolium; blue-leaved huckleberry, V. deliciosum; Alaska huckleberry, V. alaskense; evergreen huckleberry, V. ovatum; and grouse whortleberry, V. scoparium). The ethnographic literature does not often differentiate between the kinds of huckleberries being harvested. In his ethnographical review of Mt. Rainier, however, A. Smith (1964:160) describes the red huckleberry as undesirable food, but states that the thin-leaved huckleberry was highly prized. Oval-leaf and blue-leaf varieties were also actively sought by Indian gathering parties on the slopes of Mt. Rainier, and as the same species grow on the Forest slopes, these were probably important food resources there as well.

A wooden "comb" was used to remove berries from the limbs (Figure 3.3). The teeth were wide enough apart to run the limbs between them, and the berries were pulled off and fell into waiting baskets (Waterman 1973). Basket styles differed between the Indian groups. Toward the southern end of the Forest, the folded cedar bark style may have been used, particularly by those people who were strongly influenced by the Yakimas. These were easily made on-site, and were a kind of "disposable" container (B. Hollenbeck et al. 1982). Woven cedar baskets used by the northern groups in this area were carried to and from the berry patches and were reused from year to year.



Figure 3.3 Blueberry picker (adapted from Waterman 1973).

Some lucrative berrying grounds were intentionally burned to maintain the maximum yield and inhibit invading plant species. The regularity with which burning was necessary may have varied between sites. For example, the "shrub" stage, dominated by huckleberry and beargrass may persist for 50-100 years after a burn along the drier slopes of the silver fir zone (Henderson and Peter 1981:34). Parenthetically, burning was apparently common for other reasons as well. It made travel easier by improving accessibility, and increased the productivity of driving and tracking game (A. Smith 1964:169).

Berrying parties consisted of small family groups who hiked up to the mountains and camped for the short season. While the women collected berries, men hunted. Certain game and grouse would frequent the berrying patches, thus these resources were likely pursued at the same time. A berrying and hunting trip into the mountains might also include the collection of beargrass for baskets. It is abundant during the fall and may be found at the same elevation.

The combination of these pursuits still might keep the group at one camp for only two weeks or less. Summer mat houses were disassembled and carried from camp to camp. They could be quickly erected at each site. Drying racks also had to be assembled at the camps. These were constructed with wood posts and the berries were laid upon cattail or plaited cedar bark mats for drying. Fires built underneath facilitated the drying process.

Other berries such as blackberries, strawberries, salmonberries, elderberries, salal and Oregon grape are all found along the river valleys. It may not have been necessary to travel to the hinterlands, far from the permanent villages, to gather them. Possibly they were collected during other seasonal trips, but they are not strictly a mountain resource. Specific references to these pursuits are few.

Roots

Roots supplied a major source of carbohydrate to the diet. Camas (Cammissia quamish) was an important dietary component in the Northwest region; it was found on open prairies and gathered in the spring when in flower. Because camas was limited in distribution, people from a wide area would congregate in the camas grounds during the harvest period. "At these times, camps are generally found near the skirts of timber which border the open lands for the convenience of gathering and preserving" (Gibbs 1877:193).

Gibbs also noted that wappato, or wild potato (Sagitteria latifolia), was a primary food for the western Washington Indians (1877:193). Wappato is found in places that are inundated by fresh water, such as lake margins or marshes. Where these important plant resources were not found in the home territory, they were traded from others (Gunther 1973:24).

The major tool of the root industry was a wooden digging stick, about two and one half feet in length, often with a bone or antler handle (Fig. 3.4). Preparation of roots involved pit steaming or baking, a time consuming process usually requiring the cooperation of several women. There were numerous variations on this cooking technique with slightly different results. The food was placed in a pit in which there had been a fire. For steaming, the fire was sprinkled with water and covered with boughs and mats. A longer baking could be achieved by covering the pit with dirt, and building another fire on top. This slow fire was kept burning for up to 48 hours, depending upon the number of roots. When done, the roots were uncovered, removed, pulverized, and formed into cakes for storage.



Figure 3.4 Root digging stick.

Camas was cooked in this way, as it takes a comparatively long time to prepare. Camas is a bitter tasting bulb without much nutritional value until it is steamed for a long period. During this processing, a chemical change takes place which turns the carbohydrate inulin into digestible sugars, rendering it sweet and nutritious. Camas was highly valued as a food, and collected in quantity and processed and stored for winter use.

Several other roots were used, many of which may have come from the Forest slopes, river prairies and high meadows. The documentary sources cite ferns as one of the more common plants gathered along the inland forested slopes. Brake fern (Pteridium aquilinuma) and sword fern (Polystichum minitum) are abundant in the Forest. Regarding use of the brake fern, Erna Gunther states:

> The rhizomes of this fern were just as intensively used as one might expect from its growth in western Washington. They are roasted in ashes and the mealy center eaten to supply the starchy element in the diet (1973:14).

In many of the ethnohistoric references to the Indians "digging roots" (which includes underground stems) the authors do not identify the species sought. The camas, fern and lily families were apparently the most important (Collins 1974a:176). During the early contact period, some Indian groups were cultivating native plants in the prairies where they occurred naturally (Collins 1974a), although little is known about the extent of this practice. The women planted and transplanted certain plants to get them to grow in specific portions of the plot and in desirable quantities. Some plots were individual property, the ownership being transferred through the female line. The women would tend and weed their plots to insure a healthy crop. The stems were reburied to assure new plants the following year (Collins 1974a:175). These root plants also grew in unclaimed areas in the mountains, but there the ground is considerably harder and more difficult to dig (Collins 1974a). Some groups also adopted the potato when it was introduced and available from the Euro-Americans. Potatoes grew well in the natural prairies, and the Indians produced large quantities for trade in the late 1800s. This probably replaced many of the native roots in the diet at that time.

Shoots, Greens and Other Plant Resources

Several other plants were also collected during the spring. Some were eaten fresh and some were processed and stored for winter use. Many were not limited to the forest environment, therefore, the collection may have been incidental to other resource pursuits (A. Smith 1964:180). The fresh shoots of some berry bushes were gathered early in the spring, when they were succulent and juicy. The stems of wild celery or "Indian celery" (Cenanthe sarmentosa) were also eaten when they were young.

Red Cedar

Red cedar (Thuja plicata) was among the most important plants gathered for raw material, and it continues to be extensively used by the Indians of this area. Cedar was used for many things, from houses to canoes to ceremonial paraphernalia. It is abundant on the Forest, but also available in the lower elevations along the rivers, so it was not necessary to travel far to obtain large quantities. There was enough available along the rivers that overland transport for building or canoe construction was unnecessary. Red cedar bark also had many uses, "...in fact, there is no single item so ubiquitous in the Indian household" (Gunther 1945:20). Clothing, mats, baskets and canoe bailers are just a few of the items made from the bark.

The gathering of cedar bark may have been done in conjunction with other visits. Bark was stripped from the trees during the time of the year when the sap runs, which coincides with the berrying season at the higher elevations. The bark was removed in long strips, and once the outer bark was removed, the pliable inner layer was folded for transport back to the village. It could be dried and stored, and softened again by soaking it in water to prepare it for use. The women spent much time separating bark into strips for weaving. Shredded bark was also used as padding and as an absorbent material.

A folded cedar bark basket was used for collecting huckleberries by Sahaptin speaking groups from southern and eastern Washington, and this style may have been associated with groups on the southern end of the Forest. The Yakima Indians often travelled into the upper Snoqualmie drainage and Mt. Rainier areas to share in the plentiful resources. A study of peeled trees in the Gifford-Pinchot National Forest concluded that they were consistently located along travel routes to the berry fields and adjacent to known Indian trails (B. Hollenbeck et al. 1982). Some groups also peeled alder trees to fold the bark into baskets (M. Smith 1940). These folded bark baskets were quickly and easily constructed at the berrying grounds as needed. Baskets were also coiled from cedar roots, however, these were more complex in construction and would not have been made on-site.

Another of the important technological plants considered here is beargrass, which was used for basket making. Beargrass is a higher elevation grass that grows in the same altitudinal zone as huckleberries (M. Smith 1940:248). The grass was picked in quantity and sun dried for storage and later use.

Other woods such as yew, maple, willow, fir and hemlock were used for a variety of purposes from carving to dyes. The lists of technological plants that occur on the Forest are extensive, and vary between the Indian groups.

Medicinal Plants

Through centuries of close association with the land, the Indians of this region developed a familiarity with the medicinal properties of locally available plants resulting in a sophisticated pharmacopoeia. Many of the same species chosen for food were also gathered and prepared to cure symptoms of colds and intestinal disorders, as well as more serious illnesses such as tuberculosis. Bark, stems, flowers, leaves and roots were used and prepared in a variety of ways. Some plants were boiled to a soft texture and used for poultices, and others were eaten raw or cooked, or ingested in a tea.

Common mountain species included berries - the leaves of which were steeped to make a medicinal tea, and ferns - parts of which were used for everything from tonsilitis, sore throats and boils to hair wash and an aid to childbirth. Bathing with the branches of a yew tree imparted strength, while Douglas fir needles, heated and applied to the chest, helped to "draw out the pain" (Gunther 1973:19). Cedar, an integral part of Indian life in this region, also had medicinal properties which treated some of the symptoms of colds, among its many other uses. The Forest provided the only source of some of these plants, and many had to be gathered from a particular place to have the curing power (Hansen 1981).

Animal Resources

The higher elevations of the Cascade Mountains are commonly mentioned in ethnographic literature in reference to hunting. Although deer and elk are mentioned consistently, other meats and animal by-products were important to the subsistence and material culture of the western Washington people. Mountain goats in particular were an inland resource, and bear were available in quantity within the forested Cascades. Many other animals were hunted, but were less important to the diet. Beaver were common in all suitable lakes and streams. Muskrat and mountain beaver are among the smaller mammals. In a study of Snoqualmie ethnozoology, Turner makes the point that bobcat, cougar, coyote and wolf were not hunted (1976).

Hunting was economically important to the inland Indian tribes who did not have a wide variety of marine resources available to them all year-round, as did their coastal neighbors. The upriver groups were reported to have excelled in hunting skills. Once secured, nearly 100 percent use was made of the animals; food, clothing, household implements, tools and articles of personal adornment were fashioned from animal parts. Dressed skins and wool were traded downriver in exchange for coastal resources. Hunting was a continual activity for the men of the village, but the intensity with which it was pursued varied with the seasonal availability of that and other resources. It was suspended for a short period of time each year, when fishing took precedence.

Much of the hunting activity required travel beyond the immediate vicinty of the villages, away from the dense vegetation of the river valleys, to mountain meadow areas. In the winter, snowshoes were used to travel through the high country.

Deer and Elk

During the fall, as women travelled to the open uplands for berries, men joined them to hunt game. Deer (Odocoileus hemionous) was the most popular animal sought, due, in large measure, to its easy availability. This ubiquitous animal was hunted through either individual or collective efforts. The primary browse for deer consists of such species as trailing blackberry, salal and huckleberry, and they can be found where these plants grow in the fall, winter and early spring. Thimbleberry and grasses are preferred in the summer.

Elk also frequent the mountain meadows in the summer. They are primarily grazers, but may compete with deer for the browse species as the first snows fall and cover the grasses. Both are forced to descend during the winter to

ranges below the snow level. The elevations of deer and elk winter range vary with slope and aspect. Westerly and southerly exposures are comparatively more hospitable. Locations of present deer and elk winter range on the Forest are shown in Figure 1.2.

Deer and elk were hunted with bows and arrows. Sometimes, with the help of dogs, the Indian men would drive them until the animals were exhausted and fell easy prey. Loop snares were sometimes set along open trails, although this may not have been very effective (Turner 1976:33). Animals were also driven into pitfalls.

Where hunting took people into the hills, the meat had to be prepared at the temporary camps for easier transport to the villages and to facilitate storage. The flesh was dried on wooden racks before a slow fire, and some of it was cached in areas that were often used by hunters and travelers. Haeberlin and Gunther describe the drying process:

> The meat was cut in pieces and hung on a frame. Fires were built on three sides and the meat was thoroughly roasted. Then it was hung higher to dry more slowly. When done in this way, the meat would keep a long time. Hunters often dried meat in the mountains and cached it in trees covering it with boughs and mats to keep it dry. It was afterwards collected or eaten by other hunters (1930:21).

M. Smith (1940) notes that the Puyallup and Nisqually Indians placed so much emphasis on not wasting that if a traveller had to hunt for food while en route, it was necessary to stop and properly prepare the meat for storage. It could then be cached. Other parts of the animals were packed home. The skins were tanned and prepared as bedding, robes, strings, fringes, moccasins, clothes, and/or body armor. Sinews were utilized as thread, hooves as rattles in ceremonial dances, the brains as a tanning agent, and antlers and bones were fashioned into hunting, fishing and household implements (Taylor 1974:438).

Mountain Goats

Mountain goats were once abundant in the Cascades and were hunted on an annual basis by the native inhabitants of the upriver villages. Goats are usually associated with areas such as rocky precipices in the high elevations, which are not a habitat for other animals. Grasses and huckleberries of the mountain meadows supplement the goats' diets of lichens and mosses that grow on the bare rocks. In the winter the goats migrate to lower elevations to find food (Figure 1.2).

Goat meat was highly prized. Goats were also hunted for their wool, which was woven into blankets. Coastal Indians, who used the wool, received it in trade from the upriver hunters. Bows and arrows were used to hunt goats in the summer and fall of the year, probably in concert, again, with berrying in the higher elevations.

Bears

Bears were overcome in much the same manner as other large animals, with bow and arrow or pit trap. In the fall when the berries were ripe, bear hunting

took place close to the berry patches they were known to frequent, as an activity secondary to berrying. Turner (1976:86) mentions that they could be hunted year-round, the hunters smoking them from their dens in the winter.

Bears are also associated with a number of other habitats. Their spring diet consists primarily of grasses. In addition, bears are often seen in marshy areas seeking devil's club and skunk cabbage. They are fond of the moist cambium of second growth trees in the spring. By late fall, they have built up large fat stores to keep them through the winter when food is scarce. According to one of M. Smith's Indian informants (1940), bears were undesirable at this time when they were overly fatty just prior to their dormancy.

Bear meat was not dried, but prepared for storage by pit baking or steaming. In this process, a shallow pit was lined with hot stones, upon which the meat was placed. The meat was sprinkled with water and steamed under a cover of mats or leaves.

Birds

Grouse frequent the western Cascades, and along with other upland birds they were important additions to the diet. The ideal environment for ruffed grouse is the lower elevation forest edge; neither extensive cover nor large open areas make good grouse habitat. Bows and arrows and loop snares were used, the latter especially efficient during the mating season when the snares were set on drumming logs.

Blue grouse prefer higher elevations, taking to ridges and mountain meadows in the fall and winter, when they feed upon buds and needles of alpine fir. In the late summer, grouse frequent the berry fields and were probably hunted after they had grown fat feeding on ripe fruit. It is suggested that grouse were easy prey for the berry pickers. A. Smith presents the following evidence for Mt. Rainier:

> ...first the huckleberry areas and then the mountain ash slopes, where berries persist until the leaves fall and the bushes are bare, attract birds by the thousands to feed on the ripening berries. Among these are Sooty [blue] Grouse, which feast until, their crops distended, they hate even to fly. Moreover, the fermenting juices of the over ripe berries have a decided alcoholic effect on many of the birds (1964:214).

Grouse were roasted on a spit over the fire or boiled in baskets (Turner 1976:55). The eggs were eaten as well. Other birds are attracted to the huckleberries of the mountain slopes, among them the band-tailed pigeon which is common in the Forest.

Many migratory birds and ducks were taken along the lakes and rivers. In the fall and winter, nets were fastened to posts set in shallow water and stretched across the waterways. Loop snares and bows and arrows were also used. Smaller birds, rather insignificant to the diet, were also taken for both food and feathers. One was the flicker with its dramatic orange and black feathers, which were used to adorn the hair and trim caps and jackets. They were hunted with bows and arrows.

Fish Resources

Salmon fishing was a mainstay of the majority of the western Washington tribes, however, most of this activity probably took place below the present Forest boundaries in the larger drainages. The upper reaches of many of the spawning streams are naturally blocked by falls and steep gradients, and today, by dams and man-made obstructions. However, steelhead, sea run cutthroat, and five species of Pacific salmon - chinook, coho, sockeye, pink and chum - were found in suitable rivers and streams that were open for anadromous migration.

The upriver tribes fished from the first sign of chinook salmon in the spring through the chum run in the fall. Generally, early spring salmon were the most prized for their richness in oils and flavor. But, the later species, which were leaner, were easier to preserve. Gibbs stated that the inland Indians preserved both kinds; the early species "... after a stay in fresh water have lost their superfluous oil, and these are actually often traded to the Indians at the mouth of the river on the sound" (1877:195).

Six traditional methods were used to take fish. The most efficient method was determined by the stream characteristics. The most important was the tribal weir, which may have been used by several families at one time. Weirs, with slight variations, were used on all the rivers tributary to Puget Sound. A weir consisted of two or three tripods constructed to span the stream, against which a series of woven sections, or wattles, were held in place by the current. A slender platform (usually one plank) was laid on the structure so that a fisherman could sit out on the weir. Close to the wattle was a dip net, set on the bed of the stream. As fish were stopped by the wattle, the net was raised and the fish removed. The net was then reset (Ballard 1957). The tripods were constructed anew each year, but the woven wattle, which represented hours of labor, was saved and re-used year to year.

Dip nets were nets made of grasses or nettle fibers mounted on a frame with a handle. They were used off rocks and at the fish traps (Richardson 1974:54).

Funnel snares were used to catch fish (primarily steelhead) running downstream in the spring. The funnel, woven of willow stems, had a circular opening, about 18 inches in diameter, at the entrance, converging to a point at the lower end. Logs laid in the stream bed guided fish toward the trap (Ballard 1957). In his report on Indian fishing rights, Attorney Edward Swindell described the "small river trap" of the Snoqualmie Indians. This appears to have been similar to a funnel, but used a "woven bag-like structure" that did not taper to a point (Swindell 1942:23) (Figure 3.5).

Another kind of trap was called a "grill" by Arthur Ballard:

> It was about eight feet long and as wide. Dirt and gravel were heaped on each side of it. From a point upstream the banks were gradually narrowed so that the trout descending the stream were led to the trap. The trout landed upon a platform which the water poured through, where they floundered about helplessly (1957:43).

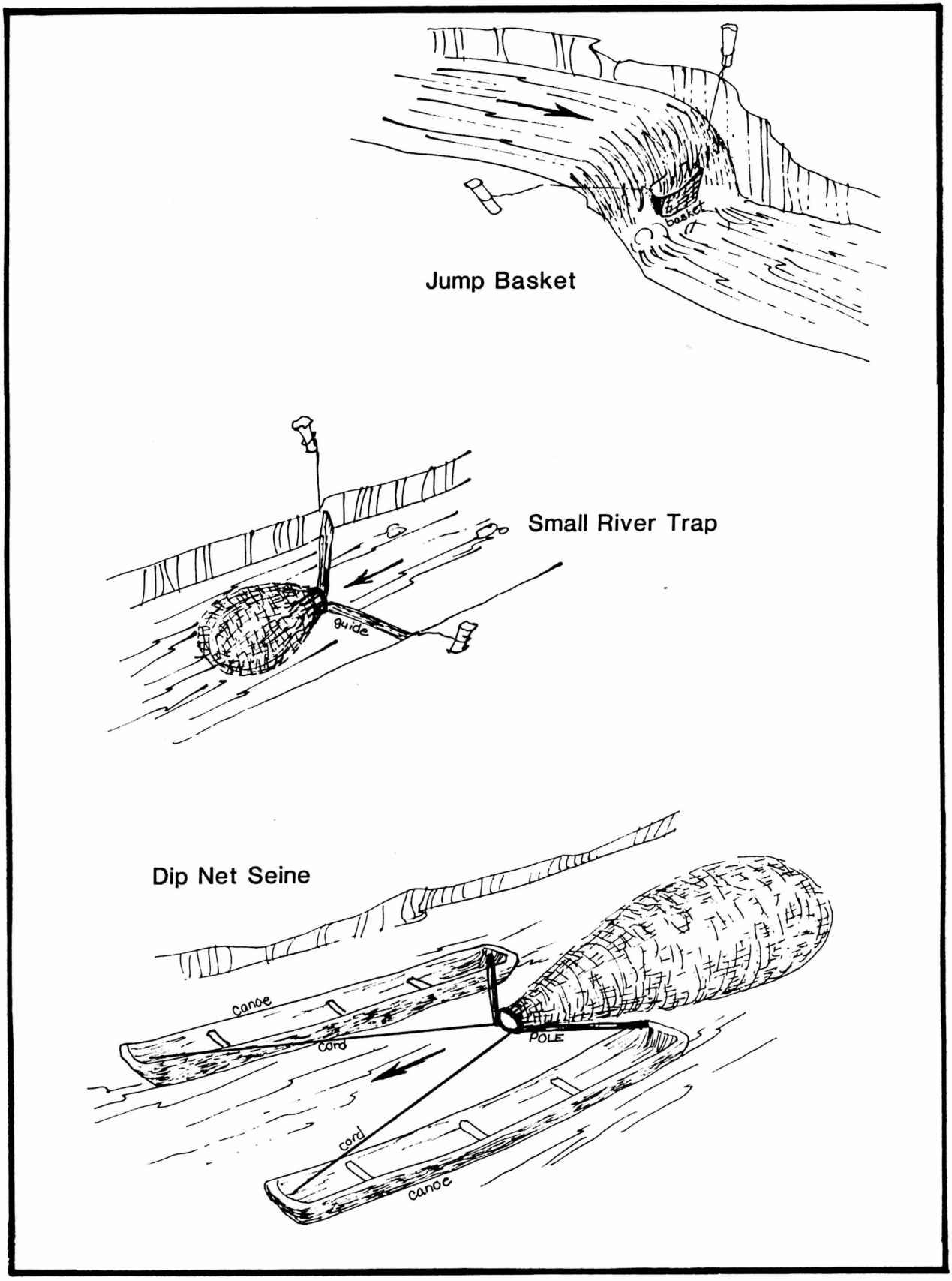


Figure 3.5 Traditional river fish traps (adapted from Swindell 1942).

A similar trap was used on the Stillaguamish River and may have been used elsewhere. It consisted of a box-like enclosure positioned below a cedar plank, set into the stream at a right angle to the banks so that some water poured over it. This was built where the current struck a rock or bar and turned abruptly, which guided the fish. The fish would leap over the plank and get trapped in the box below (Suttles in Lane 1973b:21-22). A variation of this was a basket, made of interwoven willows, set below a rock where the water formed a natural falls (a "jump basket") (Swindell 1942:23) (Figure 3.5).

Several varieties of nets were used. One of the most common appears to have been the dip net seine (Swindell 1942) or "sack net" (Richardson 1974), used between two canoes (Figure 3.5). Swindell described a Snoqualmie dip net seine:

> This was a fairly large seine, "shu-bvut", consisting of a long net bag made of "kag-wahl." The mouth of the net was held open by a ring of willow or cedar twigs fastened to two upright poles held in the stern of two canoes operating on each side of the bag. To the lower end of each pole was a heavy cord extending to the prow of the canoe in which the pole was held. Since fishing with that type of gear was principally practiced at night, a burning torch of pitch wood was affixed to the prow of each canoe. The canoes were paddled down stream by the prow operators with the stern operators pushing the poles down toward the bottom. When a fish was felt to enter the net bag, the cords in the prow of the boat were pulled up thus raising the mouth of the net out of the water, after which the fish was then dumped into the boat. This system was used in the large rivers and a variation of this type was also operated by one canoe and one man (1942:23).

Gill nets were constructed of grasses and set at some of the larger river eddies formed below the entrance of important tributaries.

Spears were used for almost all the species at fishtraps, at log jams, off rocks and in small creeks. They were limited to places where the water was clear and the fish could be seen easily. The spears consisted of a wood shaft, with tips of two barbed pieces of bone or antler set in a "V." Tips were fastened with native twine in a bone socket. The tip detached from the shaft when the fish struck, but remained attached to the shaft with a line so the fish could be retrieved (Figure 3.6) (Richardson 1974; Swindell 1942). Spears were usually constructed with two prongs, but three pronged spears (leisters) were also used.



Figure 3.6 Fishing spears (adapted from Waterman 1973).

Other types of gear were used, each particular to the characteristics of the stream, the size of the run, and the species being caught. The types described above were generally used in the river systems by all the Puget Sound groups, although they may have varied from tribe to tribe. Saltwater fishing used some of the same gear, but also required the application of several other techniques and skills.

Fish could be cooked over a fire and eaten fresh, or dried for storage. Salmon was cured for long-term storage by smoking. Prepared fish was hung over large, low-heat fires in the smokehouses. When ready, the meat was hard and inflexible. It could then be bundled and put safely away in the storage space of the winter house (M. Smith 1940). Steelhead and dog salmon were favored for smoking, because they were less oily. Before it was eaten, smoked salmon was soaked overnight in water and then boiled or roasted. If it was not soaked it could also be pounded until soft enough to chew. Fish could also be cured by drying over outside racks, with a combination of sun and heat from a fire built below. This resulted in a less hard product which might not keep as long. Before winter set in, the supply of dried salmon might already be exhausted (M. Smith 1940).

Salmon eggs were also eaten. They could be cured and kept, and were used to add flavor and substance to a variety of vegetal foods.

Above the natural barriers, non-migrating species included Dolly Varden and rainbow trout. It is probable that lake and upper stream fish were caught by the same methods mentioned above, where they were suitable. The freshwater fisheries of the upland territory are poorly documented.

Mineral Resources

It is clear from the literature, that some mineral resources found in the Cascades were known to the Indians. Knowledge of the locations of these resources was widespread, as the miners and early explorers came to realize when they hired Indian guides to lead them to mineral sources. The Indian use of silver, gold, etc. is undocumented, but coal, graphite, quartz and copper compounds have been found in at least one archaeological site within the Snoqualmie drainage (Blukis Onat personal communication 1986). Minerals were used by the upriver people and were also obtained in quantities for purposes of trade. Among their uses, minerals were used for paint, both for body adornment and to decorate objects. Haeberlin and Gunther, speaking of northwestern Washington tribes in general, state:

> The paint was gotten from mountain tribes by trade. The Snuqualmi also secured red paint...from east of the mountains. It was ground on a flat stone and mixed with a little water. Then deer grease was added to make it adhere to the skin. Yellow paint...was obtained from the stream beds. it was dried but not ground...In hot weather these paints were used to keep the face cool (1930:40).

Various outcrops of basalts, siltstones and cherts can be found in the Cascades. Some of these were quarried for the manufacture of stone tools. A few ethnographic reports attest to this activity, although exact locations are seldom given. No Indian quarry sources are documented within the Forest, however, which may reflect the difficulty in identifying them in this area.

Large outcrops of high quality cherts, for example, do not occur. Instead of going to an outcrop and removing quantities of rock, pieces of broken stone were probably gathered where they were found, which may have been on a river bar or in a stream bed. This kind of quarrying has made identification difficult in the northwestern Cascades. Certain rock types used for making stone tools were valuable as trade items. The Snoqualmie, for example, had numerous chert outcrops within their traditional territory and traded chert to the downriver tribes (Haeberlin and Gunther 1930:14).

The mineral and hot springs were probably used for ceremonial and medicinal purposes. In the ethnographic record, there is little mention of these activities, as they were considered personal and private.

Communication and Travel

Travel and Trails

Transmontane travel was frequent during the ethnohistoric period, and presumably before. Upriver people may have travelled more frequently compared to downriver people, because their food resources were more dispersed, their populations more sparse, and the needs of travel and for marriages greater (Jacobs 1937:55). Although the mountains have been viewed as an impassable barrier that separated eastern from western Washington culture areas (Indian Claims Commission 1974:185), many records from early explorers suggest otherwise. Several of the early expeditions that eventually led to the construction of wagon roads and railroad crossings through the Cascades initially followed Indian trails.

The ethnohistoric period also appears to have been one of change of emphasis on the traditional travel and trade networks. In 1877, Gibbs pointed to some of the effects of European contact:

> In former times, before the diminution of the tribes and the diversion of trade to the posts, there were numerous trails across the Cascades by which the Indians of the interior obtained access to the western district. Of late, many of these have fallen into disuse, becoming obstructed with timber and underbrush...In fact all their trails through the forest, though orginally well selected, have become excessively tortuous, an Indian riding around the fallen trunks of tree after tree [rather] than clear out a road which he seldom uses (1877:169).

The routes that linked the east and west crossed the crest through several of the mountain passes; the most popular being the Cascade, Indian, Snoqualmie, Yakima and Naches Passes. Table 3.2 lists additional passes that may have been used. In overland travel from one area to another, individuals or parties followed the lines of least resistance. Both ridges and streambeds were used, according to the local topography. Particularly in the northern portion of the Forest, people commonly walked in the streambeds to stay clear of the tangle of vegetation in the forested areas. In the southern end of the Forest, continuous ridges with sparser undergrowth, a more gentle gradient and a better vantage of the surrounding country made travel easier (Meyer 1928:743). The most popular routes were maintained to keep them free of brush and fallen trees that could render any trail practically impassable within a short time. A few of the inland groups, particularly but not limited to the Snoqualmie and southern tribes, kept horses which facilitated overland travel. However, the use of horses also increased the necessity to keep out of areas with dense, tangled undergrowth.

Table 3.2 Mountain passes that may have been used in cross-Cascade travel.

PASS	APPROXIMATE ELEV. IN FEET	LOCATION
Cascade Pass	5,393	Between North Fork Cascade R. and Stehekin R. systems
Kiawhat	6,180	Between Sulfur Cr. (Suiattle R.) and Spruce Cr. (Stehekin R.)
Suiattle Pass	5,983	Between Suiattle R. and Railroad Cr. (Lake Chelan system)
Buck Cr. Pass	5,787	Between Triad Cr. and Small Cr. (Suiattle R.) and Buck Cr. (Chiwawa R.)
High Pass	7,400	Between Triad Cr. (Suiattle R.) and Napeequa R. system
White Pass	5,904	Between North Fork Sauk R. system and White R. system
Indian Pass	4,980	Between North Fork Sauk R. and Indian Cr. (White R.)
Dishpan Gap	5,580	Between North Fork Skykomish R. and Little Wenatchee R. system
Wards Pass	5,700	Between North Fork Skykomish R. and Cady Cr. (Little Wenatchee R.)
Cady Pass	4,300	Between West Cady Cr./Pass Cr. (North Fork Skykomish R.) and Cady Cr. (Little Wenatchee R.)
Saddle Gap	5,360	Between West Cady Cr. (North Fork Skykomish R.) and Cady Cr. (Little Wenatchee R.)
Wenatchee Pass	4,200	Between West Cady Cr. (North Fork Skykomish R.) and Lake Cr. (Little Wenatchee R.)
Union Gap	4,700	Between Rapid R. system and Smith Brook (Nason Cr.)
Stevens Pass	4,056	Between Tye R. system and Stevens Cr. (Nason Cr.)
Deception Pass	3,980	Between Deception Cr. (Tye R.) and Cle Elum R. system

PASS	APPROXIMATE ELEV. IN FEET	LOCATION
LaBohn Gap	6,080	Between Middle Fork Snoqualmie R. and Shovel Cr. (Waptus R.)
Dutch Miller Gap	4,960	Between Middle Fork Snoqualmie R. and Waptus R. system
Snoqualmie Pass	3,004	Between Coal Cr. (Yakima R.) and South Fork Snoqualmie R.
Yakima Pass	3,525	Between Cedar R. and Roaring Cr.
Meadow Pass	3,650	Between Snow Cr. (Green R.) and Stirrup Cr.
Dandy Pass	3,750	Between Sunday Cr. (Green R.) and Dandy Cr./Stirrup Cr.
Stampede Pass	3,800	Between Sunday Cr. (Green R. system) and Stampede Cr.
Sheets Pass	3,450	Between Tacoma Cr. (Green R.) and Cabin Cr.
Tacoma Pass	3,450	Between Tacoma Cr. (Green R.) and Cabin Cr.
Green Pass	4,890	Between Green R. and Naches R.
Naches Pass	4,990	Between Meadow Creek (Greenwater R.) and Middle Fork Little Naches R.
Rods Gap	4,840	Between Greenwater R. and Middle Fork Little Naches R.
Louisiana Saddle	4,400	Between Greenwater R. and South Fork Little Naches R.
Hayden Pass	6,290	Between Goat Cr. (White R.) and Crow Cr. (Little Naches R.)
Blue Bell Pass	6,479	Between Silver Cr. (White R.) and Union Cr. (American R.)
Bear Gap	5,882	Between Silver Cr. (White R.) and Morse Cr. (American R.)
Sourdough Gap	6,500	Between Crystal Cr. (White R.) and Rainier Fork (American R.)

(Expanded from A. Smith 1964.)

Trails fed down the mountains and connected with foothill and valley systems below. In the lower valleys, routes between villages followed the waterways. Movement was facilitated by the use of canoes along the navigable rivers and streams. Canoes were used to reach resources and other village groups all the way to Puget Sound, and even beyond to the islands and the Olympic Peninsula. People spent several days travelling and may have erected temporary campsites along these trails. Certain overnight stops were probably recognized and used repeatedly by groups who made the long journey frequently.

There was also a network of trails that led to the berry fields and hunting territories for each group, but many of the ethnohistoric references to these are vague. Additional data about settlement and subsistence patterns would help us understand the early trail systems of the native peoples, and of course, the converse is also true.

Resource Exchange

Trade among the various Puget Sound groups, and between the Puget Sound groups and those of the Plateau, was both frequent and of long standing duration. Although resources necessary for food and raw materials were found in abundant quantities, the type and availability in any particular area varied considerably. In the coastal region, all kinds of shellfish were readily available that were not found in the fresh water lakes and rivers of the Cascades. In contrast, the inland groups and Plateau people had access to higher quality animal skins and different varieties of fish, roots and berries than were obtainable on the coast. Exchange was inevitable.

The inland western Washington Indians people carried on regular commerce with the Plateau groups. Avenues existed for food and other resources to be exchanged all the way down the western flank of the Cascades to the coastal peoples. Coastal goods moved inland in return. Gibbs observed:

> The trade between the two districts was once considerable. The western Indians sold slaves, haikwa [dentalium], kamas, dried clams etc., and received in return mountain sheep's wool, porcupine's quills, and embroidery, the grass from which they manufacture thread, and even dried salmon, the products of the Yakima fisheries being preferred to that of the Sound (1877:170).

Trade was often a corollary of the joint utilization of subsistence areas. This was especially true of the larger fisheries. Here, large groups comprising several bands gathered together, the salmon fishery providing the opportunity for gambling, games and the exchange of goods. Intermarriage was frequent, expecially between the Wenatchi and Skagit, and between various of the Yakima bands and the Nisqually, Puyallup, Muckleshoot and Snoqualmie (U.S. v. Washington 1974:87). As a consequence, fisheries within the domain of these Puget Sound groups were commonly used by the Wenatchi and Yakima people.

A real impetus to trade came with the introduction of the horse. Items that formerly had been too heavy or bulky to carry could now be transported with ease across the mountains. The Plateau people, who travelled long distances more frequently than their westside contacts, brought with them root cakes,

dried berries, Indian hemp, dressed skins, bows and sometimes horses. They returned home with fish, shells, basketry, dried clams and roots specific to the westside (Gibbs 1855:404; Haeberlin and Gunther 1930:11; Teit 1928:121). The dried clams, laced on strips of cedar bark, were a special delicacy. They could be eaten dried or boiled. M. Smith presents a vivid picture of the Sahaptin visitors, bedecked with garlands of clams, munching their way homeward (1940:245).

Natural trade corridors were formed along the main river routes. Trade was active in both directions from the territory of the inland Indian tribes; goods were received and exchanged from downriver and coastal peoples as well as from east of the Cascades. Food was of particular importance, but not the only reason for trading.

Three types of shell money were exchanged. In addition to perforated clam shell discs traded from the coast, tubular shell beads and some very large clams which originated north of the Snohomish territory were traded eastward. As shell money moved inland it became more valuable. Other types of shells, used for ornamentation of garments, etc., were also traded eastward. The inland tribes also enjoyed dried clams, smelt and herring from the coast. Because the inland tribes were excellent hunters and lived in a territory rich in game, they provided the coastal groups with dressed skins of deer and elk, and mountain goat wool for blankets. They also traded certain items unique to the uplands such as some species of huckleberries, beargrass for baskets, and certain mineral pigments for paint.

The Reservation Era

A comprehensive study of the treaty status of various Indian tribes in western Washington was conducted by Barbara Lane (1973, 1974-75), the findings of which were submitted as anthropological evidence in the landmark U.S. v. Washington court case (1974). These were the primary sources of the information presented below.

March 2, 1853 Washington Territory was separated from Oregon Territory by an act of Congress, and Isaac I. Stevens took office as Territorial Governor and ex-officio Superintendent of Indian Affairs. One of the first tasks assigned to the new Governor was to extinguish all Indian title to the land, through the negotiation of treaties with the various Indian bands. In August 1854, Stevens received instructions from Charles Mix, Acting Commissioner of Indian Affairs, to combine the separate bands into tribes, and to negotiate as few treaties with as few tribal leaders as possible. Stevens began a program to carry out these instructions.

Preparatory to the treaty negotiations, Stevens required a survey of all the Indians in his territory, their location, population size, disposition and relative degree of authority. Much of this information was gathered by George Gibbs, a lawyer and ethnologist, who later helped draft the treaties. Gibbs described the difficulties he had in obtaining this information, because the Indian bands of western Washington appeared to him to be in an almost constant state of "locomotion" in their annual food quest (Indian Claims Commission 1974:428).

Stevens strove to consolidate the separate and autonomous bands into large tribes to facilitate the treaty negotiations. He endeavored to appoint "Chiefs" and "Sub-Chiefs" recognizing that, in actuality, this structure had little or no relationship to the native political organizations of the Indians with whom he was dealing. Stevens' instructions to Col. M. T. Simmons, Special Indian Agent for the Puget Sound District, illustrate this:

> You are expected to enter forthwith upon a tour through the various tribes embraced within your District. For the purpose of acquainting yourself thoroughly with their condition, instructing them as to their relations with the citizens, and preparing the way to future negotiations. For this purpose you will organize small bands, not at present united, by gathering them into tribes, having reference to their general affinities, and by procuring the selection of head Chief and of assistant or lesser tyees, over the larger existing tribes you will also direct the appointment of head and Sub-Chiefs, taking care that in every case they be persons who, in your opinion will control them to best advantage. To these respectively you will issue commissions on the forms enclosed, filling up the blanks and making a record of the persons to whom they are given.
>
> In commissioning those persons, whom you shall determine to recognize as chiefs or petty tyees, you will explain to them that hereafter they will be held responsible in the first place for all offenses committed against citizens by Indians of their tribe, that the head Chief will in such cases be called upon for delivery of offenders, and the smaller chiefs looked to for his support, but that should they be unable without assistance from the government to make arrests, such aid will be given at their request. You will likewise inform them that on failure to do their duty, they will be removed and others appointed in their palace, and that in every case of resistance by a tribe to the authorities, it will be dispersed by force and not considered in any future treaties or payments of lands (Stevens 1854).

In December of 1854, a treaty commission was appointed to develop a plan for the treaty negotiations. Within the following two months, the commission concluded four treaties with the Indians of the western portion of the Territory. Included were:

Treaty	Date	No. of Indians
Treaty of Medicine Creek	Dec. 26, 1854 (Ratified Mar. 3, 1855)	1200
Treaty of Point Elliott	Jan. 22, 1855 (Ratified Mar. 9, 1859)	4992
Treaty of Point No Point	Jan. 25, 1855 (Ratified Mar. 8, 1859)	1316
Treaty of Neah Bay	Jan. 31, 1855 (Ratified Mar. 8, 1859)	596

The negotiations were conducted in Chinook Jargon, a trade idiom comprised of a combination of French, English and several Indian languages. They were then

translated into various Indian languages for the benefit of the Indians present. It is apparent that there was much lost in translation.

The majority of the Mt. Baker-Snoqualmie is composed of lands ceded by the Treaty of Point Elliott. The Treaty of Medicine Creek included the Puyallup Tribe, who claimed aboriginal territory along the Puyallup and Carbon Rivers in the southwest portion of the Forest.

During the negotiations at Point Elliott, Stevens chose to divide the Indians into four large groups associated with the major drainage systems. He appointed a chief for each group: Chow-its-hoot for the Lummi-Nooksack system; Goliah for the Skagit; Pat-ka-nam for the Snoqualmie-Snohomish system; and Seattle for the Duwamish River system. Under Article II of the Treaty, four reservations were to be established immediately upon ratification, to serve all the people who resided within the ceded territory. The Lummi Reservation was meant primarily for the Lummi, Samish and Nooksack; the Swinomish Reservation was to serve the inhabitants of the Skagit drainage; a Snohomish Reservation was to serve for the Indians of the Snohomish drainage, including the Skykomish and Snoqualmie Rivers; and a reservation at Port Madison was to serve the Suquamish and all the various bands within the Duwamish drainage system, including the Green and White Rivers.

Shortly after the signing of the treaty, hostilities broke out between the whites and the Indians, particularly those who resided east of the Cascades. In an attempt to keep most of the "friendly" western Washington Indians away from the "hostiles," two temporary reservations were established on Whidbey Island. One was located at Holmes Harbor, and the other was at Penn Cove. These served to house a few Indians for a short period of time, but were, for the most part, inadequate in size and provisions, and many Indians who moved to them did not remain. The Indians were expected to voluntarily join the reservations, but were not required to move off their lands until the treaty was ratified. The Treaty of Point Elliott was not ratified for over four years after it was signed.

An additional reservation was established at Muckleshoot, primarily for the Green and White River Indians, some of whom were allied with eastern Washington tribes during the Indians Wars of 1855-56. The Muckleshoot Reservation was on lands ceded by the Treaty of Point Elliott, but the reservation was provided for in the Treaty of Medicine Creek, presumably because that was the only treaty ratified at the time.

Apparently, little attempt was made to ensure that all the Indians of one area removed to the reservation to which they were assigned. While waiting for the Treaty of Point Elliott to be ratified, and in subsequent years, many Indians moved from one reservation and then another, or moved back to their native homes. Some eventually homesteaded in their aboriginal territory. Others worked in cities or logging camps or as seasonal labor in the hop fields. The propensity of these Indians to move about is illustrated in this letter dated August 18, 1877, to the Commissioner of Indians Affairs from Edmond Mallet, Special Agent at Tulalip, in which he outlined what he saw as a solution to the "problem":

> No people were ever civilized on horseback or in canoes, and one of the most powerful means of advancing civilization among these Indians in their present condition, is to make their homes more attractive, and to encumber them with so much furniture that they can no longer move the whole family and all of the household effects in a canoe. I have therefore estimated the new fiscal year for a large quantity of wall paper, flooring, bedsteads, chairs, tables, etc., in place of the usual estimates for tea, rice, flour, etc., which the Indians may easily procure for themselves (Indian Claims Commission 1974:428-429).

Ultimately, all the Indians of western Washington were to be removed to one centrally located reservation at Tulalip, near the mouth of the Snohomish River. This plan was not carried out, and the reservations at Port Madison, Lummi, Swinomish, as well as Tulalip, still exist today along with several others.

Ethnographic Overview of the Mt. Baker-Snoqualmie National Forest

Introduction

At least eight Indian groups have occupied and regularly used the lands which are now part of the Mt. Baker-Snoqualmie National Forest: the Nooksack, Upper Skagit, Sauk-Suiattle, Stillaguamish, Skykomish, Snoqualmie, Muckleshoot and Puyallup. The lands of the Forest were not limited to the exclusive use of these tribes, and today they continue to be used by Indian people of at least four other western Washington tribes. Others, including residents of the inland Columbia Plateau, shared in the occupancy of these lands and the use of the resources. These eight tribes include those whose native villages were located in the upriver environments, that is, whose permanent homes were more closely associated with the forested slopes of the western Cascades.

This section of the Overview attempts to present ethnographic information that is specific to these tribes, particularly that which is specific to the land base of the Mt. Baker-Snoqualmie National Forest.

The Nooksack Indians

Sociopolitical Organization

Territory

The Nooksack Indians lived in villages situated along the upper Nooksack River. At the time of the treaty, the Nooksack regularly, but by no means exclusively, used all the territory between the Cascade crest on the east and Puget Sound on the west, from the Canadian border south to and including Lake Whatcom (Indian Claims Commission 1974:149). They were closely allied with the Lummi and Skagit bands within the present boundaries of Washington, and with the Chilliwack, Sumas and Matsqua bands of British Columbia, with whom they jointly shared the rights to use certain areas between their respective villages.

The exclusive-use territory of the Nooksack Tribe was defined by the Indian Claims Commission as a triangular tract in the northwestern part of their use area. It included the primary village sites along the Nooksack River and the surrounding subsistence areas. The assignment of any exact boundaries is arbitrary, because it was impossible to determine with any degree of certainty the territory of exclusive use beyond the village site.

> Commencing at the present town of Lynden, Washington, on the Nooksack river, for the northwest corner, thence east to the town of Maple Falls located on the north fork of the Nooksack River, thence southwest across the middle fork of the river to the present town of Acme, Washington, located on the south fork of the Nooksack river, thence northwest to the point of beginning (Indian Claims Commission 1974:57).

The Nooksack did not occupy the remainder of the lands drained by the Nooksack River, except on a temporary basis.

The culture of the Nooksack Indians is traced back to the region of the Thompson and Middle Fraser Rivers, primarily through linguistic similarities and house types. The Nooksack spoke a Salish language (Lhechelesem) that was distinct, but related to the Salish languages spoken by their neighbors. There is some evidence that the people of the upper Fraser River spoke the Nooksack language until the early 1800s (Amoss 1972:10), at which time it was replaced by Halkomelem, the language of the Fraser delta. By the turn of the century, the residents of the Nooksack territory had reportedly also adopted some of the Halkomelem language as well as Puget Salish (Lushootseed) and, of course, English (Anonymous 1973:230A; Suttles, personal communication 1980).

Villages

The Nooksack Indians occupied several settlements along the Nooksack River and its tributaries, the Sumas River, and Lake Whatcom. Fishing, of primary economic importance, was a significant factor in the location of permanent settlements. The proximity to other resources, particularly roots and berries,

was also important. Villages clustered around natural prairies along the banks of the Nooksack River, where the distances to these combinations of resources was the shortest (Table 3.3). The primary villages of the Nooksack people were those located near the present sites of Everson, Goshen and Deming, however, there were settlements at several other locations, including a large one around Lynden. The term "Nooksack" is derived from the native word for bracken fern roots, and the people probably received the name from the site of a major village on Anderson Creek (Goshen), named "the place of the bracken roots" (Amoss 1972:13).

The many settlements along the river were autonomous. By the middle 1800s, however, three men were important leaders among the Nooksack people, dividing the drainage into three bands. Indian Jim Yelokanim (Lynden Jim) lived near Lynden and exercised a degree influence over the Indians in this vicinity. Tyee George (Tilliskerum?) lived near the crossing (Everson) and "ruled" from there to Deming, and Hump-cha-lem "ruled" the upper rivers and lived near the Forks (Jeffcott 1949:15). According to Indian Agent Fitzhugh, "Humpklam" was the most important headman among the Nooksack people (1857).

Villages were composed of one or more extended family dwellings, and were often associated with a large communal longhouse, or "smokehouse". Dwellings were usually constructed of cedar planks. Generally, they were small, about 40 feet square, and housed 10-12 adults. The smokehouses were much larger, and may have averaged 100 feet in length and housed as many as 40 people. The smokehouses served as the center of the economic activities during the fishing season (Tremaine 1975:47). Some were only occupied part of the year, functioning primarily as drying houses in connection with the nearby salmon fishery. Major smokehouse locations included Fishtrap Creek (near Lynden), Worthen Creek (east of Lynden), Qu-anich (Everson), the mouth of Anderson Creek (near Goshen), Dep-dap-y (Nugent's Bridge south of Lawrence), and the Forks (Jeffcott 1949:13-14, 49). The largest settlement was on Anderson Creek, where a longhouse measuring approximately 500 feet in length may have housed as many as 100 people (Jeffcott 1949:13).

The Nooksack Indians also built pit house dwellings similar to those found in the interior of Washington and British Columbia. These were known to have existed in at least two large Nooksack settlements, near the present sites of Lynden and Sumas.

> The houses were constructed in the following way. First a hole was dug in the ground four to twelve feet deep. Over this was placed a framework of poles tied together at the top with bottoms extending beyond the perimeter of the pit. Upon the poles were tied strips of cedar or fir bark, which acted as the roofing material. Dirt was mounded around the outside of the dwelling, and this helped secure the poles. The resulting shape of the pit house therefore was conical.
>
> A fire pit was located in the center of the house directly below a small opening in the roof through which the smoke could escape. Attached to the walls of the pit were cedar-plank platforms covered with reed mats which were used for seating or beds. Other furnishings included utensils, tools, and baskets filled with dried salmon, potatoes and other foods" (Tremaine 1975:54).

The occurrence of pit houses in the Northwest Coast culture area is suggested to be a major clue in tracing the Interior Indians into the Nooksack valley (Emmons 1952:43).

Table 3.3 Historic Nooksack villages and camps.

NATIVE NAME	DESCRIPTION
- - -	Fishing sites near the present town of Ferndale. The town of Ferndale is considered the lower limit of Nooksack fishing in the river, at least for the historic period. A fishing weir was located at Pioneer Park in Ferndale about 1870. In addition, the Nooksacks fished one mile below Ferndale.
Xaátstem	Camp and fishing site three miles above Ferndale. Camp used as a stopover on trips to the coast, a place to change to saltwater canoes. This camp was also used in the summer as a fishing site, and by elk hunters going to and from the Lake Terrel area.
Sí'kwewmex	Longhouse and fishing site at the mouth of Bertrand Creek. From here, the trail heads west to Birch Bay, and through the Custer area where cranberries and marsh tea were gathered.
Moómokwem	A village on Bertrand Creek, at the southern edge of Bertrand Prairie. The village was abandoned approximately 1882.
Méḱ'sen	A village located on the northeast part of Bertrand Prairie. This village was still functioning in the 1870s, and in skeletal form in the late 1880s.
- - -	A fishing area was located on the Nooksack River below Lynden.
Skwehaálich	A longhouse, fishing site and burial ground was located at the present town of Lynden. The longhouse and fishing site were on Fishtrap Creek. Silver salmon were caught here and dried for winter use. A fishtrap and longhouse for drying fish were active in 1870. This is considered a major village of the Nooksack River people.
Stickney Island	This fishing site and early homestead are sometimes included as part of the village at Lynden.
Skék-oyek	A fishing site was located at the end of Notter Road, T40N R3E Sec 26.
Sp'eteéws	A village site, on the northeast end of a prairie, which formally extended to the Skwehaalich sites. This prairie produced large crops of camas and wild carrot before being taken over by white settlement. The historic village consisted of a longhouse which was torn down about 1900.

NATIVE NAME	DESCRIPTION
Smaáłtanthwet	A village on Worthen Creek contained a ceremonial longhouse used into the 20th century.
Sxoókwel	A well known village east of Fishtrap Creek; the name means "going across". This became the homestead of Louis Sacquilty, and portions of it remain in trust today.
Ts'tscólesm	A village and fishing site located on the natural prairie at the present site of Clearbrook. A fishtrap was located here on Johnson Creek.
Temiíxwten	A village was located on Sumas Prairie, one mile southeast of Sumas. This Nooksack village was closely associated with the village of Semaath of the Sumas tribe, located one half of a mile north.
Semáts χótse	A fishing, hunting and gathering site on Sumas Lake. Many Nooksacks went here in the early spring (March) to fish for steelhead and sturgeon, to hunt ducks, and dig roots.
Swaáyx'	A village was located near Everson, on the southwest side of the Nooksack River.
Kwaánech	A village was located on the northeast side of the Nooksack River, until it was abandoned under pressure from the growth of the town of Everson.
- - -	One mile above Everson was the traditional location of a fishtrap.
Schoówxwxen	A village was located on the west side of the west branch of the Nooksack River, two miles above Everson.
Tschoówwesxen	A village was located on the east branch of the Nooksack River, directly above the village of Schoowxwxen.
Xelxelaáltxw	A village and fishing site on the river, a short distance above Tschoowwesxen.
- - -	A fishing site was located on the upper reaches of Ten Mile Creek, a tributary of the Nooksack. Silver salmon spawned in this creek.
Newxwsá7aχ	A village, fishing site, and plant gathering site was located on Anderson Creek, near Goshen. Pronunciations of this name mean "place of the fern root". Bracken ferns and wild carrots grew here. Silver salmon, steelhead and trout were all caught in Anderson Creek, with a weir and with nets.

NATIVE NAME	DESCRIPTION
Spaálhxan	A village and fishing area were located on what was formerly an island in the Nooksack River, opposite the mouth of Anderson Creek. The name means "prairie", as this village was located near the prairie where wild carrots were dug. The longhouse at this village was the last to stand in its traditional location, dismantled in 1931. The river at this location was also an important fishing site, where dip nets were used.
Yexsoóy	The mouth of Smith Creek, near the town of Lawrence was the site of a village and a fishery. Silver salmon and steelhead were fished in the creek, and the village also had a strip on the river for set nets and dip netting. The site of this village has been washed away by the river.
Thiíthix	A village was located near Nugent's Bridge and Cedarville on the southwest side of the river. Jeffcott (1949) called this village "Dep-dap-y".
Kwiíkwixews	A village and fishing site was located above Nugent's Bridge on the northeast side of the river. Salmon were caught using dip nets along this stretch of river. It was also known as a place for digging roots.
- - -	Fishing area located in the river opposite Deming. Remnants of a fish weir were seen here in the middle 1800s. About 1900, fishing was done here with set nets and dip nets.
Xwáxwelets	A village and fishing site was located on the east bank of the main river below the forks. In 1868, this was the home of Umptlalum (Hump-cha-lem), the "chief" of the upriver villages. This continues to be an important fishing site, known as fishing rocks.
New7xwiíem	This was a major winter village of the tribe, located a quarter of a mile above the forks, on the South Fork (both sides). A trap weir was built across the river each year in the spring to catch spring and silver salmon.
Xwiíem	This name means "clear water", and was the name given to the South Fork. Fishing was done at all feasible locations along an eight mile stretch of river above the village of New7xwiiem.
Ts'ak	A camp, or summer village, perhaps with a longhouse, and a fishing site was located at Acme on the South Fork. Considerable fishing and fish drying were done at this location. The trail to portage to Lake Whatcom began here.

NATIVE NAME	DESCRIPTION
Leyxéyuk'	A camp area and fishing site was located on the South Fork above Skookum Creek. Many people converged at this area in the summer (July) to fish for spring salmon. Fish were caught in the narrow canyon of the river at this location with dip nets and spears.
Nexxwelmaáltxw	About five miles above Leyxeyuk', was the uppermost village of the South Fork. This was a camping and fishing area. A trail about six miles long went from this village over to the upper Skagit River country. There were also important fishing areas in the upper reaches of the South Fork above this location.
- - -	A camp was located at the mouth of Howard (Sisters) Creek, used as a base camp for hunting trips on the slopes of Twin Sisters Mountain. Berries were also picked on the mountain and in the camp area.
- - -	On the North Fork, just above the forks, there was a dog salmon creek.
Xwtiíʔkw'em	A village was located on the flat on the south side of the mouth of the Middle Fork. The Middle Fork was fished only for steelhead.
- - -	Canyon Creek on the Middle Fork was a fishing site, used in the winter months for steelhead.
Xkélem	A fishing area on the North Fork was fished late in the year for dog salmon, silver salmon, steelhead and sometimes for the less desirable pink salmon. Dip nets and set nets were used here in the early 20th century.
Kw'éwleʔxwi	This was a village and fishing site at the mouth of Kendall Creek. After about 1850, this was no longer used as a village site, but continued to be used as a fishing site, and a longhouse for drying fish was present until about 1905. The name means "dog salmon place", the fish being so thick at times that it was dangerous to cross the creek. The fish were easily speared or taken with dip nets.
- - -	A fishing site was located at the eddy at the base of the falls in Maple Creek (near the town of Maple Falls).
- - -	A wickersham on the upper Samish River was a camping spot where fishtraps were built. It was also used by the Upper Skagit but was considered to be in Nooksack territory.

NATIVE NAME	DESCRIPTION
Xachwaámex	A village site and camp site was located on Lake Whatcom, near the town of Park.
Xachwaámex	A fishing site was located on Lake Whatcom where freshwater coho and a small variety of silver salmon were fished. Many beaver were also hunted here.
Ch'úk'enet	A base camp for gathering shellfish was located at the mouth of Chuckanut Bay. This was the main clam gathering location of the Nooksacks.
- - -	Shellfish gathering and fishing areas include Samish Bay and Samish Island; Bellingham Bay at the mouth of Whatcom Creek; Squalicum Creek where it enters Bellingham Bay; at Lummi where the Nooksack River enters Bellingham Bay; Birch Bay; Semiahoo Spit; and Dakota Creek, and possibly California Creek, just south of Blaine.

(Adapted from Richardson 1974.)

Population

In 1854, George Gibbs estimated the population of the Nooksack Tribe to be 450 men, women and children. This figure appears consistent throughout the various reports of the 1850s (Lane 1974). Based on the available information regarding the number of houses at each village site, a much larger aboriginal population can be inferred:

> Based on information available at present, these 450 persons lived in 9 villages, containing 12 houses which is an average of 37.5 persons per house. With this per house figure the Nooksack population in 1820 can be estimated at 863, based on 13 villages, containing 23 houses. The aboriginal population prior to the first post-contact disease epidemic was almost certainly higher. In about the year 1800, 30 houses may have been occupied, which at 37.5 persons per house, gives an aboriginal population of 1125. Although these figures are at best rough estimates, there was clearly a considerable population decline in the early 19th century (Richardson 1978:2).

Seasonal Patterns

The riverine environment of the Nooksack Indians was rich in fish, game and berries. The Nooksacks were well adapted to their upriver territory, utilizing the resources close to their village sites for most of their food and material needs. The Nooksack economy was supplemented by the exploitation of the saltwater environment. They made frequent trips to the coast and occupied temporary summer village sites in the vicinity of Bellingham Bay for the harvest of marine fish and shellfish. Marian Smith suggests that the Nooksack were equally well adapted to the riverine and maritime ways of life (1950:337).

During their annual food gathering round, the Nooksack also travelled to the slopes of Mt. Baker for blueberries and mountain goats, unique to the mountainous environment. It is suggested, however, that such trips were infrequent, due to the wealth of resources available in the lower stretches of the drainage (Indian Claims Commisssion 1974).

Plant Resources

The Nooksack used at least six varieties of roots that were native to the prairies of the Nooksack valley. The prairie east of the present town of Lynden was used for bracken fern roots and camas bulbs. Similar prairies were found between Lynden and Everson, between Lynden and Ferndale, near Lawrence, at Clearbrook, near Goshen and at the Forks (Tremaine 1975:51). The most important of the root plants was the wild carrot (*Perideridia gairdneri*). Carrot plots were family owned, and tended and cultivated by the women:

> ...the Nooksack actually replanted [the carrot tops] to assure a new crop. Near Goshen, there was a small prairie where many "Indian carrots" grew. These were prized food and were dug in March. Each family owned its own plot, about forty feet square, and the plots were marked off from each other by shallow ditches. Trespass on another's plot was a serious offense and caused "big fights." The roots were dug,

> the edible portion broken off, and the sprout replanted. The soil was kept loose and "easy to dig"... Other root crops, which were neither so prized nor so scarce, were not so carefully tended... (M. Smith 1950:336-337).

In addition, the Nooksack women harvested three kinds of wild onions and another unidentified root from a plant similar to a fox-tail (Amoss 1978:6).

Berries were also abundant near the prairies. The Nooksack periodically burned the root and berry areas to keep them from becoming overgrown and to keep the plants young and fruitful. Blackberries, red huckleberries, salal berries, salmonberries, and thimbleberries were harvested in season from the appropriate areas. Mountain blueberries were picked in the alpine meadows of Mt. Baker, and involved trips of several days (Amoss 1978:7). Berries were usually sun-dried at temporary camps and then packed home. Blackberries and blueberries were most suitable for drying, so these were dried, pounded into cakes, and stored for winter provisions.

Potatoes were introduced into the Nooksack culture area by the Hudson's Bay Company around 1828-30, shortly after the establishment of the trading post at Fort Langley on the Fraser River in 1827-28. The Indian women adopted potato cultivation in their prairies and before long were producing excess quantities which they sold and/or traded to the white settlers for other provisions.

Animal Resources

Deer, elk, bears and several smaller game animals were available within a short distance of the village sites of the Nooksack. Deer and elk found forage in the open prairies, and bears were commonly found near the berry patches. Meat was an important component of the diet of the Nooksack people who were said to "live by the chase" (Fitzhugh 1857). With the exception of mountain goat hunting, the men probably took advantage of what was close to home.

Trips to Mt. Baker were necessary to obtain mountain goats which, if not a primary food necessity, were important to the Nooksack as a trade item. The long white wool was highly prized, and used by the Coast Salish for weaving blankets. Mountain goat wool blankets were once a symbol of wealth in the northern Coast Salish area, and the Nooksack people recognized the position they held by having a degree of control over this resource. A group of Nooksack reportedly became outraged when they discovered that the Thompson Indians had been poaching mountain goats from the Mt. Baker territory (Coleman 1869:799).

Mountain goats were hunted in organized drives, the success of which were described in 1930:

> Again as to mountain goats (Oreamnos americanus americanus). The older Indians had all taken part in the drives that had reduced these animals to the vanishing point on all the nearby ranges. The whole tribe, men, women and children, would laboriously climb the mountains - and such a climb - to timber line, where camp would be made and elaborate preparations instituted for the great drive. Some large amphi-theatre would be selected and the hunters armed with bows and arrows and even spears, stationed at the various outlets along the rugged rim. Below, the rest of the tribe

> formed a line stretching across the entire valley and slowly and steadily swept forward and upward driving everything before them to where the ambushed hunters on the skyline awaited the climbing animals; any that broke back were speared or otherwise destroyed and few escaped a well organized hunt (Brooks 1930:66).

Fish Resources

The salmon runs of the Nooksack drainage were the most important element of the subsistence economy of the Nooksack people. It has been estimated that a full 50% of their food was obtained from fishing, with 30-35% from hunting, and not more that 20% from gathering (Richardson 1974:51). The Nooksack had traditional fishing sites along the Nooksack River and its tributaries, from the approximate location of Ferndale, upstream on the main river and along both the North and South Forks (Richardson 1974). Four species of salmon were regularly caught, along with trout in the freshwater river system. The lakes, most notably Whatcom and Sumas Lakes, provided land-locked salmon and sturgeon. Fish species included (from Richardson 1974:55-56):

A. Spring salmon (chinook) - These were caught almost entirely in the South Fork, in mid to late summer, and were taken primarily using spears and dip nets at log jams in lower parts of the South Fork, and especially in the narrow rocky canyons of the upper South Fork. When the river was low in the late summer, spring salmon were also caught in fishtraps built across the lower South Fork. Most of the spring salmon catch was wind dried and stored for winter use. The eggs were also dried and stored.

B. Silver salmon (coho) - These were caught in the main lower river and especially in its side creeks where most silver salmon spawned. The most important creeks were Fishtrap Creek by Lynden, Anderson Creek at Goshen, and Smith Creek near Lawrence. Traditional winter villages were located near all of these. Silver salmon were caught in the fall in fishtraps in the creeks. They were eaten fresh and smoke dried for winter use in longhouses, better known as "smokehouses," located at the fishing sites and at the villages.

C. Dog salmon (chum) - Dog salmon were caught in the main river, on the North Fork, in the side creeks of the North Fork, and in Squalicum Creek entering Bellingham Bay. Squalicum Creek and Kendall Creek were both named in the Nooksack language for this fish. Kendall Creek was the most important of all locations for taking dog salmon. Caught in the late fall with spears, dip nets, eddy nets and fishtraps, they were were especially desired for drying and often called "dry salmon." They were smoke dried and kept for winter use.

D. Steelhead - These were caught in the main river and its side creeks, the North Fork, the South Fork, the Middle Fork and its tributary Canyon Creek, and Sumas Lake. They were the most important fish at the Anderson Creek fishing site. Steelhead were caught in the winter and early spring, using all fishing methods including sack nets, and were always eaten fresh.

E. Pink salmon - Pinks were caught in the main river and North Fork in the late summer and fall, using fishtraps and eddy nets. They were not considered a very desirable fish due to the softness of the flesh when fresh, and the extreme hardness when dried. Mostly, they were eaten fresh.

F. Sockeye salmon - There was not a regular run of sockeye in the Nooksack River system, although strays were occasionally caught. These were called "lost fish." The Nooksacks sometimes fished the Skagit and Fraser Rivers during the sockeye runs.

G. Small trout (native rainbow, small cutthroat and Dolly Varden) - These species were caught in small streams throughout the area, but were particularly important in Fishtrap and Anderson Creeks. They were taken, for the most part, in the spring when larger fish were not available. The method used specifically for these fish was a net set into a fishtrap with a vine maple framework. Trout were eaten fresh and smoke dried.

H. Large trout (cutthroat and Dolly Varden) - Dolly Varden trout were caught in fishtraps in the main river in the late summer and fall. They were eaten fresh and dried.

I. Freshwater coho - a small land-locked variety of silver salmon were caught in Lake Whatcom. They were dried for winter use.

J. Sturgeon - These were caught in the early spring in Sumas Lake, and eaten fresh.

In addition, saltwater species of flounder and sole were caught during sojourns to the coast, primarily during the spring and summer.

The type of gear most suited for the location and species was used. Weirs were built at the mouths of creeks and were used for virtually every kind of anadromous fish. Dip nets were used off the rocks, as in the canyons of the South Fork, and at the fishtraps. A special net designed for eddy fishing was employed at the place they called "fishing rocks" just above Deming, where eddies were formed by the rocks in the river. Eddy nets were also used in certain places along the South Fork. Spears were used off log jams and also came in handy at the fishtraps. Where the river was not too swift, sack nets were set between two canoes. This was used particularly for catching steelhead (Richardson 1974:54).

The favored and dependable fishing locations of the Nooksacks were at the mouths of creeks entering the main river and North Fork, the narrow rocky stretch at the forks, and the South Fork with its clear water and narrow canyons. Other locations were regularly fished, however, because the river channels of the lower stretches changed from year to year, the fishing sites changed as well (Richardson 1974:52). In the vicinity of Deming, Edmund Coleman observed the stakes of a salmon weir that had been used the previous season, more than sixty feet from the shores of the river (1869:799). A comprehensive list of the villages, camps and fishing sites, prepared by Allan Richardson, is summarized in Table 3.3.

During the big fish runs, the fishing sites were alive with activity. Four to six families moved to the site; the women were kept busy dressing and preparing the fish for hanging in the smokehouse, while the men removed the fish from the traps and gathered fuel for the drying fires. As soon as the fish were dry, they were taken down from the overhead racks to make room for more. During other times of the year, such as during the steelhead runs in February, the traps were checked at regular intervals although the village members might not stay at the site (Hawley 1945:44).

Communication and Travel

The majority of travel through the Nooksack territory was by canoe. The Nooksack never adopted horses as did some of the bands to the south. They were experts at navigating the shovel-nosed canoes along the river "...poling upstream and shooting the rapids in dexterous fashion in the descent" (Jeffcott 1949:15). They built canoes for their own use, which enabled them to transport quantities of trade goods and provisions downriver into Lummi territory. Because of their upriver location, the Nooksack had ample access to game, and they traded these resources downriver. The Lummi were dependent upon the Nooksack for goat wool, used to weave blankets (Amoss 1978:6).

Several important trade routes radiated from the three major Nooksack villages. In addition to the Lummi, the Nooksack traded with their other neighbors to the south and west, inclusive of the Semiahoo and bands that lived along the upper and lower Skagit River. A main trail ran like a connecting thread through Nooksack territory, linking the coastal villages with the upper valley. From the west, people crossed several drainages between Birch Bay and Fishtrap Creek, from which point the trail generally followed the main river up to and continuing along the North and South Forks (Tremaine 1975:45). There was also a marked trail between the upper Nooksack and the Skagit River country, along which people from both drainages travelled with regularity (Anonymous 1973:234A). Several trails converged at Pop-a-ho-my ("the crossing"), a place between Lynden and Everson where the river was low enough for a regular crossing.

The Nooksack also traded with the Sumas, Chilliwack and Matsqua Indian bands of British Columbia, and from their main settlements there were many well defined trails that led northward (Jeffcott 1949; Tremaine 1975). There was also some trade and travel inland to the northeast, to the lower Thompson Indian area. The Nooksack imported grass for nets from the Thompson/Fraser River country and a glue substance, which came from Fraser River sturgeon, was preferred by the Nooksack for making their sinew-backed bows (M. Smith 1950:332).

It was by way of their northern connections that the Nooksack later received European trade goods. They were among the first to adopt the cultivation of European potatoes, and from them it spread south to other Indians of northern Puget Sound. Unfortunately, a devastating smallpox epidemic spread into the Nooksack country along the same route, around 1870. Thus, it became known to the Lower Skagit as the "Nooksack sickness" (M. Smith 1950:332).

The Reservation Era

Historically, there has been some question as to whether the Nooksack treated with the United States over the lands of the upper Nooksack River. Several factors were important in determining the treaty status of the Nooksack Tribe. Firstly, they were not named in the preamble of the treaty, nor are any of the signatures at the end of the document identified as Nooksack (Lane 1974:1). In a significant account of the treaty proceedings, George Gibbs reported on January 9, 1855:

> Mr. Shaw returned from Bellingham Bay having been entirely successful in engaging the Lummis and other Northern bands to come in, except the Nooksahks, whose country was inaccessible from ice in the river (Lane 1974:1).

It is not clear from the reports when the Nooksack arrived at the Treaty grounds, but a later census (January 16, 1855) recorded that 256 Nooksack Indians were present (Lane 1974:15).

Finally, in accordance with instructions issued to Governor Stevens, representative signators were appointed for each drainage, and it was under the signature of Chow-its-hoot, "Chief of the Lummi and other tribes," that the Nooksack were considered by the United States to be party to the Treaty of Point Elliot. Most of the historical literature documenting the implementation of the treaty indicates that the U.S. consistently regarded the Nooksack as a Treaty tribe (see Lane 1974).

The Nooksack Tribe was assigned to residence on the Lummi Reservation at the mouth of the Nooksack River and encompassing an adjacent island in Bellingham Bay. Colonel Fitzhugh was the agent in charge of the Lummi, Nooksack and Samish. In 1857, Fitzhugh recognized the difficulty of relocating the Nooksack to a salt water beach:

> The New-sacks...live by the chase, principally around the foot of Mt. Baker. There are hundreds of elk and deer; the rivers abound in salmon, trout and sturgeon...friend[s] of the whites, but [do] not want them to settle in [this] country. They know the extent of their prairies, and know by the growth of their potatoes that they have the best soil for cultivation in this section, and better hay or grazing country does not exist than their prairies.
>
> The whites of the Bay have surveyed a road through their lower prairies, a distance of from sixteen to twenty miles, and have cut out three or four miles. I am in hopes they will not get it through this summer, for I am confident that as soon as any white settlers go there to locate they will drive them out. They say that they are determined not to have their lands taken from them. If the treaty that has been made with them, if any, could be modified so that they could receive value for so much of the land as the United States wants, and give them a reservation in place, so that they would not be entirely out of their element, then, I think, there would be no difficulty; but until then, there will always be more or less trouble (Fitzhugh 1957).

During the years of 1857-1873, the Nooksack people were forced by encroaching white settlement to abandon some of their traditional villages (Lynden, for example). Even so, they resisted removal to the Lummi Reservation preferring to stay in their upriver environment. They established five farm settlements corresponding to traditional village locations. In 1873, and again in 1874, there were attempts to move the Nooksack people from the Nooksack valley to the Reservation, during which time some of their homestead claims were lost. Finally, in June of 1874, the Commissioner of Indian Affairs conceded to allowing the Nooksack to remain in the valley (Richardson 1978).

> By 1895 the transformation in settlement from longhouses to homesteads was complete. The Nooksack held secure title, as individuals, to a very small fraction of their traditional lands which had been held in common. In spite of the change in land ownership, and despite living on small homestead

> farms, there are many continuities with the traditional past. The homesteads are all within a short distance of the traditional villages, which were also small and scattered. After homesteading, and well into the 20th century, the Nooksack continued to depend heavily on fishing, hunting and gathering for food (Richardson 1978:10).

The Nooksack Indian Reservation has since been established in the traditional territory for the descendants of the aboriginal inhabitants of the Nooksack River drainages.

The Upper Skagit Indians

Sociopolitical Organization

Territory

Residents of the Upper Skagit villages were bound by a relationship based on a subsistence economy heavily dependent on deer and elk when compared to their downstream neighbors, the use of the river as a transportation system, and a high instance of intermarriage that strengthened and expanded their available resource base. The Indian Claims Commission described the territory jointly used and occupied by these ten villages, to the exclusion of all other tribes and bands as follows:

> Commencing at the point on the top of Little Mountain... about 1-1/2 miles southeast of Mount Vernon, Washington; thence northwestward, along a straight line passing along the south side of Cleveland School in Mount Vernon to the point of its intersection with Dunbar Road, a distance of approximately 3-6/10 miles; thence due north along a straight line about four miles long, to the point of its intersection with Johnson Road, which point is about 2 miles west of Chuckanut Junction; thence in a northeasterly direction along a straight line, about 3-1/2 miles long to the top of Sterling Hill; thence northeastward along a straight line to the mouth of Shannon Creek on the Baker River; thence in a southeasterly direction to Bacon Peak; thence in a generally easterly direction to the center of Gorge Dam above Newhalem, Washington; thence due south, along a straight line to the south bank of the Cascade River; thence southwestward along a straight line to the mouth of Dan Creek on the Sauk River, which point is about 3 miles northeast of Darrington, Washington; thence northwestward, along a straight line to the crest of the divide separating waters of the Stillaguamish and the Sauk Rivers, which point is intersected by the Skagit-Snohomish County Line; thence generally northward along said divide to Rinker point; thence northwestward, along a straight line to first principal turn, or bend, in Finney Creek, which point is about 4 miles west of the mouth of the Sauk River; thence westward along a straight line to the place of beginning (1974:329).

The Sah-ku-mehu, who inhabited the Sauk and Suiattle Rivers are not included. Collins (1974b:15-19) and others (e.g. Gibbs 1877) consider them as one of the Upper Skagit extended village groups, and include them in general discussions of the Upper Skagit tribe. They are considered separately here as much as possible, as today they constitute a distinct tribal entity. Some of the information and areas of use overlap, due, in part, to considerable intermarriage among the people of the Skagit region. Indian Agent O.C. Upchurch described the intergroup relationships in 1936:

> ...friendly, hunted and fished together, often intermarried, maintained interchange of products and extended inter-tribal social and ceremonial functions...One would expect people of similar language, similar habits and occupation, and similar traditions, confined to this comparatively small area, to maintain not more than one political organization, yet as many as nine existed independently (Upchurch 1936:285-289).

The Upper Skagit spoke the Skagit dialect of of Puget Salish, or Lushootseed, with some further sub-dialectical differences. The subdialects separated the upper, lower and Sauk River regions of the river, but the differences were slight. They spoke and understood each other's dialects without difficulty (Lane and Lane 1977:22).

Villages

The Upper Skagit Tribe consists of the descendants of those people who inhabited the villages along the Skagit, Cascade, and Baker Rivers, and other smaller tributary systems. They have constituted a single tribe since about 1915, although it was recognized long prior that the people of this drainage were interrelated through several aspects of their lives and culture. The term "Upper Skagit" is of modern origin; earlier references are made to the specific villages by name, and are often qualified with "a division of the Skagit" (Indian Claims Commission 1974:333). In pre-treaty times, the Skagit River system above Mt. Vernon supported nine autonomous extended villages. Members of each shared fishing sites, hunting grounds, berry patches, and in the case of some, root plots. Membership to the village was based more strongly on kinship bonds than on actual location of residence: "Individuals related to the sibling group in charge of the house have the right to visit the household and make use of the village resources" (Collins 1974a:111).

As many as forty-one house locations have been identified in the Upper Skagit territory, and these are grouped into the nine village groups. Collins includes a tenth village. However, it is listed as a Sauk-Suiattle extended village and will be discussed under that section (1974b:17; Skagit Tribe v. U. S. 1960). Most of the house locations consisted of one winter house, although they may have had as many as five. Some locations also had summer houses for seasonal use by visiting relations, who came to take part in the harvest of the fish or root resources, or to camp while passing through. Cemeteries were associated with some of the houses. House locations and village boundaries fluctuated, as the river changed and people moved about:

> The location of the Upper Skagit winter houses changed from time to time as the river cut new channels and deserted old beds. When this happened, the planks which formed the walls were removed and taken to the new site. The family graveyard, which was usually located near the house, was also moved (Collins 1974b:16).

Locations were not necessarily chosen for their permanency. Some were built on gravel bars that no longer exist. Anthropologist June Collins reported one house on an island west of Marblemount, the evidence of which has long been washed away by the changing river (1974a:156).

Table 3.4 Historic Upper Skagit villages and camps.

NATIVE NAME	DESCRIPTION
Nook-wa-chah-mish (extended village)	
Soosooteeya	A summer village on the west bank of the Skagit at Mt. Vernon, five houses.
Tsalgahabsh	One large winter house was located north of Mt. Vernon, west of the cemetery.
Sweeweeshub	One large winter house was located south of Burlington on the south bank of the Skagit, east of the railway bridge.
Schachoks	Between Burlington and Sedro Woolley, on the south bank of the Skagit, east of the mouth of Nookachamps Creek, was a summer fishing village; five small houses.
Watsalal	One large winter house was located on Nookachamps Creek near Big Rock. The name means "high ground".
Talahs	One large winter house was located at the village at Big Lake; village was called Tslatlabsh.
Kabalah	A few people lived all year around at this summer village at Lake McMurray.
Kowk-shid	One large winter house was located at Clear Lake.
Mee-see-qua-guilch (extended village)	
Ka-ka-wats-id	One large winter house was located at Sterling.
Wa-wa-lah	East of Sedro Woolley, at Skiyou Slough, there were three small winter houses.
Kakawatsid	There were three large winter houses at Minkler, near Ross Island, west of Hamilton.
Cho-bah-ah-bish (extended village)	
Yacheech	One large winter house at Lyman.
Skwub	One large winter house at Day Creek.
Ba-sloh-a-loh (extended village)	
Sloh	One large winter house was located slightly west of Hamilton.

NATIVE NAME	DESCRIPTION
Sabaliuhk (extended village)	
Lel-skay-dab	One large winter house was located at Birdsview.
Sayk	One small winter house was located at the mouth of Pressentin Creek.
Da-kwi-kub	One small winter house was located just west of the mouth of Finney Creek.
Da-kwi-kub	One small winter house was located just east of the mouth of Finney Creek.
- - - (extended village)	
Bay-cos	One large winter house was located at Cape Horn on the south side of the Skagit River.
Spa-dak	At the Dalles, slightly south and west of Concrete, were two small winter houses.
Too-kalb	West of the mouth of Baker River, five small winter houses were located.
Kalb-ot-sid	One large winter house was located east of the mouth of Baker River.
- - -	One small winter house was located at Baker Lake.
Too-kalb	On the south side of the Skagit, across from Baker River, there was one large winter house.
Ha-heel-way-kid	Two small winter houses were located at Jackman Creek, one each on the east and west banks.
Slay-hoy-ot-sid	At Van Horn, east of Jackman Creek, on the north side of the river, there was one large winter house. Four small summer houses were located on the south side of the river. Both sides were called Slay-hoy-ot-sid.
Ta-kokos	One large winter house and three small summer houses were located at Faber's Ferry, east of Van Horn, on the north side of the Skagit.
Say-lay-ot-sid (extended village)	
Dzi-dzuk-shud	One small winter house was located at the town of Sauk.
Ay-ta-loo-shay	At Rockport were two houses, one to the west and one to the east of the present town.

NATIVE NAME	DESCRIPTION
Shay-ay-ot-sid (extended village)	
Skee-hot-sid	One large winter house was located at the bend in the river, on the north side of the Skagit, west of Rockport.
Po-kwa-leech-tco	One large winter house was located near the mouth of Rocky Creek, between Rockport and Marblemount.
Sah-ee-pop	The largest house in the Skagit territory was located across from Rocky Creek on the south bank of the Skagit. This house could hold all the Upper Skagits for meetings.
Skay-wih (extended village)	
Dzee-shud	This was a winter house large enough to hold twenty different families for meetings of all the inhabitants of these extended villages. It was located near Marblemount.
Skay-wih	One mile east of Marblemount on the Cascade River, there were two houses: a winter house on the north side of the river and a summer house on the south side.
- - -	One summer house was located on the south side of the Cascade River at Boulder Creek.
- - -	On the north side of the Cascade River, there was a large summer house west of Monogram Creek.
- - -	Two small winter houses were located a mile below Diobsud Creek on the west side of the Skagit above Marblemount. Two families lived in each house.
- - -	Across from the mouth of Bacon Creek there was a large winter house that held ten families.
Kwa-bats-absh (extended village)	
- - -	West of Damnation Creek on the north side of the Skagit at a place called "portage", there was a large winter house.
- - -	One small winter house, which housed three families, was located east of Thorton Creek on the north side of the Skagit.
Da-way-lib	A large winter house was located at Newhalem on the north side of the river.

(From Skagit Tribe v. U.S. 1960.)

Collins compiled a list of villages that were reported to her by informants in the 1950s (Skagit Tribe v. U.S. 1960). These were recalled from memory, but a few, as noted, existed previous to her informants' lifetimes and were known to them only through oral history. Villages were situated either to take maximum advantage of the annual salmon runs or at prairies where roots were available (Collins 1974b:45). Descriptions of summer as well as winter locations are included in Table 3.4.

Population

Population estimates made at the time of the treaty vary, and probably include the Sauk and Suiattle River inhabitants. Gibbs estimated 300 Indians on the Skagit River, relying on what others reported, as he did not travel to the upriver territory (Stevens 1855a). Collins suggests that the number of villages and houses reported by her informants could have supported a total population of about 880. After examining evidence regarding the effects of the disease epidemic of 1825, the Indian Claims Commission concluded that "although the Upper Skagits may have numbered 880 members at the beginning of the nineteenth century, it was very probably reduced to 300 by treaty times" (1974:327). At the time, it was common for the survivors of smallpox, if any, to abandon and sometimes burn their villages. According to Snyder (1980:24), three villages in the upper Skagit were deserted, one of which was resettled later.

Seasonal Patterns

The winter homes of the Upper Skagit dotted the banks of the Skagit River and its tributaries, approximately from Clear Lake to the present location of Newhalem. These permanent village sites were frequently situated close to the main fisheries. Salmon was the main food staple of the Upper Skagit people, and the preparation, tending and harvesting of salmon within the river system was a major activity of the spring, summer and fall seasons.

Consistent with the previously discussed subsistence patterns for the upriver Indians, the Upper Skagit relied only in part upon the salmon to provide their dietary needs. Vegetable foods and game were vital, both in achieving the necessary nutritional balance and in offering some variety in the diet. Small groups ventured out on hunting, berrying and root gathering trips throughout the warmer months. Quantities of foods had to be processed and stored for winter consumption. Not all the resources were available locally. Those people who had rights to saltwater clam beaches visited them regularly in the summertime as part of the subsistence round (Collins 1974a:177).

The abundance of resources did not necessarily last throughout the year. In the late winter, food stores were depleted or spoiled, and at times, starvation threatened the upriver people. Travel was difficult during those months and could prevent people from venturing out in search of food. It was important to accumulate sufficient stores of foods during the summer and fall so subsistence activities could be reduced to a minimum in the winter (Lane and Lane 1977:83-85). Lane and Lane also observed: "The mid-winter gap in subsistence activities was to a very considerable degree culturally rather than environmentally determined," and caution:

> The picture that we sometimes come to of people like those of the Skagit region moving about controlled by tradition and locked into an endless and repetitive round contains only a grain of truth and that much warped. In fact, aboriginal Skagit people were faced with multiple choices at almost every turn in their annual round and with the continuous task of making decisions on the basis of complicated bits and pieces of information gathered from near and far (1977:87).

Plant Resources

The mountain environment provided significant food plants that supplemented the diet. The Upper Skagit used all the edible berries found within their territory, and ate the green shoots of some as well (Collins 1974b:57). Lookout, Pugh, and Sauk Mountains, and the south slope of Mt. Baker were some of the localities visited in the fall for mountain blueberries and a variety of others. Red huckleberries were available along the valley of the Cascade River, and salal berries were collected farther upriver. Along the banks of Diobsud Creek, blackcaps were available during the warm months, and small blue huckleberries in August (Blukis Onat and Hollenbeck 1981b). Drying racks were usually erected for on-site preservation at temporary camps. Camps may have been occupied for one to three weeks, or a month.

The Upper Skagit did not clear land for the cultivation of food plants, but used and tended the natural prairie regions where native roots grew (Collins 1974a:186). Sauk Prairie was used by Upper Skagit women who had access to this resource rich location through kinship relationships with members of the Sauk-Suiattle Tribe. A Sauk-Suiattle permanent village and cemetery were located at the prairie, and numerous temporary dwellings were erected by visitors who would stop there to take part in the seasonal harvest of roots and berries. Native blackberries and huckleberries were cultivated in the prairie, which was purposely burned by the women to prevent it from becoming overgrown. The women cultivated root plants that included tiger lily, Indian carrot, an onion flavored bulb, and camas. Potatoes were introduced, and they became an important source of carbohydrate. By treaty times, each village kept a small plot (Indian Claims Commission 1974:327). A native tuber that tasted like a potato was collected on Sauk Prairie and also on Sauk Mountain. After digging roots in August and September, the stems were buried so that they would grow again (Collins 1974a:175). Two kinds of "celery" were also grown and harvested for the stalk.

> In addition to the potatoes and peas, fruit trees were soon acquired by the Indians. The Lower Skagit first planted apple trees which they got from the Whites. From these Indians, the Upper Skagit obtained the tree seedlings, which they planted along the banks of the river at the village of sbaleuq^{u} (near the present town of Concrete) and the village of Sauk (at the mouth of the tributary of the same name) (Collins 1974a:189).

Roots were also gathered at German Prairie and Warner's Prairie in the area north of Sedro Woolley (Collins 1974b:55), and wappato was found near Big Lake. These were privately owned plots, at which outsiders could not dig

unless they had obtained permission. Another natural prairie was located south of the present town of Coupeville on Whidbey Island, more distant from the described Upper Skagit territory, but still within their seasonal use area:

> The prairie...on Whidbey Island is the largest in the area and is not parcelled out in individual plots. Informants explain that this is not because of the great quantity of roots which grow there. Relatives who visit the Indians living at nearby villages can dig anywhere in the area. They are, however, instructed by the local inhabitants in the procedure of reburying the stems so as to assure new crops (Collins 1974a:176).

In addition, the Upper Skagit travelled to Lake Washington which was famous among them for the wappato and other bulbs that grew there. Sword, bracken, and another type of fern were gathered from the north side of the river near Warner's Prairie and near Birdsview. Ferns were also found up the Suiattle River (Collins 1974b:55; Skagit Tribe v. U.S. 1960). Roots were baked in pits or boiled with meats in a water filled basket heated by stones (Collins 1974b:56). An edible lichen was found near Lyman where it grew on the trunks of trees.

Basket materials were collected where they were of good quality and easily available. The banks of the Suiattle River were good places to find cedar roots for basketry; they were usually collected where exposed in an eroding creek or river bank. Cattails for mat weaving were once collected in quantity around Lyman. The materials were gathered and dried, and taken back to the village to be woven into mats, clothing and baskets. The Upper Skagit women purchased beargrass from the Snoqualmies to use in basket making (Collins 1974b:68).

Animal Resources

Deer and elk meat constituted a large portion of the diet of the Upper Skagit River residents. These were hunted in the fall both in the lower valleys, such as around Hamilton, and in the adjacent high country. Bows and arrows and traps were used. One technique that was effective was to drive an elk herd into a closed canyon. This was reportedly done in the area of Cow Heaven, where elk were driven into the rocky walls in the direction of Park Buttes. This technique was undoubtedly used in other areas of similar configuration. Deer were hunted on Lookout Mountain and Park Buttes, and deer and elk in the area of Schriebers Meadow. The general vicinity of Mt. Baker was an excellent hunting area for goat, bear and deer (Blukis Onat and Hollenbeck 1981b). Spier reported "it is probable that all of the high ground eastward of Mt. Baker was common hunting territory of the Nooksack, interior Skagit, northern Okanogan, Methow and Chelan"; and Teit comments that the Thompson Indians, whose villages were on the Fraser River, hunted southward to the headwaters of the Nooksack and the Skagit Rivers (Spier 1936:39).

In addition, goat, black bear, grizzly bear, beaver, snowshoe rabbit, fisher, raccoon, land otter and a variety of ducks were hunted with bows and arrows, snares or traps, as appropriate. Mountain goats were hunted for food, but were also important for their wool. The hunting grounds in the Upper Skagit territory included the area around Newhalem and the present Ross Dam, Bacon

Peak, Illabot Peak, and a place called High Peak, the location of which is uncertain (Blukis Onat and Hollenbeck 1981b). Groups of men took part in organized goat drives (Brooks 1930). Bears and mountain goats were hunted in the higher territory above Baker Lake, and on the south slope of Mt. Baker where deer were found as well. Additional hunting areas can be inferred from the current data on game distribution (Figure 1.2), assuming these are representative of the past.

Where multiple resources were found, the seasonal round subsistence pattern maximized opportunities for exploitation. The fishing locations of Illabot Creek and Baker Lake were hunted for duck and beaver, respectively. Upper Skagits freely used the resources, notably duck, available at Lake McMurray in concert with the Kikiallus Indians (Indian Claims Commission 1974:328, 341). Marten, trapped for furs, were found along the North Fork of the Sauk (Blukis Onat and Hollenbeck 1981b:21-36).

> Cow Heaven is in some ways similar to Schreiber's Meadow in its large size, frequency and multiplicity of use although it is probably an old and natural upland prairie. At one time it was ideal for spring bear (the flesh being far superior in the high country away from river fish-feeding grounds). Marmot were trapped there as well...At one time it was best known as an elk hunting area...Gathering is very important in this region throughout the warm months. Along the head of Rocky Creek and on Cow Heaven cedar roots were dug where they are exposed by the creek water. On the meadow and in the Buttes, mountain berries flourish. Along the routes to the meadow (there are three trails to it) are salmonberries, elderberries, native blackberries, 'short' and 'tall' blueberries and salal (Blukis Onat and Hollenbeck 1981b:25-26).

Many of the Upper Skagit women were weavers. Mountain goat and dog wools were woven on looms into blankets. As previously mentioned, men hunted mountain goats for their wool, but the wool was also gathered by women from the hillsides in the spring and summer when goats were shedding (Thompson 1970; Collins 1974b). Dogs were kept in the villages and sheared for their hair (Collins 1974b:26).

Fish Resources

Salmon fishing was the most important subsistence activity of the Upper Skagit people. This is illustrated in their selection of village sites. Table 3.4, a list of villages, also indicates some of the important fishing locations along the river.

Fishing techniques varied according to the species of fish present. Specific creeks were known for certain annual fish migration. Baker River supported the only significant sockeye run in the Skagit system, whereas Nookachamps and Loretta Creeks were fished for silver salmon. Day Creek was known for its run of chum. Cascade Falls was probably the most productive area of the Skagit system for spring and silver salmon and fall steelhead (the falls were removed in 1968 to improve fish migration). Fall steelhead from Jordan, Corkindale and Rocky Creeks were popular as well. Another important fishery was located at

Illabot Creek, where salmon spawn in the upper reaches (Blukis Onat and Hollenbeck 1981b:21-32).

Nets stretched across the river to catch fish swimming upstream, were used on the main river. This was done at night, probably because the nets were less visible in the water. The men would use torches for light as they worked the nets. In a description of trout fishing on the Cascade River, Collins tells us that salmon eggs were smashed into the willow fibers of the net for bait (1974b:46). Weirs, commonly used at the mouths of tributaries, were not used on the wide and swift mainstreams. The Upper Skagit also fished along the Sauk and Suiattle Rivers and maintained fish traps at Miller's Crossing (near Hilt Creek), and Straight Creek, on those rivers, respectively. Another fishtrap location was reported on Clark Creek, a tributary to the Cascade (Blukis Onat and Hollenbeck 1981b:21-32). The constructed tripod weirs would be washed away by the increased stream flow from meltwater in June, and had to be replaced each year in time for the fall run.

A man at a village near Rockport specialized in making dipnets, which were used at the fishery near Concrete: "Canoes lined up in order of precedence before this man's house, each boatload waiting for a dip net. Having got the net, each proceeded, still in order, downriver to the present town of Concrete, where each canoe had its turn at netting salmon along the steep bank" (Collins 1974b:46-47). Dip nets were also employed in the sockeye fishery across the river from Hamilton. Spearing was another technique that was effectively used above Marblemount and at Cascade Falls. A special three-pronged spear was made of ironwood with antler, horn or bone tips.

The saltwater fish and shellfish resources played a lesser but important role to salmon in the subsistence economy. "People living upriver with relatives on salt-water who own rights to clam beaches visit them regularly in the summertime as part of the subsistence round" (Collins 1974a:177). They would travel down the Skagit and beyond to Whidbey Island, where clams were taken near Utsulady Bay. Samish Island also had a clamming beach on the north side, and oysters were taken near Edison on the adjacent mainland. Shellfish were smoked for preservation, and were threaded onto strings and stored. The winter stores were supplemented by trading their dried venison for more smoked shellfish from coastal tribes (Collins 1974b:51-52). Herring, smelt, flounder, dogfish and cod were among those regularly taken at the coastal fisheries. Some Upper Skagit also engaged in seal or porpoise hunting (Collins 1949).

The Upper Skagit preferred their inland foods as dietary staples. Collins remarks: "Women who married into the villages of the outer Washington coast did not like the diet, which was heavy in seal oil" (1974b:99). The Indian agent in charge of the temporary reservation on Penn Cove made a similar observation (Fay 1856b; Lane 1973:5).

Communication and Travel

Communication was active between the villages along the Skagit, and extended up the Sauk and over to the Stillaguamish system. Travel by canoe occurred along all major waterways. The Skagit River was navigable throughout the Upper Skagit territory, and there is evidence that the Thompson Indians entered the region by way of the river, after a portage from the Fraser in the interior of

British Columbia. On the Skagit, between the place called Portage, near Damnation Creek, and Mt. Vernon, the route was unimpeded. Near Mt. Vernon, canoes were portaged again around the major log jam. Once beyond, the Upper Skagits had open access to the saltwater shores of Puget Sound and the adjacent islands. Another route taken to the Sound was by way of the Sauk River, with a portage over to the Stillaguamish system near Darrington.

Portages were difficult but necessary, more so in the winter. Along the Skagit system, the impediments to canoe travel generally delineated the territory of major settlement. There was a large winter house near Damnation Creek at Portage, and only two house locations above. Above Cascade Falls, near Irene Creek on the Cascade River, there were two summer houses. A canoe could travel along the Sauk River to the falls near Bedal; and the Suiattle was navigable at least to Lime Creek (Snyder 1980:30; Linsley 1981).

The upriver canoes were poled, not paddled (Collins 1974b:13). The shovel-nosed style was used, because it would not swing in the current as the keeled boats would. There was also a special small canoe that was used specifically for duck hunting (Collins 1974b:64). When the Upper Skagit went down to the coast, they traded the river type for the more efficient saltwater type.

Not all Upper Skagit were skilled at controlling the saltwater style. Snyder elaborates regarding this and other aspects of the culture in which knowledge was limited to family traditions:

> Skagits professed that one's knowledge was restricted to a certain segment of Skagit technology. One man gave an amusing description of upriver Indians trying to paddle down-river canoes, in order to demonstrate this point. Another Skagit, a fisherman, was unable to tell me about the construction of a harpoon because it was not a part of his family's lore. Groups who hunted duck in one fashion were not familiar enough with the way it was done for the same species a mile or two distant from their grounds to give any details about it (1964:111).

A man who lived near Concrete, at the village of s.báliuq^{w}, was skilled at making the saltwater canoes, and would do so and sell them downriver (Collins 1974b:64). Many of the things made of cedar may have been made in the upriver territory, as these people had better access to cedar, at least in the ethnographic period after settlement began in the lower valleys.

Canoes were preferred, but were by no means the only mode of travel. Overland trails include the portages, as well as access to the higher mountainous areas and to eastern Washington tribes. The Upper Skagit were almost as close, in terms of travelling time, to the Plateau people as they were to the saltwater people (Collins 1974a:101). The farther upriver a group lived, the greater the influence caused by contact and intermarriage with their Plateau neighbors.

The Upper Skagit, and many other tribes who used the Skagit drainage system, crossed the crest at the various passes recognized today. Trans-Cascade travel was a common occurrence, but individuals set out on this kind of a journey once a year or less (Collins 1974b:112). Once beyond the points where canoes were

feasible, people would often walk in streambeds which were easier to negotiate than the heavily forested regions. Drainages led up to the mountain passes; Cascade Pass led them directly down the Stehekin River to Lake Chelan and, if desired, on down the Columbia. According to Collins, the trip could take up to six weeks. In the winter, they used snowshoes. She also remarks that the Upper Skagit kept a canoe hidden at Lake Chelan for their use (1974b:13). There were also passes accessible through the Sauk drainage, Indian and Kaiwhat Passes among them. Of those mentioned, Indian Pass was the easiest to negotiate (Linsley 1981:225, 233).

Travel through the region went in both directions; there was possibly more movement into the Skagit from the east and northeast than away from it. The Wenatchi Indians, occupants of the Wenatchee, Entiat and Chelan drainages in eastern Washington, also travelled into Upper Skagit territory. The two groups often intermarried and shared in subsistence and social activities. Thompson Indians who travelled down in the winter would sometimes stay through the summer to hunt and fish in this resource-rich environment.

> In terms of culture history, the evidence suggests that the valley of the Skagit with its rich fishing sites was desirable to neighboring peoples. Movements of population into the valley occurred from north to south from the Fraser River to the Skagit as an interior route, as well as...from west to east from Vancouver Island and the adjacent British Columbia mainland and saltwater villages including some to the south on the Washington coast up the Skagit, and from west to east [sic] from the Plateau across the mountain passes down the Skagit (Collins 1974b:12).

Collins (1974b:11) also reports an overland trail that connected an Upper Skagit village with a Nooksack community, shortening the distance between them.

The Reservation Era

The Upper Skagit Indians were party to the Treaty of Point Elliot, signed in January of 1855. Four of the ten villages that were considered sub-groups of the "Upper Skagit" were named in the preamble of the treaty, and have associated signatories. The remaining six were assumed to be represented under the general heading of "and other allied and subordinate tribes and bands." Goliah is the name given in the list of signatories as the Chief of the Skagits and other allied tribes.

Under the Treaty, four reservations were established: Port Madison, Lummi, Swinomish and Snohomish. The people of the Skagit River drainage were assigned to the Swinomish Reservation. Many, however, did not move, preferring to stay within their upriver territory, close to their home villages and hunting grounds. In 1936, Agent Upchurch reported:

> The Swinomish people with whom we deal today are a composite of remnants or fragments of seven originally distinct bands of Coast Salishan stock... The Upper Skagits, a term now used to include such bands as the Sah'-ku-mehu, Nook-wah-chah-mish, Spa-mee-hwu, and Me-see'-qua-guilch, occupied the valley of the Skagit River and its tributaries from the vicinity of what is now Sedro-Woolley east to the mountains. Very few representatives of the Upper Skagit bands moved down to the Swinomish Reservation and are now included in our present discussion (1936:285).

The Sauk-Suiattle Indians

Sociopolitical Organization

Territory

In a petition filed with the Court of Claims on February 11, 1930 by the Suiattle Tribe of Indians, their ancestral territory was described as inclusive of the mouth of Baker River, Baker Lake and north to the Canadian border, east to the Cascade Crest, south to Indian Pass, west to the Sauk River and northwesterly to and including the point of beginning (Anonymous 1973:54A). This apparently includes a broad expanse of territory that the Suiattle, or Sauk-Suiattle, did not use to the exclusion of other bands. It is, however, probably indicative of the range through which they regularly traversed.

More specifically, the territory of the Sauk-Suiattle is commonly viewed as inclusive of the valleys of both the Sauk and Suiattle Rivers, their tributary streams and headwaters, and the Cascade Crest from approximately Cascade Pass to Indian Pass.

Since pre-treaty times, the Sauk-Suiattle have continuously resided in the drainages of the Sauk and Suiattle Rivers. In 1853, "Sock-a-muke" Indians were reported as occupying the headwaters of the Skagit: 250 souls (Jones 1973:9A). The description of Sauk territory was qualified with the following remarks:

> ... I have taken that point at which they make their winter quarters; for in the summer they have no permanent location, but travel from point to point, stopping at those places which furnish them most readily a supply of food (Jones 1973:9A)

The Sauk-Suiattle spoke the Skagit dialect of Lushootseed in common with the Stillaguamish and other Skagit River inhabitants. Within this subdivision, three other dialectic differences are recognized for the Skagit River: Lower Skagit spoken among the saltwater people; Upper Skagit spoken from Mt. Vernon on up; and Sauk-Suiattle (Lane and Lane 1977:22). The dialects were mutually intelligable. The Sauk-Suiattle were commonly in contact with the neighboring tribes. Intermarriage between bands served to obscure the territorial divisions, if they ever existed. The Sauk-Suiattle shared resources with the residents of the mainstem Skagit and Stillaguamish Rivers as well as with the Wenatchi Indians of eastern Washington.

Villages

The residents of the Sauk River country were variously known as Sakuhehu, Sock-a-muke, Sock-a-bute, Sak-ka-ma-hu, or Sawk. In the early accounts and records, they were sometimes considered a sub-group of the larger Upper Skagit Tribe, primarily due to their location along an upper tributary of the Skagit River, Even so, the Sakemehu were usually distinguished from residents of the main Skagit. The Sauk Indians mantained permanent winter houses along the Sauk River. Anthropologist June Collins identified four house locations that could be attributed to the extended village of sáḵʷbixʷ ("people of digging roots"). (1974b:19). She elaborates on one of the locations:

Table 3.5 Historic Sauk-Suiattle villages and camps.

NATIVE NAME	DESCRIPTION
sák^{w}bix^{w}	A large winter house was located at the mouth of the Sauk River. This house was large enough to serve as a gathering place for all the Sauk River people.
- - -	At Sauk Prairie, on the east side of the Sauk River, were four winter houses.
- - -	A summer house was located at Bedal, near the confluence of the North and South Forks.
s?uyáx'bix	This refers to a summer camp along the Suiattle River.
- - -	Just north of the mouth of the Suiattle was a camping site for people travelling up the Sauk and Suiattle Rivers. it was probably once a house site.
- - -	There was also a camp site on the south bank of the Suiattle at its confluence with the Sauk.
- - -	There was a village site and a burial ground in the vicinity of Darrington.
- - -	There were temporary camps in the mountains: along the ridge between the Suiattle and Whitechuck Rivers; along the Pacific Crest from Glacier Peak down to White Pass and down to Indian Pass; and a camp at Squire Pass, at the head of Squire Creek.

(Bruseth 1951; Collins 1974b; Lane 1973d; Sampson 1972.)

> A winter house large enough to hold gatherings of all the people living on the Sauk River had stood here [at the mouth of the Sauk on the south bank of the Skagit] before the lifetime of my informants. Alice Campbell's mother had told her about this house...(1974b:19).

Four houses were located at Sauk Prairie, which became known as the main village of the Sauk river people.

> The first white men to visit Sauk Prairie were surprised at the number of Indians living there. The sloughs were full of canoes, and houses, shacks and camps like a town stood on the banks. There were big racks of roots drying in the sun - women weaving mats - salmon baking and smoking, and long barbeque pits with bear and deer meat roasting (Bruseth 1972:6).

The villages also consisted of several smaller dwellings. Some, such as the cat-tail mat lodges, were highly portable. They were packed up and moved as the owners continued on their seasonal food quest. Small wooden structures resembling the large cedar plank houses, were also constructed at the popular fishing sites (Collins 1974b). These were less portable than mat houses, and would not have been so readily disassembled. In addition, Collins noted that the Upper Skagit people (with whom she includes the Sauk River people) used sweathouses, but these were not as important here as they were, for example, to the Plateau Indians (1974b). Thus, a myriad of dwellings and structures may have given the earliest visitors to Sauk Prairie the impression of a small "town."

Temporary camps dotted the valley and tributary streams, strategically located to exploit a combination of major resources. The Sauk River Indians did not inhabit the Suiattle River drainage on a permanent basis until the last decade of the 1800s (Collins 1974b:19). Before that, they utilized this drainage on a seasonal basis, and occupied camps at the mouths of several tributary streams which were old and favored fishing sites (Lane 1973d:10).

Camps were located to take advantage of other resources as well. Sheltered locations in the vicinity of travel routes, berrying grounds or mountain goat habitat, for example, were all likely camping locales for the Sauk-Suiattle during the warmer months of the year (Table 3.5).

Population

By the time of the treaty, the upper system of the Skagit River, including the Sauk, had not been explored and accurately mapped. Governor Stevens and his representatives were aware that there were several Indian villages upriver, however, what information they had was obtained from accounts given by Indians living on the lower portion of the Skagit River. As a consequence, the number of people and villages and their locations in the upper stretches of the rivers were largely misunderstood and misrepresented in many of the early documents. For the most part, early documentation does not consistently distinguish between Upper Skagit, Sauk or Suaittle River inhabitants.

In 1853, the Indian agent for the Puget Sound district reported the population for the Sauk River villages as 200 (Lane 1973d:1; Starling 1853). In a slightly later report, George Gibbs estimated about 300 Indians occupied the main Skagit River, and about the same number on the several branches of the Skagit combined (Stevens 1855a:436). Lane and Lane suggested that most of the population estimates for the upriver groups are considerably low. Although the native population was reduced as a result of the hardships (including liquor and disease) introduced by the whites, Lane and Lane suggest that the number of Sauk River residents during the 1870s could have been as high as 500 (1977:40).

Seasonal Patterns

Consistent with the seasonal pattern followed by most of the northwestern Washington Indians, the Sauk-Suiattle moved throughout their territory in an annual food quest. The first green shoots of berries and other plants were gathered in the spring and many were eaten fresh, a welcome change to the dried, and by that time meager, food supplies that had served the winter. The most important resource which they prepared to harvest in the spring was anadromous fish. This activity took precedence over all other endeavors during the height of the season. The salmon harvest involved most of the Sauk people through the months of June and July, starting with the building of the weirs and the catching and drying of early chinook.

With the coming of fall, the attention of the women turned to the root and berry harvest, while the men took part in hunting excursions to the uplands. During this time, there were large gatherings at Sauk Prairie, a well utilized root ground. Several neighboring groups whose members owned rights to the root plots, arrived, erected temporary shelters, and began to dig and process the roots.

The co-utilization of the Sauk area was repaid by way of reciprocal rights to adjacent territories. The Sauk-Suiattle utilized saltwater fisheries and the clam beds of the Sound, and in historic times the beaches at Tulalip were visited for shellfish. They travelled down the Stillaguamish to reach this area of the Sound, and were regular overnight visitors at the Stillaguamish village, Skabalko, at the river confluence near Arlington (Bruseth 1972). Other rich shellfish grounds included Padilla Bay, March Point, Fidalgo Bay, Similk Bay, Whidbey Island and the western beaches of Camano Island. Upriver people travelled to the beaches in the summer, and what was not eaten fresh was smoked over fires and stored for winter use.

By winter, most of the staples to last the next three months had been gathered and put away. During the coldest months, the Sauk River Indians were primarily confined to their own territory. Travel was limited, especially downstream, because ice frequently blocked the river corridor. Some travel to the mountains occurred in winter, made easier with the use of snowshoes. The Sauk-Suiattle people sustained close relations with their Plateau neighbors, and during the winter these groups may have maintained some communication across the Cascades (Lane 1973:8).

Plant Resources

Sauk Prairie was known for its edible roots and berries, which were tended and cultivated on a regular basis. Collins notes that these root crops were shared with the Stillaguamish and probably also with the Upper Skagit (1974b:11). In the fall, the winter village at Sauk Prairie expanded to include the many families who arrived for the harvest and processing period. The visitors erected temporary shelters of cat-tail mats, which they brought with them. Root digging activities are described by Collins:

> The most unusual feature of plant use was the semidomestication by the Upper Skagit of two plants, the tiger lily (cág^{w}ic) and the wild carrot (cág^{w}ak). The tiger lily bulb is described as similar to white potatoes; the wild carrot is sweet. These plants were maintained in several prairie areas, two adjacent ones, German Prairie and Warner's Prairie, north of Sedro Woolley near the Samish village of duwáhah and one at the village of bakálb on the Sauk River. In these meadows, Upper Skagit women planted the stems of the tiger lily and the wild carrot. As soon as the blossoms dried up in August, they dug the roots and buried the stems. They weeded the plots after taking the roots. Camas (c'ábid) also grew in these same plots. I did not learn whether or not the women replanted this plant. Digging in one of these plots all day, a strong woman, according to Alice Campbell, could get ten roots; a weak one, six (1974b:55).

Large quantities of roots were baked in earth ovens. The roots were then pounded and formed into cakes, to be put away for later consumption. Other plants were gathered in season. Huckleberries, blackberries and elderberries were picked in the fall, and then stored in cool, damp places for short periods, or sun dried for longer storage. In later years after the establishment of trading posts, Sauk-Suiattle women exchanged berries for European goods such as sugar and flour. After acquiring the staples they needed, the women were usually able to sell the surplus. Linsley recounted in his journal the purchase of eight quarts of wild strawberries at Sauk Prairie (1981). Pugh Mountain was one berrying location used by Sauk-Suiattle women at the turn of the century that is still used today (Fish personal communication 1985).

The seasonal plant gathering frequently included the collection of cedar bark, put to a multitude of uses in the Indian home. Baskets for cooking, berry collecting and storage were made of strips of cedar bark. The women removed the bark from the tree trunks in the fall when the sap was running. The outer bark was separated, leaving the inner bark which was soft and pliable. It was rolled up and taken back to the village where, in the winter, the women busied themselves with basketry tasks.

> Up creeks like Downey and Sulphur Creek there are cedar trees which still show the scars of having bark stripped from them for making baskets. They serve as a reminder that the amount of fish or game which people collected and cured in the mountains away from winter camps depended in part upon the number of baskets which could be provided to transport the catch (Lane and Lane 1977).

Additional native plant technology included the use of several of the forest and river valley species for medicines. Kinnikinnick leaves were also gathered, dried, and used for smoking, before the introduction of tobacco.

Animal Resources

The legends of the Sauk indicate that Monte Cristo Lake was a good hunting ground. The Sauk River people hunted elk in the Monte Cristo area, specifically near Barlow Pass. A variety of hunting techniques were employed. Herding animals and running them off cliffs was a technique used in this vicinity, obviously one which involved a number of men in the hunting party (Bruseth 1951). Groups would gather near Darrington before embarking on hunting trips farther up the Sauk and White Chuck Rivers. People from the Stillaguamish were frequently invited to join them.

> Here [southwest of Darrington] groups of families from the upper Stillaguamish and Sauk gathered in late summer - later to divide up, and spread up the rivers and creeks and into the high mountains, to hunt big game and pick berries, returning in the fall to divide the booty, and to hold big celebrations, and then to depart to the more permanent winter camps down river (Bruseth 1972:7).

Hunting parties would camp in temporary shelters in the mountains. Bruseth claims to have seen remains of Indian hunting camps in the mountains. He described animal bones scattered about the ground surface, being under the impression that these were the remains of butchering activities (although no further evidence is presented regarding how he reached this conclusion). Bruseth also reported having observed large fire pits, attributed to "council camps," rather than hunting camps. He claims that houses built by the Indians in the mountain meadows left triangular depressions, some of which measure 20 feet wide at the front, and taper back to a point at 25 to 30 feet. These houses were covered with sod, and skins covered the entrance (Bruseth 1972:7).

Bruseth (1972:11) also reported finding remnants of loop snares set for mountain goats on the goat trails along cliff ledges. His description does not provide locations, but present day goat population distribution data may be helpful in hypothesizing about areas of this type of use (see Figure 1.2).

Fish Resources

Salmon and steelhead spawn in both the Sauk and Suiattle Rivers as well as several of the tributary streams. As the rivers swelled with the return of anadromous fish, camps were temporarily set up at favored fishing locations. Because the Sauk River territory was first visited by whites relatively late, specific fishing sites used by the Indians prior to the treaty are not well documented. Much of what is known today was gathered for the first time in the 1950s, from elderly Indians by anthropologist Sally Snyder (Lane 1973d:10). The majority of the activity seems to have been centered in tributaries of the Suiattle River. Fishing in the Suiattle itself was not favored because the river is often milky from glacial sediments (Lane and Lane 1977). A camp at Buck Creek was occupied in June and July for the spring chinook run. Most of the major tributaries appear to have supported fish camps:

> ...present members of the tribe specifically...mention the following creeks, all tributaries of the Suiattle River as old and favored fishing sites of the Sauk Indians. Big Creek, Tenas Creek and Straight Creek were particularly noted as steelhead streams. Milk Creek was a favorite place for taking Dolly Varden. Springs were taken in Downey and Tenas Creek. Other favorite streams included Lime Creek and Sulphur Creek (Lane 1973d:10).

Fishing also took place far up the Sauk River; one favorite place for steelhead was Bedal Creek (Lane 1973d:11). Steelhead was the most important food fish of the Skagit River people, principally due to its availability throughout the year. The late fall run would reach Sauk River in midwinter and remain in the upper reaches throughout the season (Lane and Lane 1977:73). The Sauk-Suiattle shared these locations with other friendly Indians, particularly the Upper Skagit and Stillaguamish, with whom they were related through marriage. Throughout the system, migrant anadromous fish were available in the major streams year around. The Cascade River supported many fine fishing locations and was used by the Sauk-Suiattle group, as was Baker River and Baker Lake, which had the only major sockeye run in the area.

Dipnets, spears and traps of several varieties were used at the various locations depending upon the particular fishery. Traps were built across tributary streams, one type for salmon and another for trout. One weir was located about seven miles from the mouth of the Sauk. It may have been on Rinker, or possibly on White Creek, both suitable spawning streams. A list of additional fisheries of the Sauk and Suiattle Rivers are presented as Table 3.6.

Fish were dried by a process of smoke curing. Smokehouses were built at all the important fishing locations. One Sauk-Suiattle elder shared a couple of recipes for roasting fish livers above an open fire (Lane 1973d). Just as the other resources that were diligently collected to provide winter provisions, the processed fish were carefully packed away. Chum and coho taken in the upper reaches of the river system had better keeping qualities, being much leaner when caught so far upstream. Chinook taken upstream were relatively fatty, and did not preserve as well (Lane and Lane 1977:70).

Communication and Travel

The Sauk River inhabitants shared cultural traits and marriage ties with their neighbors to the east, the Chelan, Entiat and Wenatchi bands. Their languages differed, but there were undoubtedly bilingual speakers within each band. Several of the names for specific places within Sauk-Suiattle territory have their roots in words of the Sahaptin language, the language of the native Plateau inhabitants (Bruseth 1972).

A system of trade involving goods from both east and west of Sauk-Suiattle territory was established. Horses came from the eastside. Shells for money, shellfish and saltwater fish from the west moved upriver and continued east. The Indians downriver preferred some upriver salmon because it was less oily and preserved better through the winter. Sea run cutthroat was at times

Table 3.6 Historic Sauk-Suiattle fishing areas.

NATIVE NAME	DESCRIPTION
Rockport Area	
sq'ix^{w}ucid	The name means "whitefish." Located on the north side of the Skagit River at the bend west of Rockport.
Sakumehu	Approximately located on the south bank of the Skagit, west side of the mouth of the Sauk. Shifts of the mouth of the Sauk makes this location uncertain. The mouth was probably further upstream in earlier times.
(bis)ílocid	At the mouth of the Sauk. May be sq'ix^{w}ucid.
Sauk River Area	
- - -	At the mouth of Hilt Creek; a place for spear fishing salmon.
si?íšil	This place was also known as "Millers Place," possibly just below the mouth of Flume Creek. A tripod weir was built here to catch chinook, coho, pink and chum.
xóxocud	Basket traps for salmon were placed at the Flume Creek rapids, one half mile from the mouth.
- - -	The fishing site at Rinker Creek has been dammed and destroyed.
sakwebexw	A fishing location near Sauk Prairie, on flats south of the mouth of the Suiattle River. There were tripod weir sites along the Sauk River particularly in July for chinook.
- - -	Southeast of Darrington on the west bank of the Sauk.
- - -	At the mouth of the Whitechuck River.
- - -	At the mouth of Lyle Creek and Beaver Lake.
- - -	This place was across from the mouth of Falls Creek. Salmon were taken here with gaff hooks and dip nets.
- - -	Trout were caught one mile above the North Fork Falls. Salmon were fished below the falls.
- - -	There was a fishtrap for trout on the North Fork of the Sauk below Lost Creek.
- - -	Salmon were fished at the falls below Elliot Creek, the limit of salmon migration.

NATIVE NAME	DESCRIPTION
Sulattle Area	
- - -	The Johnny Price Homestead on the north bank of the Sulattle above the mouth of Tenas Creek.
- - -	The Johnny Sauk Homestead, on the Sulattle River across from the mouth of Straight Creek, was another location for fishing.
tq'satatxw	At the Isaac Brown Homestead, on the west bank of the mouth of Buck Creek, people fished for the early run of chinook and coho on Buck Creek in June and July.
- - -	The Captain Moses Tlatmouse Homestead on the north bank of the Sulattle at Captain Creek.
- - -	The Enick Homestead, on the south side of the Sulattle northwest of Box Mountain, was a fishing location. This was also the head of canoe travel on the trail to Lake Chelan via Sulattle Pass. Chinook, coho, steelhead and trout were taken in this vicinity.
- - -	Dolly Varden were fished in Downey Creek.

(From Lane and Lane 1977.)

available in larger quantities from the delta region, and it was traded inland. Grasses for weaving nets were available in the mountains and these were traded from inland villages to the downriver people. The upriver Indians used their hunting abilities and access to elk and mountain goats to obtain trading stock. Snyder noted that large cedars were abundant in the upriver country and that the inland Indians made saltwater canoes for trade to saltwater people (Lane and Lane 1977:58).

Three routes to cross the Cascades may have been employed. The one up the Cascade River and via Cascade Pass, led to Lake Chelan and eventually to the Columbia River. Another trail led from the headwaters of Sulphur Creek across Kaiwhat Pass. In 1870, an explorer for the Northern Pacific Railroad, D. C. Linsley, observed that there was an old Indian trail passing through at the lowest point (1981). A third trail followed the Sauk River to Indian Pass and connected with the Wenatchee River on the eastside. Linsley indicated in his journal that the latter trail was the easiest (Linsley 1981:225, 233). When the early surveyors and explorers began looking for help to guide them across the Cascades, they came to realize that the Indians were intimately familiar with mountain travel.

The Skagit, Sauk and Suiattle Rivers were all navigable by canoe. The shovel-nosed type was used in these river systems. In 1870, D. C. Linsley travelled up the Suiattle, accompanied by his Indian guides. Linsley's journal entry of June 4, has them reaching Lime Creek and camping there, noting that it was as far as they could proceed by canoe. He also commented that the river was particularly high at the time. Linsley described how the Indians controlled their canoes by poling, not paddling, although they did have paddles with them which they used on occasion (Linsley 1981:223). Bruseth further elaborated: "Some of the canoes used on the Sauk were quite large, up to 50 feet long with 34 to 36 inch beam. They were generally poled by four men and could carry loads of several hundred pounds" (1972:10). On the Sauk River, Linsley was able to use canoes as far up as the mouth of the north fork (1981:240).

When overland travel was necessary, walking in the stream beds was preferred, where the obstructions from vegetation were not great. Linsley remarked that they were "several times compelled by swollen streams (Downey Creek) to leave the route along the bottoms and cross spurs of the bordering hills" (1981:230). Today, Indians hiking in the forest still prefer the stream beds to fighting the thick alder and Devil's club common along the Suiattle, except at the high elevations where relatively unobstructed ridges can be followed (Snyder 1981:291). There are thousands of streams feeding the main rivers, providing many choices for routes of travel.

Horses were used for trips to the high country and across to the eastside. The Sauk-Suiattle had horses, but did not have the fodder necessary to keep them in large numbers. "When the first white man settled Sauk Prairie they found the Indians using ponies for riding and for dragging wood into camps" (Bruseth 1972:6). The Sauk-Suiattle people were never known as "horse Indians," as were the Snoqualmie.

Consistent with the treaty policies at that time, a head chief was appointed to sign for all the Skagit system drainages. The United States Government clearly considered that Goliah's mark, listed as "Chief of the Skagits and other allied tribes" stood as consent for all (Lane and Lane 1977:10). Partially as a result of treaty negotiations, the Sauk have been grouped with the Upper Skagit and are often called a subordinate band. Throughout various reports of the middle 1800s, however, they were referred to separately and distinctly from other groups living along the main branch of the river (Lane 1973d:3). The "Sah-ku-mehu" are listed in the preamble of the Treaty of Point Elliot, and the United States considered them party to that treaty. In addition to Goliah, Dahtl-de-min, "sub-chief of the Sah-ku-meh-hu," is listed as a treaty signator. His affiliation with that tribe has been a matter of controversy during later examinations of the treaty. The Sauk-Suiattle have therefore claimed at various times over the past 125 years that they did not sign the treaty, and that, in fact, they refused to sign upon hearing the nature of agreement they were being asked to enter. This opinion was voiced when the upper reaches of the Skagit River were being surveyed by the Government Land Office in the 1880s:

> On the 19th day of October a large number of the Skagit and Sauk Indians came in [to camp at the mouth of the Baker River] under the leadership of John River-was-kau [?] and Johnny Campbell the chief of all the Indians on the River... I had a long talk with these chiefs who said in substance that the land was theirs, that they had never ceded away their right to it, that they want the land and do not want any-body to come upon it except such as they are pleased to allow. Their claim was to all the land above Baker River; they objected to the surveys because they know if the land was surveyed white men would come and settle on it, and own it as they did in the lower river (Lymons 1881:4-5).

Eventually, the aboriginal territory of the Sauk River Indians was surveyed and settled by whites.

There was to be a central reservation provided, to which the Indians would be required to move after ratification of the Treaty. The Sauk-Suiattle and others living on tributaries and on the Skagit proper, were provided a temporary reservation on Whidbey Island in 1855, as an attempt was made to separate "friendly" from "nonfriendly" tribes during the hostilities of 1855-56. Indians were ordered to come to the reservations voluntarily or risk being taken for combatants. There were two locations set up as temporary reservations: Penn Cove for the Skagit River inhabitants and Holmes Harbor for the Stillaguamish. Some residents of the Sauk-Suiattle drainages apparently went to each of these.

The upper drainages were blocked by ice in the winter of 1855-56, preventing those upriver Indians from reporting directly to the reservations. In February of 1856, Captain R. C. Fay reported that the Penn Cove Reserve was quiet except for the arrival of about 100 Indians from upriver. These people had apparently tried to reach the reservation before, but had to wait until warm weather opened the river (Fay 1856a). Less than a month after arrival, however, the upriver Indians left again:

> ...they could not subsist on clams and such fish as are caught here about, they make use of deer and elk as well as small river fish for food on their own ground and were much disappointed that they did not get fresh beef and pork constantly (Fay 1856b).

Some of the Indians undoubtedly left with intentions to return, and some did not attempt to return. Captain Fay reported to Governor Stevens, in the spring of 1856, that he could not allow more Indians to enter the reservation, because he could not provide for all that came. He reported that the Indians had set up temporary camps around Penn Cove, outside of the reservation (Fay 1856c).

The Agent in charge of the temporary reservation at Holmes Harbor also reported that some "Sock-a-bute" came to his reservation in April, only to leave again within the month. He encouraged them to return to their traditional territory to do spring planting and obtain other provisions as supplies there had likewise run short. It was expected then, that the Indians would bring their own food with them when they came back. The majority probably did not go back, at least with any intentions of staying, as the location was far removed from their hunting, gathering and fishing grounds.

The Swinomish Reservation established on Fidalgo Island was eventually to serve as their permanent home, but according to an 1890 census, only about 20% of the Indians belonging to the reservation actually lived there. Recently, Barbara and Robert Lane compiled evidence that indicated that even these off-reservation figures were low (1977:40-41). Most of the people who lived within the Sauk and Suiattle River drainages did not move to the reservation.

In response to the increasing white settlement along the Sauk River, and particularly in Sauk Prairie, the Indians made an appeal to the State, and hence to the federal government for title to lands up the Suiattle River. In accordance with the General Allotment Act, which provided for allotments to be granted to Indians not on reservations, an allotting agent arrived to survey the lands. Approximately 66 allotments were plotted along the Suiattle River (Blukis Onat et al. 1980:38). Several Sauk families built homes and began clearing land and making other improvements, however, their victory was short-lived. After the Washington Forest Reserves (later the National Forests) were established, it was determined that these lands were more suitable for timber than agriculture or grazing, and therefore unsuitable for allotment purposes. Most of the allotments were cancelled and the Indians dispossessed, except for a small percentage which had already been patented.

> [The Sauks] were chased out in 1917 and they went back to the Sauk River area, living wherever the white settlers would allow; on river bars and out-of-the-way parcels of land. Families spent the winter crowded together in tents and abandoned shacks. One group went to an abandoned logging camp and set up housekeeping there. This was the time of the great influenza epidemic and the number of Sauks was further reduced. Ultimately, the survivors scattered, going wherever they could find a place to live (Fish 1981:556).

Most recently, the Sauk-Suiattle people have enjoyed a permanently established reservation within their aboriginal territory:

It took this community's Sauk-Suiattle Indian Tribe more than a century to achieve federal recognition and another decade to get a permanent tribal center and housing on reservation land. But the tiny tribe's 211 members will celebrate...the Interior Department has given reservation status to 23 acres in two separate tracts... (Seattle Times, July 1985).

The Stillaguamish Indians

Sociopolitical Organization

Territory

At the time of the Treaty, it was understood that the Stillaguamish Tribe occupied the territory of the "Stoluckguamish River" from its headwaters to its mouth. This was deduced from information gathered from the surrounding and downriver people; no one having actually travelled upriver to verify the information. The Stillaguamish utilized the inland riverine environment as well as the shores of Puget Sound for their subsistence and material needs, and although there were several villages or campsites along the lower shores, their name, which means "river people" and their lifestyle generally reflected a riverine orientation.

In some of the early documentation, a Stillaguamish subgroup is identified for the South Fork of the River. This group of people was called the "Whetl-ma-mish" (Lane 1973b:6). They were also called the Nquentl-Na-Mish. On some of the early tribal maps this name appeared to refer to the people occupying the territory between the Forks of the Stillaguamish River (Indian Claims Commission 1974:604). The name is dropped from the records sometime around 1858, and subsequent references simply refer to the Stillaguamish Indians.

Another name, the Quadsak, appears more consistently on the maps and in the literature. This referred to the people living in the villages at the mouth of the Stillaguamish River. According to Anthropologist Sally Snyder, who served as a witness before the Indian Claims Commission in the Stillaguamish case, the Quadsak were closely allied with the Stillaguamish:

> After the smallpox epidemic...Quaksak... If they are not part of the Stillaguamish...was held in common by the Quaksak and Stillaguamish (Anonymous 1973:260A).

Camano Island, adjacent to the mouth of the Stillaguamish River, was apparently used by people affiliated with several villages of the surrounding area, including the Lower Skagit, the Kikiallus, the Snohomish, Snoqualmie and Stillaguamish. This island, along with other large islands in Puget Sound (e.g. Whidbey Island), may have been considered "free-use" areas, in that permission was not required to utilize the resources available thereon.

The data reflect a broad territory of use for the Stillaguamish people. In a petition before the Indian Claims Commission (1974:579), the Stillaguamish Tribe identified their territory as inclusive of the North and South Forks and their respective tributaries, and the mainstem of the river excluding about a five mile stretch from the mouth upstream. The Commission found the territory of <u>exclusive</u> use by the Stillaguamish Tribe to be much smaller:

> Beginning at the junction of the Stillaguamish River with Pilchuck Creek, thence northerly along said Pilchuck Creek to the line dividing Skagit and Snohomish Counties, thence southerly along said creek to where it intersects with the

> North Fork of the Stillaguamish River, thence southwesterly on a diagonal line to a point where the South Fork of the Stillaguamish River intersects the 48° 10' line in Township 31 North between Ranges 5 and 6 East as shown on said map; thence southwesterly to the center of the town of Edgecomb; thence westerly to the Lakewood Station of the Seattle and Van Couver line of the Great Northern Railroad; thence northwesterly in a straight line to the point of beginning (1974:610).

Villages

In 1926, James Dorsey, a Stillaguamish Tribal elder and witness before the Commission, recalled the villages of which he had knowledge. Dorsey described the large houses, or potlatch houses that comprised the villages. These houses were made of cedar planks and constructed without nails, held together with pegs and branches (Dorsey 1926). Bruseth obtained the following description of a house at Dorsey's village near Trafton:

> On the banks of the Stillaguamish River near the present Trafton, stood at one time a big Indian house. The Stillaguamish chief had decided to hold a Potlach or Squee-quee. A large attendance was expected, greater than the smaller buildings could house, so a larger building was erected. When completed it was a very fine building. About 40 years ago, during a talk with Jimmie Dorsey, then Stillaguamish Chief, he gave me some particulars about it. About 30 paces long and 6 paces wide; heavy posts, plates and beams, long-split and hewed cedar boards for siding and roof. The roof overlapping so the smoke could go out and rain couldn't come in, long fire pits in center of dirt floor, bunks for beds and seating along the walls. Pictures carved and painted on wood hung on the walls... It had only one door - a large opening in the middle front (Bruseth n.d:11).

Dorsey stated that these houses took 40 or 50 men up to four months to build. Each house was occupied by several families. Dorsey also remembered temporary mat shelters that were used by people visiting the villages and at the camps (Dorsey 1926). There were several temporary camps located along the river between Pilchuck Creek and the forks of the River (Bruseth n.d:11). It is interesting to note that at the time Dorsey gave his deposition before the Indian Claims Commission, he was around 75 years old (he did not know his exact age), and did not present it in English. The deposition was taken with the assistance of an interpreter.

The Stillaguamish people utilized village sites along the Stillaguamish River, and near the vicinity of Warm Beach (Table 3.7). Permanent village sites were founded to take advantage of the most important resources of the territory. Fishtraps were located at nearly every permanent village site (Dorsey 1926). There was also a village near Kent Prairie, in the vicintiy of Arlington, a site well known as a place to gather roots and berries. The village at Arlington (Skabalko) was used as a stopover for several tribes who travelled

Table 3.7 Historic Stillaguamish villages and camps.*

NATIVE NAME	DESCRIPTION
- - -	A village with three large potlatch houses near the present site of Stanwood, where an estimated 250 people lived. A Stillaguamish leader Zis aba lived in and was "chief" of this village. There was a cemetery associated with this village. (T32N R3E Sec 25)
- - -	Three potlatch houses near the present site of Florence. Two of these houses were occupied by five families each, and had about an acre of cleared land. The third house consisted of "several" families and had about two and a half acres of cleared land. The chief of this village was Kal-cud. (T32N R4E Sec 30)
Cub-ial	A village across the river and south of Florence with "several" houses. At least 400 people lived here. There was also a large house, "strong house," about 150 feet long for storing blankets, furs and other valuables. Also, a cemetery was located there. The chief of this village was Kal-kad. (T32N R4E Sec 30 Lots 2-3)
Lo-Al-ko	A village of one large house with about five families living there. About one and a half acres were cleared around this house. The chief of this village was Good-wich. (T32N R4E Sec 30 Lots 5-6)
Sel-ta-ch	Three houses, one of which held about five families. Two hundred and fifty people lived at this village on one and a half acres of cleared land. The chief of this village was Sa-Quil-ten. (T32N R4E Sec 29 Lot 1)
Sp-la-tum	A village consisting of a large house, a small house, and several smaller cabins near the present site of Warm Beach. This village was a visiting center for members of the other Stillaguamish villages and other tribes. According to Tweddell, this was a Snohomish village (1953:159). The chief of this village was Zis-a-ba. A burial ground was associated with this village. (T31N R3E Sec 13 Gov't Lots 3-4)
- - -	A village located between the present towns of Florence and Silvana. Several families lived here in one big house; about 100 people in total. Potatoes were raised on about two and a half cleared acres. The chief of this village was Quil-Que-Kadam. (T31N R4E Sec 4)

NAME	DESCRIPTION
- - -	A village on the banks of Hat Slough about four miles south of Stanwood. About 100 people lived in two large houses. According to Tweddell, this village was occupied by the kwatsaxwbixw or "yellow tribe," a band of the Snohomish (1953:159).
Skabalko	Two large houses at a village near the present site of Arlington (Kent Prairie), occupied by "several hundred" (200-300) people. There was also a cemetery at this village (Bruseth n.d.:11). (T31N R5E Sec 2)
Chuck-Kol-Che	A large village at or near Trafton, consisting of one very large house, another smaller one and a large smokehouse. About 200 people lived here. A cemetery was also maintained at this village. The village chief was Chad-is. (T32N R6E Sec 20)
- - -	A large camping ground was located at or near Oso, but no permanent houses. This was a general congregating place for use when picking berries, hunting, etc.
- - -	At or near Hazel, there was a village of two large houses. About 150 people lived here. A cemetery was also maintained at this village.
- - -	A very large camping ground on Mt. Higgins, with a large shed, drying racks, and a fireplace. Large numbers of both men and women would gather here for the hunting of bear, deer, elk, mountain goat and other animals. The meat was stripped and dried on racks. Berries were also picked and dried. This camp was used by people from all the villages above.

(Anonymous 1973; Dorsey 1926; Lane 1973b.)

* Sally Snyder, working for the Stillaguamish Tribe on their claim before the Indian Claims Commission, located 26 villages and campsites along the Stillaguamish River and adjacent territory. Descriptions of these were entered at Petitioner's Exhibit No. 5; Indian Claims Commission Docket No. 207. These were not available for this research.

through that territory (Bruseth n.d:11). The Stillaguamish frequently intermarried with neighboring tribes, resulting in a high degree of co-habitation of village sites and co-utilization of resources. In particular the villages located near the mouth of the river and Warm Beach were not exclusively occupied by the Stillaguamish, but were shared with others. According to Ethnologist Colin Tweddell, Warm Beach was a Snohomish village used by the Stillaguamish (1953:113). Snyder also located a Kikiallus village on the mainland near the mouth of the River.

> As to the use of the area near the mouth of the Stillaguamish River, the Snohomish seem to have used this general area and there was a Quadsack village... Then the Kikiallus and the Lower Skagits seem to have been utilizing the area. After all, there isn't much division between Camano Island and the Lower Stillaguamish River, so that there were a lot of people in the area... Warm Beach is just south of the mouth of the Stillaguamish River, and that must have been very popular and very much utilized (Indian Claims Commission 1974:604-605).

Beyond these areas which they shared with other tribes, the Stillaguamish held firmly to concepts of belonging to a particular village. The people who shared their territory did so by rights acquired through marriage or inheritance, or by permission. One example of the autonomy of the villages along the drainage may be drawn from the diaries of two white settlers who ascended the river in 1851. At each village, they were required to stop and request permission to continue. In addition, they had to acquire new guides and canoes, because it was not possible for their guides from the village downstream to continue to act in that capacity through their neighbor's territory (Hancock 1927; Lane 1973b:5-6). Barbara Lane commented that the information contained in these diaries seems to constitute the sum total of information collected in Stillaguamish territory prior to 1855 (1973b:5).

Population

The population estimates submitted in the 1850s for the Stillaguamish people were based largely on hearsay (Lane 1973b). At that time, few white men had travelled up the Stillaguamish River, and none had done so with the intention of completing a population census. The figures reported to Governor Stevens in 1854 included the "Sto-luch-wa-mish...200" (Stevens 1855:436). Generally the records indicate that the population of the area was between 150 and 200. An exception is found in the narrative of Samuel Hancock who, in 1851 estimated the population of one village near the Forks at about 300 (Hancock 1927).

Seasonal Patterns

Plant Resources

Before white settlement, a large percent of the territory above the river valley was heavily timbered (Indian Claims Commission 1974:591). Firewood was gathered from locations close to the villages. Natural prairies for gathering roots and berries were scarce in Stillaguamish territory. Southeast of Arlington, Kent Prairie was the only prairie along the Stillaguamish used for

the cultivation of native plants. This area was used in common with neighboring tribes, including the Sauk and Snohomish, with whom the Stillaguamish had many familial ties. Sauk Prairie, within the territory of the Sauk-Suiattle Indians, was also used by the Stillaguamish for root gathering.

Wild onions, Indian carrots and possibly camas were cultivated by the Indian women. After the plants were dug, the edible portion was removed and the stems and tops were buried so that new plants would grow. Prairies or meadows were intentionally burned to promote new crops of berries.

> The Indians were good at transplanting or weeding root crops. In season they worked in the hop fields, being very adept at picking hops. They also got jobs slashing brush and clearing land. Sometimes several families of Indians would take off to the hills to some lake or swamp, to dig roots and pick berries (Bruseth n.d.:5).

After potatoes were introduced, the Indian women began planting and harvesting them in much the same fashion as the native bulbs. There was a large village between Florence and Silvana where, Dorsey recalled, someone once planted ten potatoes and thereafter potatoes were raised (Dorsey 1926).

Berries were available in small clearings in the river valleys. The Stillaguamish travelled to the higher elevations in the fall of the year for mountain blueberries. They sometimes joined the Sauk Indians in gathering berries on the slopes east of Darrington (Bruseth n.d.:7). Groups also congregated at a campsite near the present location of Oso, from which they had good access to both hunting and berrying grounds. Another campsite, located in the meadows of Mt. Higgins above the village at today's town of Hazel, was also used for berrying and hunting sojourns. The women worked to process the berries in camp before returning home to the winter villages. On Mt. Higgins, there were a number of drying racks which were used for drying meat (Dorsey 1926) and may have also been used for drying berries. Berries were also sun-dried.

Animal Resources

The Stillaguamish hunted deer, elk, bears and mountain goats in the river valley and surrounding territory. Favored hunting places for deer and elk included the flats north of Arlington, the Sultan Basin, the area of upper Pilchuck Creek and Lake Cavanaugh, along Jim Creek (a tributary to the South Fork of the Stillaguamish), near Monte Cristo Lake and near Barlow Pass (Baenen 1981). Men often banded together for hunting trips in the higher elevations, using their numbers to drive the animals over cliffs. This technique was used for elk, and sometimes for goats. Goats were also caught in lasso snares set along the rocky ridges. Bears were caught in traps or pitfalls (Bruseth n.d.:10).

The Stillaguamish were known to their downriver neighbors for their skills in mountain goat hunting. Their inland environment provided them the ideal opportunity for obtaining this prized animal. Goats were hunted for wool as well as meat; the wool was traded to other tribes in exchange for coastal resources. The Stillaguamish also invited other tribes with whom they

maintained friendly relationships to hunt within their territory. In return, they hunted in Sauk and Snohomish territory.

Families embarked on two to three week forays to the high elevation camps, staying to process the take. Hunting was sometimes coupled with berrying in the mountains. One gathering place was southwest of Darrington, where several families congregated, dispersing in smaller groups to the surrounding territory. Social activities of the camp served to strengthen the bonds between distant relations and friends before families returned to their respective villages for the winter.

Mt. Higgins was the most popular hunting location within the Stillaguamish drainage. From here, deer, elk, goat, bear, and berries were accessible. According to Dorsey, this area was used by people from all the villages of the Stillaguamish.

> ...on Mt. Higgins...was maintained a very large camping or hunting grounds, with a large shed, drying racks and a fire place; at which place large numbers of both men and women would gather for hunting of bear, deer, elk, goat and other animals, the meat of which was dried on the racks; berries were picked and dried (Dorsey 1926).

Mountain goats were also hunted up Boulder Creek to Three Fingers Mountain, and up Squire Creek to Whitehorse Mountain (Baenen 1981:420).

Fish Resources

Fish were a mainstay of the diet of the Puget Sound Indians and the Stillaguamish were no exception. Although they lived close to saltwater resources, the Stillaguamish practiced a lifestyle that was generally oriented toward the riverine environment. They were dependent on the anadromous fish runs of the river for food. Fishtraps were found at all the village sites (Dorsey 1926) and the activities of the village centered around fishing for a majority of the year. Much of the catch was smoke-dried and stored for the winter food supply, although some was also eaten fresh.

As the season progressed, family groups moved about from one camp to another to take advantage of different runs. Nels Bruseth remembered the life of the Stillaguamish Indians during the spring, summer and fall, and described the fishing techniques that he saw being used along the river:

> They moved up and down the rivers and creeks following good fishing, hunting and berry picking... Once camp was pitched, it wasn't long before the aroma of cooked, roasted and smoked salmon filled the air...
>
> Not only we children, but also the grownups marveled at the skill of the Indians in catching fish with their two-pronged spears; even in the muddy flood waters they would glide along in their canoes, a woman in the stern end gently paddling, with two men in the middle or forward end, casting or thrusting spears into the water and bringing in the thrashing silvery salmon or Tyee. Indian women would also spear fish,

> but sometimes by another method, bobbing spears up and down with prongs crosswise of the current. This method was also quite effective...
>
> Indian fishing spears are now seldom seen. They were ingenious affairs, of various design, the most common being the twin barb. A long shaft with two points - tipped with mountain goat horn or bone barbs - the double barbed point tied with thongs to the shaft would pull off when the fish was speared thus relieving the strain on the shaft (n.d.:5-10).

Fishtraps used by the Stillaguamish included tripod weirs, funnel snares, and a kind of trap where the fish were led toward a box-like enclosure, and trapped inside (Lane 1973b:21-22). The latter two were used primarily for trout (including steelhead) descending the smaller streams, whereas tripod weirs were placed at the mouths of creeks and used for all species. Squire Creek is mentioned as a good trout fishing stream (Baenen 1980:420). Two pronged harpoons were used for salmon, and three-pronged spears (leisters) were used to catch trout. Whitefish and suckers were also taken with a leister.

Fish were plentiful in the river. In 1851, a white settler/prospector travelled up the Stillaguamish in canoes, with the help of Indian guides, and noted their "shrewdness in catching fish." He begrudged their numerous stops to catch and eat fish (Lane 1973b:19-20). In testimony before the Indian Claims Commission, a Stillaguamish tribal member recalled fish in the river "...so thick...you could almost walk across the river on them" (1974:600).

Communication and Travel

The Stillaguamish maintained contacts with their neighbors in all directions. They also apparently maintained some more distant relationships, as Dorsey explained:

> ...the Skagits or Duwamish came to visit, they would have a right to do so, especially the Duwamish because the Stillaguamish 'are more intermarried and they are welcome to that house the same as if they owned the house' (Indian Claims Commission 1974:590).

The Stillaguamish Indians travelled through their territory in canoes, and were experts at poling up the swift river and riding the current down (Hancock 1927). Canoes were portaged between drainages.

> The 'North Fork of the Stillaguamish River was utilized to some degree as a highway. There are accounts and Mr. Bruseth mentioned one and I have one from a Skagit informant, of the Upper Skagit portage across the area--the rather flat area between the Sauk River and the Upper North Fork of the Stillaguamish River. And then down the Stillaguamish River for various purposes. Going down to the ocean perhaps on clamming expeditions...there was a contact all up and down the Stillaguamish River from the Sauk River, so that I would

> say that those [Indians] were pretty close also... The North Fork seemed to have been...a highway for people from the Upper Skagit and particularly from Sauk River' (Indian Claims Commission 1974:604).

The above quote probably refers to the place called Kudsl Kudsl, "the Portage," now Darrington. Bruseth mentions that the Stillaguamish came over to the Sauk drainage by way of this crossing to participate in big meetings at Sauk Prairie (Bruseth n.d.:17).

Another portage between Sauk and Stillaguamish territory was between Palmer Creek, far up the South Fork of the Stillaguamish, and the South Fork of the Sauk River. The Stillaguamish people crossed here to get into the upper Sauk River where they occasionally hunted and picked berries (Indian Claims Commission 1974:585, 596). In addition, there was a portage between the Pilchuck and Stillaguamish Rivers near Granite Falls. The Snohomish and Stillaguamish used it, and it appears that the Snoqualmie did also, on their way to the Sound. The shared use of Stillaguamish territory between these neighboring tribes was unquestionably reciprocal (Indian Claims Commission 1974:604).

The Stillaguamish were not isolated from visits by people from the Plateau culture area, mostly because of the short distance between the Sauk and Stillaguamish Rivers. People from eastern Washington coming into Sauk territory frequently continued all the way to the coast by way of the Stillaguamish River (Indian Claims Commission 1974:606), no doubt stopping, camping, visiting and trading along the way. Indian Pass was a favored cross-Cascade route for the Wenatchi people and, dropping down into the North Fork of the Sauk, it easily connected to the Stillaguamish drainage by way of the portage at the headwaters of the South Fork of the Stillaguamish.

The Reservation Era

The Stillaguamish Tribe of Indians (Stoluck-wha-mish) was named in the preamble of the Treaty of Point Elliott. They were present at the treaty grounds, however, it appears that the Stillaguamish were inadvertently overlooked when the time came to sign the treaty. This is easily understood in the context of the hasty preparation of the treaty, the January weather, the language discrepancies, and the confusion there must have been with over 2,000 Indians present. Because the Stillaguamish were at times grouped with the Snohomish, Skykomish and/or Snoqualmie, Governor Stevens may have considered the signature of Pat-Kanim, "Chief of the Snoqualmoo, Snohomish and other tribes," to be adequate representation for the Stillaguamish (Lane 1973b:19).

White settlements along the Stillaguamish drainage were slow to develop, and as a consequence the Stillaguamish people remained relatively isolated for a number of years after the signing of the treaty. In May 1856, they were called to the temporary reservation at Holmes Harbor, although it was unclear whether they were truly assigned to any reservation at all. In a report to Governor Stevens, Indian Agent Nathan Hill, in charge at Holmes Harbor, reported that many of the Stillaguamish had not come down to the reservation, "...I never visited them believing they properly belonged to Capt. Fay [at the Penn Cove temporary reserve]" (Lane 1973b:9). The Stillaguamish did not want to move to

the island permanently, and when a few finally did go down, their visit was short. By July, many had returned upriver to fish, hunt, and pick berries, and resume the lifeways to which they had adapted centuries before.

Later, they were assigned to the Tulalip Reservation, which was to serve as a central reservation. Some moved there initially, but moved back. A census record for the Tulalip Reservation in 1881 illustrates this, listing three Stillaguamish people out of a total of 555 Indians (Tweddell 1953:20). In subsequent years, several more moved to Tulalip, and became absorbed in the Tulalip Tribes. Many descendants of those who remained off the reservation continue to live within the Stillaguamish drainage.

The Skykomish Indians

Some of the data gathered for this section are specific to the Skykomish Tribe; but because the Skykomish are often grouped with the Snohomish or Snoqualmie Tribe, some are more general in nature. I have included information that is applicable to the land use patterns in the Cascades without attempting to discern separate tribes. The Skykomish people shared similar cultural traits, and utilized many of the same resources as did the other bands of the Snohomish drainage.

Sociopolitical Organization

Territory

The province of the Skykomish Indians was the Skykomish drainage, from the confluence of the Skykomish and Snoqualmie Rivers, east to the Cascades.

> The Skykomish...lived along the Skykomish and Foss Rivers. A band of Skykomish used to live on Sultan Creek; they are extinct now. All the Skykomish wandered through the Cascade Mountains on hunting expeditions (Haeberlin and Gunther 1930:9).

The earliest records, including the Treaty of Point Elliott, indicate that the Skykomish were a distinct tribal entity. Their relationship with the Snohomish and Snoqualmie, however, has been so close, at least in historic times, that it has been difficult to distinguish them. When attempts have been made to draw a territorial boundary for the Skykomish, it has often been placed just east of Monroe. In this division, an Indian village near the present location of Monroe (S'dodohobc) and its inhabitants have been included with the Snohomish Tribe. The territory upriver of that location is commonly assigned to the Skykomish Indians (Sq̓ex^{w}əbc, "upriver people"). Ethnologist Colin Tweddell considered the Skykomish a band, or an extended village, of the larger group of Snohomish Indians. He cautions that the distinction between upriver and lower river Snohomish is not clear (c.f. Indian Claims Commission 1974; Tweddell 1953). Tweddell suggests that the upriver group originally entered their present territory by branching off from the lower river Snohomish. He described the Skykomish territory as:

> ...from Sultan to Index inclusive with the drainage area of the Sultan and Wallace Rivers, and the drainage area as far as into the nearer parts of the North and South forks of the Skykomish River (1953:113).

A different opinion was expressed in another view of Skykomish tribal affiliation. In the land claim petition brought before the Indian Claims Commission in 1951, historic evidence was presented indicating that the Skykomish Indians were a sub-group of the Snoqualmie Tribe at the time of the treaty. The Indian Claims Commission found, and contemporary experts agree, that the Snoqualmie and Skykomish Indians were separate identifiable groups, living along opposite forks of the same river (1974:426).

The Skykomish were further subdivided into two groups: one comprised of people who lived around the present town of Sultan, and another group who lived in the vicinity and east of today's Index. Elderly Indian informants told Tweddell that there were marked differences in the lifestyles of these two groups:

> ...the people were called Sq̓ex^{w}əbc up to Index, and besxəxəxəltc from index up to the mountains...fern people...the word and the people is a little different.
>
> The Index people were the genuine Skykomish tribe, rather wild; they would come up in canoes and suddenly (be) gone, hid in the rocks by Index...were fast walkers - would go way over Three Sisters Peak beyond Baring (Mountain) and back to Index in one day picking berries.
>
> ...the Snohomish could paddle, the Skykomish could pole, and the Index people could walk (Tweddell 1953:113-114).

According to Tweddell, the Skykomish spoke the Skagit dialect of Lushootseed, along with their lower Snohomish River neighbors. The Indian Claims Commission concluded, after reviewing evidence presented in a petition to define the tribal relationship between the Snoqualmie and Skykomish, that the Skykomish spoke the southern dialect of Lushootseed, commonly called the Nisqually dialect, which they shared with the Snoqualmie (Indian Claims Commission 1974:424). In 1852, yet another opinion was voiced when Agent E. A. Starling reported:

> The Sno-ho-mish, Skea-nu-mich, Stuck-stan-a-jumps and Stilla-qua-mish speak the Snohomish tongue... The Skagit, Kickuallis, Squa-sua-mish and Sock-a-muk speak the same tongue as the Skagit (Tweddell 1953:37-38).

Whatever the differences between the dialects or subdialects, they apparently did not keep the Skykomish from maintaining an active and friendly relationship with the surrounding groups. The Skykomish frequently interacted with the Wenatchi Indians of the Columbia Plateau, who spoke another language altogether, Sahaptin.

Villages

The Skykomish lived along the river, from west of Monroe to Index (Table 3.8). From these permanent winter villages, they participated in the kinds of seasonal gathering, hunting and fishing activities that characterized the subsistence patterns of the native western Washington people. They made their permanent homes at favored fishing locales to take advantage of the seasonal salmon runs available in the Skykomish River drainage. Temporary summer dwellings were located in the Skykomish territory along the rivers and in the mountains. The Skykomish also had houses on Puget Sound and the adjacent islands for use during visits there.

The big houses, or potlatch houses, were meeting centers for regular resource exchange during summer and fall sojourns. During the winter ceremonial season, house owners invited guests from the surrounding territory to take part in social activities. Friendships and marriages were arranged which strengthened the social ties, a vital link in their system of resource procurement and exchange. The personal powers and privileges which embodied the health and success of the people were publicly validated during the winter ceremonies.

Table 3.8 Historic Locations of Skykomish Villages.

NAME	DESCRIPTION
- - -	A village site along the north bank of the Skykomish River, near the mouth of Elwell Creek.
stəkʼtalidubc	A village site along the south bank of a slough of the Skykomish River near Sultan. A permanent fishery was also situated here.
t^{w}ʼtsəitəd	A village site at the present town site of Sultan. One house was located at this village.
- - -	A village site on the Sultan River four miles above its mouth. There was one house at this village.
- - -	A village site at the present town of Startup, possibly developed as an overflow from those at Sultan and Goldbar.
ʼxaitəd	A village at the present town site of Goldbar, extending to the confluence of the Wallace River with the Skykomish. The potlatch house constructed here was one of the largest on the river due to the great numbers of people departing from this point to hunt elk in the Sultan Basin. A cemetery was also part of this complex. This location is also noted for salmon.
xəʼxausalt	A village site at Index, along the north bank of the Skykomish River near the junction of the North and South forks. A large potlatch house was located here to accommodate the groups heading up the Cascade slopes in quest of mountain goat, other game, and huckleberries.

(Carter 1978; Indian Claims Commission 1974; Smith 1941; Tweddell 1953.)

Along the Skykomish River, villages located near the present towns of Goldbar and Index had large potlatch houses. Around the turn of the century, the house at Goldbar may have housed as many as forty families, representing a total of 240 people (Tweddell 1953:98). Another meeting center for the Skykomish people was in the vicinity of Monroe, where more than one big house is reported to have stood.

Population

In the middle 1800s, the population of the Skykomish was estimated at between 300 and 450 people (Indian Claims Commission 1974:424, 455). In his 1853 annual report, Indian Agent E. A. Starling's census of the Puget Sound tribes included the "Sea-wa-mish" - 175 people (1853). This estimate appears to be low, and inconsistent with later counts. By the turn of the century, there were still about 320 people living at Sultan and Goldbar; all members of approximately forty Indian families. This is in contrast to an aboriginal population that may have been well into the thousands prior to the smallpox epidemics that took their toll on the native populations of western Washington (Tweddell 1953:98).

Seasonal Patterns

The resources available in the upper reaches of the Skykomish River are similar to those generally recognized for the western flank of the Cascades: berries, root plants, deer, elk, and mountain goats. These are all available within the province of the Skykomish Indians, and were pursued. The yearly cycle of the Skykomish people revolved around the seasons during which salmon were available in the upriver stretches. The successful fishing season was vital to the economy of the western Washington Indians, and the Skykomish were no exception. They also depended upon a lucrative hunting season; they needed the animal meat to fill out their winter stores, but also used the hides of deer and elk, and the wool from mountain goats to exchange for other resources not available (or less desirable) in their own territory. People travelled widely during the yearly food quest, and the distinctions between marine, riverine, and mountain peoples became more obscure. The yearly cycle (Table 3.9) included resources from all the available and surrounding territory.

Animal Resources

There were three general areas known for excellent hunting: the Pilchuck basin, the Sultan Basin, and an area above Index. Deer, elk and bear were taken in the mountains around August to October, and mountain goats were hunted in September. The meat was dried for supply in the winter months.

A. Pilchuck Basin - "This area led up to the higher ground around Pilchuck Mountain and eastward to the watershed of low hills between the Pilchuck and Sultan Rivers" (Tweddell 1953:208). It was hunted by inhabitants of the Pilchuck as well as the Sultan, Skykomish, Snohomish, and possibly Snoqualmie Rivers for bear, deer and elk, especially the latter" (Indian Claims Commission 1974:396-397 map Exhibit C).

B. Sultan Basin - "The Sultan Basin was a definite elk hunting area on the upper reaches of the Sultan River. This was used by hunters from all the member bands in the Fall" (Tweddell 1953:208).

Table 3.9 The yearly cycle of the Skykomish Indians.

SEASON	MONTH	ACTIVITY
SPRING	April-May	Sand rush as big as the forefinger, 8-12 feet high, a 1 1/2 inch knob on the top, beneath it little shingly "skirts"; latter peeled off and stalk eaten; it was juicy and tender.
	May-June	Salmonberry sprouts growing in river lowlands, not plentiful around the beaches, so people go upriver to gather them; season lasted 2-3 weeks; afterwards too big and tough.
		Clams, cockles, fishing, hunting on the Sound.
	June	Salmonberries; strawberries on river bars, next to the woods, loaded with strawberry plants.
	June-July	Berry season on islands and inland. Continuation of clamming, fishing, hunting, in the Sound area.
	July-August	Blackberries and blackcaps in season for 3-4 weeks -"all July-August".
	August	Salalberry and blueberry; mountain huckleberry and/or mountain blueberry.
	General order of berries with their names, as they ripen in spring and summer:	
	(sxalq̓	sand rush)
	s'q^{w}a'atc	salmonberry sprouts
	sš'laq	thimbleberry sprouts
	stə'g^{w}at	salmonberry
	sgwɔd'bix^{w}	blackberry - these were dried
	'tλaka	salalberry
	q^{w}ə'q^{w}alt	blueberry on Whidbey Island, "in salmon and blackberry time".
	s^{w}'dax̣	mountain huckleberry; may be the same as the mountain blueberry; grows at Stevens Pass and ripens in August.

SEASON	MONTH	ACTIVITY
	August	This was the end of the summer seasonal activities in the Sound area, including drying of clams, cockles, salmon, fish, berries, venison, etc.
		Hunters go to Sultan Basin for elk.
AUTUMN	August-October	Salmon season, the upriver fishing during the salmon runs, from Snohomish City and upwards.
		Inland hunting for deer, bear, etc., in the Pilchuck, Skykomish, Sultan drainage basins.
		Rock piles in Woods Creek area, after use during berry season would still be used during hunting season.
	September	Mountain goat hunting in the Cascades above Index - further up than the mountain blueberry areas above Index.
WINTER	November-February	Hunting and fishing as there was opportunity and need.
		Concentration of labor on all types of indoor crafts and repairs. A cance was always in process of building.
	January	Steelhead fishing on the upper Pilchuck River.
SPRING	March	Preparation for coming outdoor activities.

(From Tweddell 1953:54-56 (emphasis added).)

C. Index - Mountain goat, deer and bear were hunted in the hills above Index. These areas were especially noted for their goat habitat (Indian Claims Commission 1974:396-397 map Exhibit C). There was a "certain amount of inter-tribal mountain goat and elk hunting privileges above Index" (Anonymous 1973:242A).

In one description of a goat hunting trip to the area above Index, a group of five (four of whom were Indians) followed Barclay Creek to Barclay and Eagle Lakes, where they camped in the vicinity of several mountain goats. After about a week, they left the area by way of Lewis Creek, which joins the North Fork of the Skykomish. Prime goat hunting country was located between these two creeks (Soth 1978). The Skykomish utilized both the meat and the wool of these animals, and are reported to have made mountain goat caps from the heads of the goats, leaving the ears and horns attached (Haeberlin and Gunther 1930:38). The Snoqualmie occasionally crossed over into the area above Index in pursuit of game, and then the Skykomish would lend them canoes to take downriver to the forks and back home, up the Snoqualmie River. The Skykomish, however, did not regularly utilize the Snoqualmie territory to hunt (Tweddell 1953:126).

Plant Resources

The vicinity of Stevens Pass was noted for mountain huckleberries and blue elderberries. Groups would travel to this area in August and camp at the pass to pick berries on the sidehills. At the same time of year, women collected beargrass around the pass for baskets. There were many lower elevation gathering areas as well. One area that the women frequented in the fall was in the North Fork drainage above Index. Tweddell points out that the berrying areas were below the mountain goat territory (1953:55). Huckleberries and other mountain berries were also gathered on the east side of Pilchuck Mountain (Tweddell 1953:204). Berries supplemented the winter food supplies. They were sun dried and crushed into cakes, and then dried again for storage. In later years, the Indian women transported fresh berries downriver and sold them to the settlers. The fresh berries were processed by spreading them out on a blanket and tossing them into the air. The leaves were carried away by the wind, and the berries remained.

Numerous places downriver were well known as gathering localities, and the Skykomish would travel from their upriver villages to Cochran Prairie and Woods Prairie around Sultan for berries, and to Allen Prairie west of Monroe, where there were about forty acres of hazel nuts. Piles of cooking rocks remain as evidence of the food processing activities that took place at the temporary camps. Locations of rock piles have been described for their associations with berry patches, nut trees, fish traps and seasonal camping grounds. Besides those areas noted above, three locations close to the banks of Woods Creek are mentioned (Tweddell 1953:202-204). Further downriver, Stevens Lake, Machias and Snohomish City were known as berrying locations, especially as good locales for gathering salmonberries.

Fish and Shellfish Resources

Fishing was of paramount importance to the subsistence economy. Fish were smoked for storage and were also traded to the white settlers for flour and potatoes. Dog salmon was the main smoked fish, but chinook, coho, and pink regularly spawn in suitable locations along the Skykomish, Wallace and Sultan Rivers, and along Proctor, Elwell and Woods Creeks (Williams et al. 1975). The Skykomish has a number of good fisheries, but none are noted above Goldbar. Sunset Falls, just above Index, forms a natural barrier to migrating fish.

Fish were caught in Woods Creek by using fish weirs and a constructed grill (Tweddell 1953:62). Other techniques, such as spears and a variety of stationary nets (e.g. gillnets), were employed elsewhere.

The inland fishery was active in autumn, from August to October. Steelhead were available in the Pilchuck River in January. Families from the Sound would travel upriver for the salmon runs, at least as far as the present site of Monroe. The Skykomish would travel to Puget Sound for marine fish and clams. Trips to the Sound took place primarily in the spring and summer months, and while downriver, the Skykomish commonly visited villages on Whidbey Island. The Indians still made their annual trips downriver, even after Euro-American settlement began encroaching on their aboriginal territory. Colin Tweddell explained:

> In later days, after the usual catching and drying of sockeye and king salmon in the Pilchuck River, many of the able-bodied people would cross over at the Granite Falls portage, paddle down the Stillaguamish and out into the Sound southward and head for the hop fields (1953:57).

Another resource of the upriver environment was freshwater mussels, and middens composed mostly of shells have been seen near Monroe, Wallace River, Goldbar and above Sunset Falls (Tweddell 1953:205). In these instances, the middens are thought to represent the debris from the seasonal recurrence of food processing and camping at one location over many years. Another camp site was noted at Youngs Creek (Soth 1978).

Communication and Travel

A combination of overland and river travel enabled the Skykomish to move about their territory with ease. The shovel-nosed canoe, which is the typical upriver style, was seen travelling the upper Skykomish River around the turn of the century, in the early 1880s at least one canoe was reported every day, passing the Sultan area with people in transit to or from the coast for clams. The deepwater (saltwater) canoe was used for travel in the lower river stretches and on the Sound. On their way upriver the Indians would usually change this style, by the time they reached Monroe, for the shovel-nosed canoes which did not swing in the current (Tweddell 1953:56, 63).

Overland routes are suggested to have followed the waterways in Skykomish territory. This is partially due to the fact that the terrain is very broken, and continuous ridges, favored for travel, are not common. According to Tweddell (1953), one trail provided access to the Sultan Basin. It branched from the Skykomish River at a point west of Goldbar, and followed Olney Creek to the upper reaches of the Basin. There were numerous trails leading west from the Sultan Basin, but few to the east.

An overland trail up the North Fork of the Skykomish River served to link the Skykomish people with the Wenatchi Indians of eastern Washington. Popular with both the Skykomish and Wenatchi people, this trail breached the crest at Cady Pass and dropped down into the Little Wenatchee River drainage on the east side. There is little or no evidence of trails between the Skykomish territory and the northern areas, i.e., into the Sauk or Skagit River drainages.

Communication with the northern tribes for kinship alliances and resource exchange did not seem to be of great importance. To the east, the Stillaguamish people shared the Stillaguamish drainage with Skykomish hunters. Some inferences can be made as to overland routes, based on historic evidence of trails:

> Along Williamson Creek from Sultan Basin - a possible route since the divide is relatively low at this point. Miners followed this route to Marble Peak; up Silver Creek to Silver Lake and over Poodle Dog Pass - this route was followed by the Wilman brothers [prospectors] (Sawyer 1918) in the 1870s; Along Vesper Creek and over Headlee Pass - this is the route of a mining trail; Canoe portage between Pilchuck and Stillaguamish at Granite Falls - this route was generally used by the Snohomish who went down the Stillaguamish on their way to the hop fields (Carter n.d.).

There was a great deal of resource exchange between the tribes, which also extended to include the tribes east of the crest. Food and material goods were traded with the Wenatchi people. The Wenatchi supplied tobacco and pipes to their western neighbors in exchange for shell money, which made its way inland from the coast along riverine trade routes. Haeberlin and Gunther (1930) state that the Snohomish acquired mountain goat wool from both the Snoqualmie and Skykomish. Dog wool was traded from the Snohomish to the east.

The Reservation Era

The Skykomish were represented in the Treaty of Point Elliot by seven signatures. The Skykomish Indians apparently moved to the Tulalip Reservation after its establishment, unlike several of the other upriver groups, many of whom refused to relocate to a reservation. According to an 1844 population figure, the Skykomish included approximately 450 people; in 1854, George Gibbs estimated 300 (Indian Claims Commission 1974:424, 455). Since the Skykomish were so often grouped with the Snohomish Tribe, they lost their separate tribal identification, at least in the records, around 1870 (Baenen 1981:430). Because the existence of a present day tribal entity could not be proven, the Skykomish Indians were denied the right to pursue further claims by the Indian Claims Commission in 1960 (Horr 1974:418).

The Snoqualmie Indians

Sociopolitical Organization

> The Snoqualmie lived on the Snoqualmie River from North Bend to the junction of the Skykomish and Snoqualmie Rivers. In summer they went to Snoqualmie Prairie to gather roots and berries and roamed through the Cascade Mountains hunting (Haeberlin and Gunther 1930:7).

Although similar statements abound in the ethnographic literature, exact locations of where the Snoqualmies "roamed," hunted and camped in the Cascades are seldom mentioned. The very general attention afforded the inland Indians in the early ethnohistoric reports exemplifies the lack of concern that existed during the settlement period for the forested zones of Washington. In contrast, the records are much more complete for the Puget Trough, where economic interests of the times were focused.

Territory

The Snoqualmie Tribe (variously called Snoquel-ol-mi, Snuqualmie, etc.) consisted of those people who made their permanent homes along the Snoqualmie River and its tributaries. The confluence of the Tolt River and Snoqualmie Rivers near the present town of Carnation is usually considered the boundary between what are often referred to as the upper and lower bands of the Snoqualmie Tribe. "The term Snoqualmie Tribe as it is used in the literature sometimes refers to all of the Snoqualmie and sometimes to the upper or lower division alone" (Lane 1975:1).

In the opinion of some, the inhabitants of the Skykomish drainage should be considered a sub-group of the Snoqualmie Tribe (c.f. Indian Claims Commission 1974; Lane 1975). They are considered separately herein, as the ethnographic evidence seems to suggest that they were separate land-using entities at the time of the treaty (Indian Claims Commission 1974:426). In 1960, the Indian Claims Commission found that the lands exclusively used and occupied by the two tribes were "contiguous but separate" (1974:432). The province of the Snoqualmie Tribe was described as:

> Commencing at the northeast corner of the townsite of Monroe, Washington; thence southwesterly to the headwaters of Tuck Creek; thence south by southeasterly to the town of Kerriston, Washington; thence southeasterly to Annet Lake; thence northeasterly to Snoqualmie Pass; thence northwesterly to the mouth of the creek on the east shore of Lake Hancock; thence northwesterly to and including all of Lake Hannan; thence northwestward to the place of beginning (Indian Claims Commission 1974:432).

Linguistically, the Snoqualmie are grouped with tribes to the south who spoke the Nisqually dialect of Lushootseed, the Puget Salish language. In this way, they are differentiated from the Snohomish, their downriver neighbors, who spoke the Skagit dialect. Tweddell (1953:112) explains this by suggesting that

the Snoqualmie entered their territory by branching off from the Nisqually groups, not from the Snohomish. The dialects were similar and Nisqually speakers could easily understand and converse with Skagit speakers; the reverse was also true. In addition, many residents of the Snoqualmie drainage had Yakima or Wenatchi relatives east of the mountains with whom they regularly interacted. Consequently, several Snoqualmie members were bilingual speakers of Sahaptin as well.

Villages

Snoqualmie villages were located along the river, and the majority were on the downstream side of Snoqualmie Falls, which formed a natural barrier for migratory fish. Principal villages were located at the mouth of Tokul Creek, at the mouth of Cherry Creek, and at the present sites of Fall City and Carnation. The latter two appear to have been the largest. Other sites were reported by Watson Martin (a grandson of the Snoqualmie Chief, Sonowa) in 1927 during his testimony before the Indian Claims Commission (Martin 1927), and by T. T. Waterman during his studies in 1920 (Lane 1975:28-29). A list of thirteen Snoqualmie villages is presented as Table 3.10. This list may include locations other than permanent, winter village sites, particularly in the case of the village below North Bend which, according to Martin, had a number of "removable houses" (1927). In the findings of the Indian Claims Commission, this locale is listed as "four small summer houses south of North Bend on Sultan Prairie (1974:419). Waterman does not agree that all the places mentioned by Martin were indeed village sites. Martin also indicated that there were two additional sites, of nine and four houses respectively, for which the locations are not known. These may be associated with the major villages at Cherry Creek and Carnation.

The accuracy of village locations and accounts of houses cannot be determined. Where one report may attest to "many houses," another may not identify the location as a village at all. It appears that the house counts in the Indian Claims Commission Findings of Fact (1974:419) are conservative compared to the number that Martin claims to have seen (Lane 1975; Martin 1927).

In addition to permanent cedar plank houses, several other structures may have been found in a typical Snoqualmie village. As mentioned above, temporary dwellings, such as those noted for the village near North Bend, may have been constructed of a conical frame with cat-tail mats for siding. Several sweat houses were also said to have been located close to the river at the village near Fall City (Hill 1970:56).

Permanent villages may have been associated with cemeteries. According to one account, shallow graves could be seen eroding from the river bank near the present site of Fall City around 1872 (Corliss 1972). It is possible that all such remnants have been lost to the changing paths of the Snoqualmie River since that time.

Population

The population censuses that were taken in the 1800s varied widely. Gibbs, who provided information to Governor Stevens about Indian distribution and numbers prior to the Treaty negotiations, estimated the population of the Snoqualmie to

Table 3.10 Historic Snoqualmie villages and camps.

NAME	DESCRIPTION
St^{3}apts	A village site at the mouth of Cherry Creek.
Xal^{3}altx^{w}	The principal settlement of the Snoqualmie people, located on a flat opposite the present town of Tolt, and possibly extending across the river to the location of Carnation on the west side. This was a good place to fish for dog salmon.
Stuwo'yûg^{w}	A village site on Stossel Creek, the largest tributary to the Tolt.
Sxa'siyats	A village of five houses at Griffin Creek, on a prairie. A good place to fish with gillnets. Potatoes were planted here.
T'qwai'qwai	A village of eight houses at Patterson Creek.
YeLh^{w}	The other major village of the Snoqualmie people was located at the present site of Fall City. This was the site of a permanent fishery.
Yahakabulch	A village of nine houses at an unspecified location.
Schwalp	A village of four houses at an unspecified location.
Tqel	A village of seven houses at Tokul Creek. The name means "place for soaking things."
SqwEd	A village of three houses below Snoqualmie Falls. The name means "the underpart, to which the stream plunges."
Ba'xab	A village of eight houses located at Snoqualmie Prairie. Name means "prairie."
Tutsuwa'dEb	A village of five houses located between the South and Middle Forks of the Snoqualmie River.
Saq^{3}óqo	A village site one mile below North Bend, on the west side of the South Fork of the Snoqualmie River. At one time, this location served as a center for ceremonial performances and potlatches.

(Indian Claims Commission 1974; Lane 1975; Martin 1927; Smith 1941; Waterman n.d.)

be 195 people in 1854 (Stevens 1855a:436). Other estimates from around the same time period are as high as 350 (Indian Claims Commission 1974). The difficulty in obtaining accurate figures for all the western Washington tribes was primarily due to their constantly changing places of residency for seasonal exploitation of resources. In 1858, M. T. Simmons, Secretary of the Interior, recognized this problem: "It is difficult to find them in one place except on special occasions" (1858). A similar statement was made by the Superintendent of Indian Affairs in 1870:

> It is reasonable to suppose that in a wild, sparsely settled country like this, at least 5 percent of the Indians were not found (Ross 1870).

Seasonal Patterns

The upriver and mountainous environment of the Snoqualmie Indians provided deer, elk, bear, beaver, grouse, huckleberries, blackberries, elderberries and salmonberries, to name just a few of the food resources. The diet was rounded out by a variety of other available resources from valley, lacustrine and marine environments. Clams were gathered in June from the shores of Puget Sound, at locations such as Redondo Beach, Normandy Park (Baenen 1980:443) and southern Whidbey Island. They were dried for transport and storage. Lakes Sammamish and Washington were prime duck hunting grounds, and the marshy shores provided cranberries, strawberries, camas and wappato. Juanita Bay was a popular gathering place for wappato. The Duvall area was known for cranberries. Sojourns to take full advantage of these resources were regular but of short duration. Portable shelters were erected, packed up and moved from place to place. The Snoqualmies reportedly maintained a more permanent longhouse near Lake Sammamish, which was a heavily used area (Turner 1976:9-10).

Animal Resources

There are only a few specific references in the ethnohistoric literature regarding the hunting areas of the Snoqualmie people. During a trip up the Snoqualmie River in 1927, Samuel Hancock camped with his Indian guides in the prairies along the river, where they found good hunting and fishing. Upon returning to Snoqualmie Prairie one evening, Hancock made the following observation with regard to his Indian companions:

> They had been amusing themselves at hunting and fishing during my absence, and had quite a respectable supply of game, deer, pheasants [ruffed grouse] and fish, and soon gave us a bountiful supper (1927:127-128).

Parenthetically, the Snoqualmie believed that if you ate pheasant when you were young, it would make you lazy like the bird (Turner 1976). The Indians with Hancock did not share the pheasant dinner with him (Hancock 1927:128).

The Snoqualmie men were known as excellent hunters, as were other upriver Indians of western Washington. Hunting trips lasted two or three weeks, and were frequent throughout the year except during the primary fishing periods. In addition, they seldom travelled or camped anywhere without the intention of

hunting if an opportunity presented itself. During trips to the coast for clams it was said "...the Snokwalm, in fact, kill more [deer] on the islands than do the Sound Indians themselves" (Gibbs 1877:193). The Snoqualmie also hunted elk in the Sultan River Basin, in Skykomish territory (Turner 1976:92).

Mountain goats were actively sought in the higher elevations. During his journey up the Snoqualmie River, Hancock (1927:124) encountered a group of five Snoqualmie Indians on their way home from a three day hunting trip in the mountains. The Indians related the rigors of the hunt, as the goats were only to be found on rocky precipices that were very difficult to reach. However, they were blessed with luck or skill, or both, because they returned with heavy packs, laden with twelve goats. Indian men used to ascend the South Fork of the river by canoes to get into the prime mountain goat territory of the headwaters (Snoqualmie Valley Historical Society n.d.), and in later years, men recalled goat hunting in the country around the North Fork (Clark personal communication 1983). Stampede Pass and Granite Mountain were also notable hunting areas around the turn of the century (Baenen 1981:448).

Plant Resources

Berrying and hunting trips were probably combined, at least to some extent. Indian women gathered berries in July at the lower elevations, and in August and September family groups made special trips into the mountains. At the summit of Snoqualmie Pass "...there were large quantities of berries which were of finer flavor and larger size than those growing on the lowlands" (Coleman 1932:252). Blue huckleberries were also gathered on Granite Mountain and Lookout Mountain, "...we would camp at a creek at the foot of the trail to Granite Mountain and get up early and walk up about 3 or 4 miles to the top." (Carpenter 1981:566). The Snoqualmie periodically set fire to their favored gathering areas to promote berry growth.

Temporary camps were established near the berry grounds. They may have been occupied from one to three weeks, depending on the harvest. Along with the shelters, processing racks were constructed for drying the berries. They were made of a wood frame structure, and fires were lit under the racks to facilitate drying. Such racks were seen near Chester Morse Lake about forty years ago. They could have been used for berries or fish, or both. Snoqualmie Indians specifically refer to Chester Morse Lake in reference to berrying, hunting and fishing camps (Lewarch 1978:28). A drying method popular with the Yakima Indians may have been employed by the Snoqualmie women as well. This method used the reflected heat from a log fire. The berries were spread out on a mat that faced the fire at about a 45° angle (Filloon 1952:5-6).

Berries were collected and stored in baskets. Because the Snoqualmie were so closely influenced by and frequently related to the Yakima Indians, it is likely that the folded cedar bark style of basket commonly associated with the Yakima was used in this area. This type of basket was easily made on-site, making it unnecessary to haul containers to the temporary camps.

> They were quite easy to make and took only an hour or two, once the bark had been brought into camp. These baskets ranged in size from one to ten gallons capacity and their construction allowed a free circulation of air to pass through the contents. Thus they were excellent containers

> for transporting the berries from the patch to their homes or to towns, where they were sold house to house or traded at stores for food and other goods.
>
> Needing a basket, a woman peeled from a live tree a strip of bark double the length and slightly wider than the diameter desired. Then she marked a sharp-pointed oval across the middle of the length of the strip. Along this line she make two parallel cuts about half an inch apart half way through the inner bark and removed this layer. This made a hinge so that when the two ends of the strip were brought together the basket was almost finished. The oval became the bottom and all she needed to complete the job was to take some laces made from the inner bark of cedar, fasten the sides together, and lace in a ring of cedar root around the top (Filloon 1952:8).

The prairies in Snoqualmie territory were especially popular for plant gathering activities. Blackberries, strawberries and a number of edible ferns grew at the prairie above Snoqualmie Falls (Coleman 1932). These resources were shared by the members of several of the villages, but the primary users were from the villages in the immediate area (Riley 1974:77). In addition, the prairies provided forage for horses (Indian Claims Commission 1974:423).

The Snoqualmie women began cultivating potatoes in the early contact period, and produced large quantities at Snoqualmie Prairie. "The potato fields of the Sno-qual-mish are as fine as any that I have seen in Washington Territory and the sight of them well repaid the troubles I had finding them out" (Jones 1857:7).

Fish Resources

From September through December fish were running in the river and its tributaries. A variety of fishing methods were employed; the most common and probably most effective was the weir "...which was erected each year for taking of principally king salmon and steelhead which served to feed the whole tribe" (Lane 1975:35). The weirs consisted of a two or three tripods constructed to span the stream, against which a series of woven sections, or wattles, were held in place by the current. A dip net was placed on the bed of the stream close to the wattle; as the fish were stopped, the net was raised, the fish removed and the net reset.

Fish were taken wherever feasible along the Snoqualmie River up to the Falls (Lane 1975:33). A tally of the aboriginal fisheries of the Snoqualmie people would include all the known village locations as well as additional places along smaller streams, and at the lakes. Cedar Lake was a well known fishing location; the Snoqualmies caught Dolly Varden at the upper end of the lake, using spears (Turner 1976:31). In the fall of 1856, Indian Agent Nathan Hill reported that large quantities of fish were being caught by the Indians who lived along the upriver stretches of the Snoqualmie River. At each fishery, the Indian women were busily engaged in drying the fish for their winter provisions "...salmon will probably run 'till the 20th of [December]. It will take some ten days after that to get them all dry..." (Lane 1975:34).

Communication and Travel

Travel routes and trade networks were well established between the Yakima and Snoqualmies. Within Snoqualmie territory, Snoquamie Pass and Yakima Pass were popular trails across the mountains. It is assumed that Stampede Pass was also used, because it appears to have been used during prehistoric times (see Section II). The Stampede Pass route may not have been well known during the ethnohistoric period, either because it was never popular, or because it had fallen from use by the time Europeans entered the area, or shortly thereafter. As mentioned earlier, the introduction of horses around 1760, the reduction of the population caused by disease epidemics, and the diversion of trade to the Euro-American established trading posts were important factors in changing the patterns of the Indians.

The Snoqualmie Pass trail was considered the "foot trail," and by the mid-1800s, the Indians claimed to have used this less often than Yakima Pass, the "horse trail." However, Snoqualmie Pass was apparently well known and was used prior to the introduction of horses, "...ever since the recollection of the oldest people" (Hancock 1927:121). The Yakima trail was a higher crossing of the Cascades, but it was less obstructed by downed timber and thick underbrush (Prater 1981).

The Snoqualmie Pass Trail followed the general route of the South Fork. The conditions were described by Major Van Bokkelen in 1856, as he attempted to scout for a location to post sentry during the Indian Wars:

> I went with Capt. Beam and his company by the foot trail from Ranger's prairie, sending the pack train...by the horse trail on Cedar Creek. After traveling a mile through the bottom I came into a prairie of fine grass, about two and one-half miles long and three-fourths wide. After leaving the prairie I went through the timber for a mile and struck a burnt prairie with rock soil about three miles long, after leaving which I commenced a gradual rise to the summit of the pass, which thirty-five miles from Ranger's prairie the whole trail is a gradual rise, but greatly obstructed with timber and would require considerable labor to open. After reaching the summit, we lost the old Indian trail, and I took a road with a gradual slope to the south, with the intention of striking Cichelass Lake, which I struck after traveling fourteen miles. About four miles before I struck the lake I found an Indian trail which I followed to within one hundred yards of the lake... I should like to know if a white man has ever been through before...for we could find no signs...The trail at this place runs into the lake, and the Indians in using this trail must either cross the lake in canoes or travel round the shores of the lake in the dry season (Ferrell n.d.)

Edmund T. Coleman, an avid climber who spent much time in the western Washington Cascades, described the Indian foot trail across Snoqualmie Pass and its relationship to the then-popular Snoqualmie Pass Wagon Road. He stated that the Indian trail was impractical for horses and "now abandoned" (circa 1875). According to Coleman's account, the Indian trail paralleled the road to

the south, diverging "from the present road to the south-east at a point about four or five miles below the summit of the pass on its western side, and debouches on the western side of Lake Kitchelas" (1932:246). Coleman deduced from Van Bokkelen's description (above) that Van Bokkelen was following the Indian foot trail when he traveled through Snoqualmie Pass.

In 1853, George B. McClellan was assigned to search for a railroad route across the Cascades. He hired Indian guides to assist him in this task. They followed an Indian trail as they approached the crest from the eastside. After reaching a pass, the party dropped down into the Cedar River drainage, the clue to the fact that they actually made a crossing of Yakima Pass, although McClellan thought he was crossing through Snoqualmie Pass. McClellan judged the western descent of the trail to be too steep and not practical for a transportation route.

Abiel Tinkham, McClellan's successor in this assignment, also hired Indian guides on the eastside, and was also led over Yakima Pass. He observed: "The Yakima Indians with me who were well acquainted with the route both in summer and winter, cached their snow-shoes only eighteen miles west of the summit...(Stevens 1855b:186). In both cases, the Indians told their employers about the foot trail to the north (Snoqualmie Pass), and suggested that it may be used as an alternate route through the Cascades.

These descriptions are informative in that they illustrate the degree of familiarity the Indians had with trans-Cascade travel routes during this period. These trails served as the basis of a communication network between the eastside and the westside groups. Strong ties existed between the Yakima and Snoqualmies, through kinship bonds and commerce. In reference to the Snoqualmie, Indian Agent Simmons commented:

> They are nearly related to the Yakimas and Klikitats by blood, and are sometimes called Klickitats... They cross the Cascade Mountains frequently to visit their relations (Simmons 1858:586-87).

The Yakimas often spent the winter in the milder climates of the westside and when McClellan visited the Snoqualmie village at the falls he noted that it also contained four Yakima houses (1855:202). The Wenatchi Indians also travelled across the crest, and their presence in the western drainages is documented as well:

> Trading parties of Wenatchi...went toward the coast by way of the Yakima, Snoqualmie and other passes through the Cascades, where they traded with Snoqualmie, Snohomish, Nisqually, Puyallup and Cowlitz (Teit 1928:121).

Hancock presented a slightly different interpretation when he wrote the following description while camped along the Cedar River trail near Yakima Pass:

> ...we were not exactly safe at our present camp, as the Indians from the other [east] side often came over, who were not on friendly terms with the Snoqualmies, and stole horses...in fact, my present camp was immediately on the

> great thoroughfare for all tribes east and west of the mountains... (Hancock 1927:126).

Historian David Buerge outlined the two major trade routes across the Cascades beginning near today's Seattle waterfront (Margeson 1982). Both trails went around the south end of Lake Washington to the present location of Renton, where one fork continued southeast toward the Cedar River and on to Yakima Pass. The other fork headed northeasterly from Renton toward Issaquah to Fall City, where it followed the river and picked up with the current Interstate 90 route to Snoqualmie Pass.

Not all travel was overland; canoe travel was common along the navigable portions of the rivers. With a combination of portage and paddle, the Snoqualmies readily moved about their territory. As Hancock (1927:120) learned, it was not uncommon for the Indians to portage their canoes around the falls during a journey along the Snoqualmie River. The Snoqualmies also kept canoes at Mercer Slough for use in the vicinity of Lake Washington. They probably also used these to continue west to the Sound, after portaging between Lakes Washington and Union.

Another well documented trade route existed down the Snoqualmie to the Snohomish River, where the Snohomish Indians resided. This drainage provided a natural corridor for trade between the Yakima and Snohomish, passing through Snoqualmie territory. Tweddell indicates that the Snoqualmies controlled the trade between the Yakimas and the Puget Sound groups (1953).

Trade items that moved inland from the coast included clams, smelt, herring and shells. Shells were used as an exchange medium and increased in value as they moved toward the interior. Some of these items, such as clams, were passed on in trade with the Yakima. The Snoqualmie added berry loaves, dog wool, wappato root, and slaves, which were acquired from other tribes by raids.

Haeberlin and Gunther (1930) mention that the flint arrowheads used by the Puget Sound groups were bought from the Snoqualmies who made them. Although there are some sources of chert in the formations of the southern Cascades, specific quarries are seldom identified in the literature with the exception of one "near North Bend" (Murphy 1976:18). The Snoqualmies where familiar with a variety of other geologic resources in their territory, and were often employed to guide the white settlers to sources of iron ore and graphite. The Indians used iron ore for paint; when mixed with deer grease it served both as ornamentation and for skin protection. Goldmeyer Hot Springs were apparently familiar to them as well, most likely for medicinal purposes (Heller n.d.).

Both red paint pigment (hematite, limonite) and flint were traded into Snoqualmie territory from the Yakimas, along with other resources such as venison and dogbane fibers, used for fishnets (Margeson 1982).

Due to the local abundance of deer, elk and goats, and the Snoqualmie's superior hunting skill, they had enough animal hides to engage in a lucrative trade with the downriver groups (Haeberlin and Gunther 1930). The Snoqualmie were said to "...subsist more than any other tribe by the chase, and many of them are skilled in the use of fire arms" (Jones 1857:6). A large rock south of Monroe was a meeting place for the trading tribes (Baenen 1981:449). Mountain goat wool and skins were items that easily made the transition to the

European market. The potatoes grown by the Indians in the prairies were also traded in later years (Snoqualmie Tribe 1959:12).

The Reservation Era

To assist in the Treaty negotiations, several villages along the same drainage were often united into bands based on language, kinship and cultural traits in common. They did not share a central leader; as with all Puget Sound groups, each village was autonomous. Fourteen signatories are identified in the Treaty document as Snoqualmie. Lane remarked:

> ...the assignment of "chiefs" and "head chiefs" who appear on a list of [Treaty] signatories was an arbitrary assignment for the convenience of the treaty commission. The men who were named on the treaty document as chiefs and sub chiefs were probably important men but they were not necessarily the most important men nor were they the only leaders in their communities (1975:31).

At least two men were influential among the Snoqualmie people at the time of the Treaty. Patkanim and Sonowa are both referred to as Chiefs of the Snoqualmie; Sonowa represented villages upstream of the confluence of the Snoqualmie and Tolt Rivers, and Patkanim represented those downstream. Patkanim served as a representative treaty signatory for the Snohomish, Snoqualmie and the Skykomish, although it was recognized, even then, that these groups were not governed under one leader (Gibbs 1855:432). He was described as a "wily and shrewd fellow" who, with his band "are better able to give us trouble than any tribe on the Sound" (Indian Claims Commission 1974:429). In contrast, Sonowa was known as "one of the very best Indians in my district" and he and his band were "allies" of the United States Government during the Indian conflict (Lane 1975:7; Simmons 1858).

Initially, it was intended that the Snoqualmie, Snohomish and Skykomish Indians be removed to the Tulalip reservation near the mouth of the Snohomish River. It was planned that they were to go to a larger, central reservation meant for all the Indians of western Washington Territory, which was never established. The location of the Tulalip Reservation was not well suited for the inland oriented tribe, and Sonowa made numerous pleas for the establishment of a reserve on the prairies in the vicinity of Snoqualmie Falls. Simmons, Agent for the Puget Sound District, in recommending the establishment of such a reservation, stated:

> There is a portion of the Indians in my district whose homes are high up on the rivers, principally on the Nisqually, Puyallup, and Snoqualmie... They are a more athletic and independent race of men, but are more closely wedded to their manners and customs, and superstitions; and are less docile, and much harder to manage. They cross the Cascade mountains frequently to visit their relations, and are, to some extent, imbued with the hostile feeling that still exists among them... The Snoqualmies...differ in appearance, in their mode of living, and in many other respects from the salt water tribes, and I do not think they can be brought to live in harmony together, at least for some years to come (Simmons 1858:577-587).

According to Lane (1975:8), Sonowa with his band may have moved down to the Tulalip Reservation when it was originally established, but apparently they did not remain. This reservation had neither adequate provisions nor land to support all the Indians assigned to it. While some Snoqualmie stayed at Tulalip, and some dispersed to other reservations, it appears that many returned to their traditional upriver territory. In 1919, Special Allotting Agent Charles Roblin found a number of Snoqualmies living in the vicinities of Tolt, Fall City, and other towns of that drainage, working in the logging camps and saw mills (Lane 1975:11).

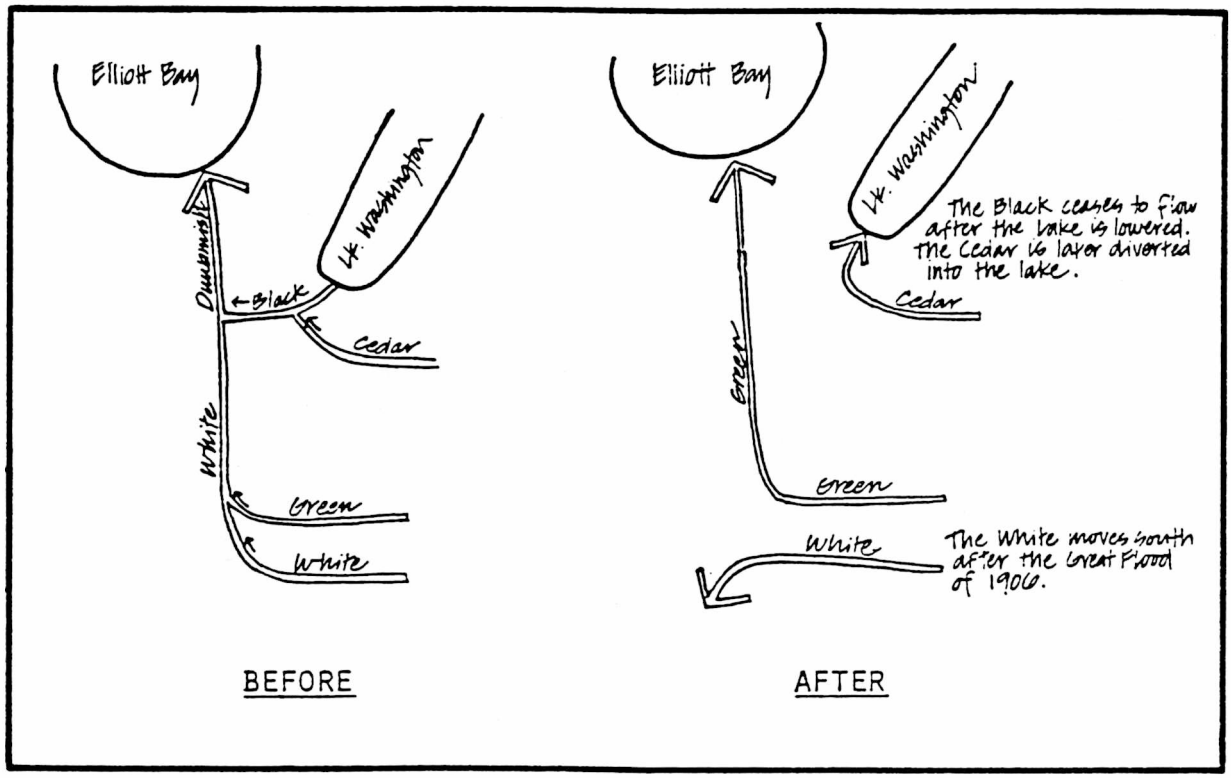


Figure 3.7 Changes in the Green River drainage during the last 75 years (from Dalan et al. 1981).

The Muckleshoot Indians

Sociopolitical Organization

The economic, social and political unit that we refer to as the Muckleshoot Tribe did not exist during aboriginal times. There are several current theories on the origin of the Muckleshoot as a tribe, many of which are made more confusing because of the changes in course, and consequent renaming, of the Green-Duwamish River. Before 1906, the Green River joined the White River near the city of Auburn and together they formed the Duwamish River and flowed north into Elliott Bay. The present Green-Duwamish River valley was known at that time as the Lower White River. The southern diversion of the White River to the Stuck and Puyallup Rivers occurred in 1906 when flood debris blocked the northern course (Figure 3.7). The diversion was made permanent by subsequent flood control activities.

The Muckleshoot Tribe consists of the descendants of those people who lived along the Green and White Rivers. In addition, some of the present day Muckleshoot are descendants of those Indians who made their homes along the upper Puyallup drainage: "the Muckleshoot Reservation was an additional reservation established especially for the White River, Green River and upper Puyallup Indians" (Lane 1973e:33). The upper Puyallup village of South Prairie is included in this discussion because of the close interaction and frequent intermarriage among these villages.

Territory

The present day Muckleshoot Tribe is primarily the result of the efforts in 1855-56 to relocate the Indians who lived in villages along the Green, White, and Upper Puyallup Rivers. The U.S. officials felt that this was necessary to protect themselves from any hostile uprisings. Eventually, the movement facilitated the establishment of reservations as provided for in the Treaties:

> Another post was established during the war at Muckleshoot, a point in the interior, about 25 miles from Steilacoom. At that station were collected some 300 of the most troublesome Indians, consisting of the Upper Puyallops, the Nooscoopes and Green [White?] River Indians. These tribes still reside in that vicinity (Indian Claims Commission 1974:113).

When Treaty negotiations began, George Gibbs, gathering information for Governor Stevens about the distribution of Indian populations in Washington Territory, noted three bands within the ascribed Muckleshoot territory: the Smal-ka-mish at the head of the White River (or Smalh-ko); the Skope-ah-mish who lived along the Nooscoope or Green River; and the Se-ka-mish from the main White River (Stevens 1855a:436). These same bands became known by several different names variously spelled. The Indian Claims Commission (1974:125) identified the following names as representing the Green and White River inhabitants: Green River - Skopamish, Sko-pabsh, Skopeamish, Niskap, Neccope, Nescope, and Nooscope; White River - Smulkamish, S'Balacho, Smalk-kah-mish, Smulcoe, Sobal-Ruck, Klickitats, Niscaps and Skopamish.

The suffix -amish (sometimes -abc or -Ebc) when used in conjunction with a place name means "people of." Thus,

> ...the people on Green River are known as Skop^{3}a'bc, from a word Skop "first big and then little," referring apparently to the habit Green River has of rising and falling suddenly. It is not a glacial stream, and the volume of water is quite variable, depending on the rains. The "tribal" name Skop^{3}a'bc (Skopamish) might accordingly be rendered "People of the Variable Stream" (Waterman n.d.:84).

In an effort to establish their right to lands through proof of aboriginal possession, the Muckleshoot Tribe defined their territory as:

> Commencing at the southwest corner of Township 21, Range 5 EWM; thence north through the western edge of the town of Auburn to the town of Pialachie; thence to the northwest tip of Lake Cow [Lake Meridian]; thence to the north tip of Lake Sawyer; thence to the town of Kangley; thence to the peak of Mt. Lindsay; thence to the peak of Goat Mountain; thence to Stampede; thence along the crest of Cascade Mountains to Naches Pass, to Chinook Pass to the peak of Mt. Rainier; thence north to the headwaters of the West Fork of White River; thence along the divide between tributaries to the White River and tributaries to the Puyallup River to a point one mile south of the town of Buckley; thence to the place of beginning, consisting of 491,520 acres more or less (Indian Claims Commission 1974:123).

The Muckleshoot were consistent with other Puget Sound groups in their concepts of territory and boundaries. They viewed their resource use area as their "territory," but did not intend this interpretation to connote exclusive right of ownership. Within close proximity to their villages, the Muckleshoot maintained closer control of the resources, but permission of use was usually granted to amiable neighbors or relatives. The more distant lands of Muckleshoot territory overlapped with that of neighboring tribes who may have used it as frequently or intensively as the Muckleshoot. The definition of their use-area was directly determined by resource availability or ease of travel:

> ...this tribe of Indians used all parts and portions of their said tribal lands; burned the underbrush so as to promote the growth of great tracts of immensely valuable timber thereon; cultivated and raised potatoes upon many tracts and portions thereof for their livelihood; hunted over all portions of the lands not used for growing potatoes thereon; dug roots; picked berries for food; raised herbs from which they obtained fibre for clothing, ropes, nets and snares; and fished in all the rivers, brooks and tributaries thereof (Griffen 1927).

The Muckleshoot spoke the Nisqually dialect of Puget Salish, and in this way were affiliated with the other eastern Puget Sound tribes south of the

Snohomish. All Puget Salish was mutually intelligible, although differences could occur between drainages and even between villages along the same drainage. Dialectical differences did not pose a barrier to communication or trade between groups. In addition, the Green-White River people had close contact with their Sahaptin speaking neighbors east of the mountains, resulting in numerous bilingual speakers among them (Lane 1973e:8).

Villages

Permanent winter villages of the Muckleshoot tribe were located on the main rivers and major tributaries. Villages are recorded for the Green, White, Stuck, Puyallup and Carbon Rivers (Table 3.11). River and stream confluences that were significant fishing areas were often the sites of winter settlements. Five of the thirteen permanent villages identified in Table 3.11 are associated with aboriginal salmon fisheries. The largest and most important village was at the former confluence of the Green and White Rivers.

Collectively known under the term for the drainages, such as Skopamish (Green River) or Smulkamish (White River), the villages did not constitute a political or kinship unit. Rather, there were several autonomous villages which formed the larger group, all along a short stretch of river:

> Thus, the people at the Forks of the Green River and White River are the Ilalqo-abc. The Soos Creek were the Sus-a'bc. At Qwe'qult were the Qwe'quultabc; above them were the StEqʷdEbc: above them again the DutLʔEpEbc. A small group camping at Kʔa'dEb on the Muckleshoot plateau were the KʔadEba'bc (Waterman n.d.:84).

According to archaeologist G. Hedlund, who has conducted research during the past decade within the Green and White River drainages, there were villages along the Green River as far inland as the present site of Kanasket. Hedlund also suggests that there was an Indian village located at the current town of Lester. "The Lester site is said also to be the location of a Sahaptin speaking village, probably Kittitas [Upper Yakima]" (Hedlund 1979:1).

In addition to winter village sites, the Muckleshoot occupied several temporary camps during the course of their annual subsistence round. The people of the Green River reportedly visited the village at South Prairie and profited from the harvest of salmon from South Prairie Creek (Carter 1978:21). They were closely affiliated with the Puyallup Indians who made this the location of an important summer village. Muckleshoot Prairie was also visited regularly prior to the establishment of the reservation. Here, the Green and White River people found forage for their horses, and probably also harvested certain roots and plants that grew there. Waterman states that there was a temporary camp at "Muckleshoot Plateau...KʔadEba'bc" (Muckleshoot Prairie?) (n.d.:84).

Although all villages were originally autonomous, by the time of the Treaties, there were several men who exhibited a certain amount of influence over the collective. These men are sometimes called "chiefs." Chief Nelson, a Green River Indian, played an agressive role in the Indian Wars, but the extent to which he truly represented the Muckleshoot Tribe is not known. Since Treaty times, other Muckleshoot Chiefs have included such figures as Tonasket, Whatcom, Pachnekian, Mr. Peters and George Henry Nelson (Noel 1980:135).

Table 3.11 Historic Muckleshoot villages and camps.

NAME	DESCRIPTION
Yilál-go or lla'l-go	A large village located on a point of land between the Green and White Rivers, at their junction. Seventeen houses, averaging 36 x 60 feet.
Susábc	A village site on Suise (Soos) Creek. Location of a salmon weir. Two houses.
SkgE'bEd	A village site one mile east of Soos Creek, on the Green River, two houses.
Tca'kwab	A village site along an ox-bow of the Green River on what its occupants referred to as "Dog-salmon Creek."
Stsa'kwc^{1}d	Village site along the south side of the Green River, established on a level flat at the mouth of a creek, where the trail from Muckleshoot Prairie descended to the river.
Tsqwtsq'bats	Site of an important settlement on the upper Green River.
Sbalxgóabc	Village site on the White River above its confluence with the Green River.
DExk	Village site on the upper White River, adjacent to a spring. Its location with respect to the drainage is uncertain.
Sqw^{3}ElEts	Village site at Boise Creek, on the upper White River. Translated, its name means "huckleberry bush."
StEx	Village site on the Stuck River, north of the present town of Sumner.
Sq'wɑ'dɑbc	Village site located on the upper reaches of Wappato Creek.
ts'uwádiabc	Village site located on the Puyallup River above its confluence with the Carbon River. This is the location of a salmon fishery.
tuwháq'hɑbc	Village site above Orting, where Voigt Creek intersects the Carbon River.
do'tuq	A summer village of the Puyallup Indians situated at South Prairie below the confluence of Cole Creek with South Prairie Creek.
K3adEba'bc	A temporary camp was located at Muckleshoot Prairie.

(Smith 1941:209; Waterman n.d.)

Population

In January 1854, George Gibbs recorded the following population figures for the Indians of the Green and White River drainages: Smal-ka-mish - 8; Skope-ah-mish - 50; and Se-ka-mish - 30; totaling 88 people (Stevens 1855a). Considering that the knowledge of upriver villages at the time was scant, it can be assumed that these figures are low. Later reports indicate a somewhat larger population. An 1856 report to Governor Stevens suggested that the Green River Indians alone ("Nelson's Band") number about 150 people. Three months later, a local Indian Agent estimated Nelson's band of Green River Indians to be no larger than 100 people ("about 40 men") (Lane 1973e:38). Possibly the most accurate report of the population of Muckleshoot appeared in a report of the Commissioner of Indian Affairs in 1857:

> The Muckleshoot [Reservation] is also provided for in the treaty of Medicine creek, and is the proper locality of the Tooahk, or Upper Puyallup, the S'Balacho or White River, and the Nooscope or Green River Indians, being in all about three hundred souls (Goshnell 1857; Lane 1973e).

Seasonal Patterns

Testimony presented before the Indian Claims Commission during the second quarter of this century comprises most of the available information regarding the aboriginal resource use of the today's Muckleshoot people. The inhabitants of the Green, White and Upper Puyallup Rivers utilized the riverine, marine and mountainous environments to fill their food and material needs. They relied heavily on hunting and fishing, but also made regular trips to outlying areas to take part in other subsistence activities such as the harvest of berries or clams. Two reported clamming beaches of the Muckleshoot were Three Tree Point and the location of today's Salt Water Park east of Kent. They travelled to Redondo Beach for devilfish (octopus) and squid. The people of the Green and White Rivers visited Gig Harbor for saltwater huckleberries, and gathered prairie berries, a type of blueberry, near Orting. Cranberries were found and gathered in the Enumclaw area (Noel 1980:29-31).

Plant Resources

With the coming of spring, the Muckleshoot gathered the first green shoots of the berry plants and ate them fresh. By late summer, salmonberries and elderberries were ready to be harvested. Berries were an important dietary staple and could be processed to keep through the winter months. Towards the fall, blackberries, salalberries, and huckleberries ripened and were ready to pick. In August, trips into the mountains for berries included sojourns at Huckleberry and Grass Mountains (Indian Claims Commission 1974:115). As late as 1928, families could be seen climbing the Slippery Creek Trail to harvest huckleberries on Huckleberry Ridge in the fall of the year (Enumclaw Public Library 1941:104).

The Muckleshoot established temporary camps near the berry fields. For three weeks to a month, the camps were alive with the activities of harvesting and

processing the berries. Wooden racks had to be constructed, and the fires kept burning. Another technique for berry drying, which utilized the reflected heat from a burning log, might also have been employed (Filloon 1952). As the women were involved in these activities, the men spread out to the surrounding countryside to hunt. Goat hunting could have easily been combined with berrying, as both required travelling to the higher elevations of the Cascades during about the same time of year. Allan Smith suggests, however, that hunting was a secondary activity (1964:197). After about 1750, the use of horses for travel provided the means for more people to travel further, stay longer, and possibly bring home heavier loads than before.

Other plant resources utilized by the Muckleshoot included bitterroot and camas obtained from east of the mountains. They also took part in the harvest of root plants from the prairies of the lower drainages, and cultivated potatoes at these areas in later years.

Animal Resources

Deer, elk, bear and mountain goats were hunted in the eastern portion of the claimed Muckleshoot territory. With the exception of mountain goats, the Muckleshoot did not have to travel far from their villages situated on the banks of the rivers to find adequate quantities of game. The residents of South Prairie, for example, hunted in the territory between the Carbon and White Rivers. However, with the addition of grouse, these animals were probably also taken near the berry grounds if the opportunity arose. Deer and elk were hunted with bows and arrows, and pitfalls were constructed to trap bears. The Muckleshoot were of the opinion that bear meat obtained during the berry season was undesirable due to the fatty condition of the animals in the fall (A. Smith 1964:192).

To capture mountain goats, the Muckleshoot set loop snares along the rocky ridges of the Cascade crest. Here they met and hunted with Indians from eastern Washington with whom they shared the territory between their respective villages. An informant of A. Smith stated that mountain goats were also hunted north of the present Mt. Rainier National Park boundary, on the west side of the White River (1964).

Several of the ethnohistoric documents also mention that the Green-White River Indians hunted mountain sheep in their aboriginal territory. Mountain sheep are not indigenous to the western flank of the Cascades, although the Muckleshoot may have travelled east of the mountains or to the Mt. Rainier region to hunt this animal (A. Smith 1964:209). Some of the references which suggest that mountain sheep were hunted in the Cascades (e.g. Indian Claims Commission 1974:116), are probably making an incorrect reference to mountain goats.

Fish Resources

Fishing was an important pursuit along the mid stretches of the Green and White Rivers before the turn of the century. By late spring, the attention of the men turned to the construction of weirs. They had to be made to last the season, which was almost continuous from spring through fall:

> At that time the spring salmon [chinook] were beginning to run, to be followed in their season by the silvers, the dogs and in alternate years, the jumpbacks [pinks]. During all seasons of the salmon run the people busied themselves trapping, processing, and storing the salmon for winter use (Ballard 1957:43).

Salmon weirs were constructed at several places along the rivers where the fish runs were large, but they were not necessarily built at the same location every year:

> On Green River certain spots were customarily used for salmon trapping from year to year. One of those spots bears the name sts'lósidali, "place of the salmon weir." The sites used were not restricted to any certain places, however, but could be chosen to suit the convenience of the user. During the hop picking season a weir might be set up near where the pickers were encamped (Ballard 1957:44).

The Wilkes exploring party also reported a weir just above the confluence of the Carbon and Puyallup Rivers (Meany 1916). This is probably a reference to South Prairie Creek, and may have been at or near the South Prairie Creek village. Locations along the White River were also known. At the end of the season the wattle, which represented hours of work by the women, was removed from the weir and kept for the following year. The tripods were newly constructed each year (Ballard 1957:40).

Two other traps were used. Funnel snares and grill traps were set up in the spring to catch fish swimming downstream (Ballard 1957). Ethnographer Arthur Ballard reported a funnel snare "in a stream leading to White River near the southeast corner of the Muckleshoot Reservation." A grill trap and smokehouse were located at the mouth of Newaukum Creek, about three miles southwest of Black Diamond (1957:42-43).

Ballard described another fishing location about a mile west of Auburn (1957). Located on a tributary to Mill Creek, this may have been just on the outside margin of the territory ascribed to the Muckleshoot. Traditionally, there was considerable intermarriage between the people from the Green, White, Cedar, Black, and Stuck River drainages, and the resultant co-utilization of resources was consistent with the patterns described for other western Washington Indians. With regard to the boundaries between the Muckleshoot and the Duwamish, one informant stated "there is an understanding between the fishing grounds" (Griffen 1927).

The Muckleshoot people also took fish from the freshwater lakes of the territory. Lake Washington was a favored locality, but fish were taken from all the accessible lakes including Swan Lake, Mud Lake, Spoon Lake, Lake Morton, Sawyer Lake, Jones Lake (near Black Diamond) and Black Diamond Lake (Carter 1978:23). The Cedar River and Lake Washington were especially noted for land-locked salmon, which was not available in other drainages (Lane 1973f:13).

> A small salmon was said to live permanently in Lake Washington, spawning in the creeks which emptied into the

> lake. The Duwamish of that section, and even those at the intersection of White and Green rivers, were said to prefer this salmon to that which entered the rivers from the Sound. They were boiled fresh or were cured. For curing they were slit down the ventral side, the entrails removed, the bone remaining, and were smoked heavily. These smoked lake salmon would keep as well as any smoked salmon. They were eaten like cured herring, i.e. smoked and then toasted (M. Smith 1940:236).

Generally, salmon were dried for winter stores. Any surplus was hard-smoked to be used in trade. Of the several species of salmon, dog salmon were said to be the best for preserving; because of the the lower fat content they could keep for a relatively longer period.

Communication and Travel

The White and Green River Indians operated a trading system with their neighbors to the east, primarily by way of a trail through Naches Pass. The general route is known from a description of the trail written in 1841 by Lt. Robert E. Johnson of the Wilkes Party (Meany 1916). From the west, the trail began climbing into the foothills along the Puyallup and Carbon Rivers. It turned north at South Prairie Creek to the White River, and then stayed close to the Greenwater River until it ascended the ridge toward the Pass. The trail is described as being obstructed by many large trees which had fallen across the trail and were "impossible to see over... even on horseback" (Johnson 1845). It was noted by one early traveller that the descent on the east side was easier than on the west, mostly as a result of the many mudholes encountered (Colemen (1932:253). A similar observation could be made today.

The Muckleshoot travelled across Naches Pass to take part in the harvest of certain roots that were not available on the westside. However, the Plateau Indians crossed the Cascades more often than their westside neighbors. The Yakima brought with them root cakes, dried berries, Indian hemp for sewing nets, dressed skins, bows and sometimes horses to exchange for the fish, shells, basketry, clams and roots of the westside. The Yakima freqently arrived west of the divide to spend the winter at villages, such as the one at "Boyce" (Boise) Creek on the upper White River (Ballard 1952:75). "In later years, when farmers took up hop growing, the Indians would come over in strings a mile long to pick hops" (Enumclaw Public Library 1941:33).

Another trail is reported to have followed the south side of the Green River across the Cascades, probably at Stampede Pass. A fork of this trail also branched off and paralleled Smay Creek "...leading to a Meadow Pass-crossing of the Cascades. Within historic times, a cabin was situated beside the creek to provide overnight shelter for excursions of these Indian groups or individuals" (Carter 1978:24).

Throughout the Indian Wars of 1855-56, the Indians trails were of great concern to the military. They constructed blockhouses at strategically located points in the Cascade foothills to control the contacts between westside Indians, who were generally considered friendly, and eastside Indians, who were viewed as "hostiles." There appears to have been considerable use of the White River

Trail(s) during this time, and "on the Green River, under the mountains, [there were] various camps of the enemy that had been abandoned not over a month since" (Meany 1916:335).

In 1909, some miners found evidence of an Indian hunting camp near the Naches Pass meadows, "a paradise for the Indian at this time of year (fall) and from what I can learn has been hunted by the Muckleshoot for unnumbered generations" (Hedlund 1973:29). Another trail which provided access to the hunting grounds followed "from Muckleshoot [Prairie], up the north side of Mt. Enumclaw up Huckleberry Prairie to the summit" (Noel 1980:135). From the present day Mt. Enumclaw, a natural ridgeline between the two rivers ascends steadily, without much drop in elevation, to Naches Pass (Atkinson personal communication 1984). Based on topography alone, A. Smith (1964:239) proposed two ridgeline routes that may have provided access to the hunting grounds on the northern slopes of Mt. Rainier: Huckleberry Ridge and Fern Ridge. To these may be added the possible trail routes along Dalles Ridge, Independence Ridge and Carbon Ridge.

In the valleys below the mountains, the Muckleshoot depended on shovel-nosed canoes to carry them down the White and Green Rivers. As previously mentioned, before 1906 these two rivers were connected near the present location of Auburn and formed a natural travel corridor to Lake Washington. Canoes had to be portaged from there to Lake Union (or the present Portage Bay) before continuing out to Puget Sound.

The Reservation Era

When Governor Stevens was instructed to treat with the Indians of Washington Territory, it was the policy to make as few treaties as possible by consolidating small bands into large tribes. A chief was then appointed to represent these larger units. The three bands of the White and Green drainages identified by Gibbs (Lane 1973e; Stevens 1855a), the Skopamish, Stakamish and Smulkamish, were individually named in the preamble of the Treaty of Point Elliott, but no signatures at the close of the treaty are identified as affiliated with any of these bands. This situation has led to the speculation that the Muckleshoots, or the bands that comprise the present day Muckleshoots, were not party to the treaty. It is suggested that Governor Stevens considered Se-aa-thl (Seattle) as a representative chief of all the bands identified along the Duwamish drainage. It was with the signature of Se-aa-thl that the land was ceded (Lane 1973e). The consolidation of these groups under one headman was apparently made with the knowledge that there was "in reality very little connection with them" (Gibbs 1877:179). Lane notes that Se-aa-thl's role as a representative signator was probably not made explicit at the signing of the treaty (1973e:v).

The Muckleshoot Reservation was not established as a result of either the Point Elliott Treaty or the Medicine Creek Treaty. It was the result of a later meeting at Fox Island between Governor Stevens and the principal men of the Nisqually, Puyallup and Snohomish Tribes in August of 1956 (Indian Claims Commission 1974:113). After the recommendation received presidential approval, a reservation was established at Muckleshoot Prairie on January 20, 1857. "At that time certain Indians in the vicinity were removed thereto" (Indian Claims Commission 1974:113). The history of the reservation at Muckleshoot Prairie is particularly confusing because although it was authorized under the Treaty of

Medicine Creek, it was located on lands ceded under the Treaty of Point Elliott. In addition, the reservation was not given definite legal boundaries until 1874, eighteen years after it was established. People from both treaty areas moved to Muckleshoot and subsequently came to be known as the Muckleshoot Tribe (Lane 1973e:vi).

> The people of the Green River villages section [of the Duwamish drainage] were known collectively as the sqw pabc or Green River people. The Indians of Muckleshoot reservation, primarily the people of the White River section, included also Green River groups and the South Prairie, Puyallup village. There seems to be little doubt that these represented a distinct division (M. Smith 1940:16).

The term Muckleshoot (Mukl-shootl) was used as early as 1853 to refer to the prairie between the White and Green Rivers. "Mukl-shootl" may have its origin in the use of the prairie as a lookout point; or it may have been the Indian name for a medicinal plant that grew there (Noel 1980:5). Muckleshoot Prairie was the site of a military post and, when abandoned in 1859, it became the location of the reservation. Since Gibbs does not include this geographical term with his list of known Indian bands, it appears that there was not a village located at the prairie prior to the military movement (Lane 1973e:7). The Indians residing in the vicinity of the prairie gathered plants and grazed horses there, prior the the military establishment.

The first reported use of the term Muckleshoot for a group of Indians occurred in 1864, ten years after the Treaty. In 1870, "Muckleshoot Tribe" appeared in a Report of the Commission of Indian Affairs (Lane 1973e:ii). The Muckleshoot Reservation was established for the benefit of the Green River, White River and Upper Puyallup Indians, who did not want to leave their traditional inland territories for the reserves previously established on Puget Sound. Some Lower Duwamish people also moved to this Reservation. descendants of these groups comprise the present day Muckleshoot.

Summary

The ethnographic overview of the Mt. Baker-Snoqualmie National Forest briefly describes those Indian groups who made their homes in the upper reaches of the various rivers of northwestern Washington. The Indians of this region took part in a seasonal round settlement and subsistence pattern that included visits to Puget Sound, the upriver environments, the mountain slopes and across the Cascades to fulfill social and economic requirements. Although the patterns of settlement and resource exploitation were dependent upon many of the resources of the Forest, there were no rigid rules that dictated where the people would be at any particular time. Individuals were constantly faced with choices, and the annual activities of tribal members or families may have varied considerably.

There were optimum times for the exploitation of resources, and these determined the seasonal activities. Spring, summer and fall were the busiest times, when many species of plants, animals and fish were available in quantity. Where several resources were available during the same time of year, the most efficient use of the procurement excursions was made. Hunting and berrying trips to the mountainous regions of the Cascades were often combined. These trips may take a week to a month, or longer, and involved the gathering of resources, and usually the preparation and preservation of foods and materials for the winter supplies. The inland people were particularly skilled hunters, and often had an abundance of animal hides, meat and wool to trade to their downriver neighbors for food and materials unavailable, or of less desirable quality, in their own territory.

Tribal territory was viewed as the land and resources regularly used by a particular group. The social and kinship ties, strengthened by the high frequency of intermarriage between the tribes, served to open up wider territory, and thus a greater variety and quantity of resources, to those who maintained them. The resource exchange was an integral part of the social and economic system.

The overview identifies resources withing the Forest upon which these groups depended, either through direct exploitation or trade, and the locations where these were available. Deer, elk and goat hunting took place in the higher elevations in the fall. The gathering of huckleberries in the open areas of the mountains slopes and ridgetops was also a fall activity. Fish, the primary resource of the western Washington Indians, were caught in the lakes, rivers and streams of the Forest. These patterns provide an understanding of the ethnohistoric and historic periods. In turn, this information assists archaeologists in locating ethnohistoric and prehistoric sites and interpreting the lifeways they represent.

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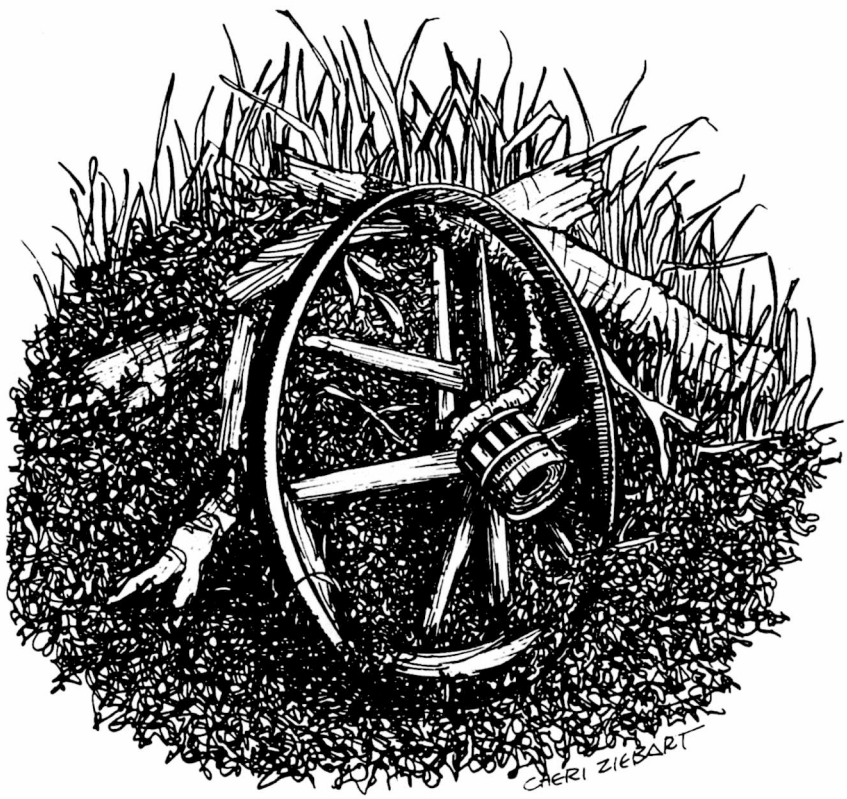
IV

HISTORY



Historical Overview

Introduction

The format of the historical overview emphasizes historic themes that played significant roles in the chronological development of the lands that became the Mt. Baker-Snoqualmie National Forest. A brief summary of each theme is presented as the framework for the identification, interpretation and evaluation of cultural resource sites. Activities that may have left physical evidence, that is, cultural resources, have been given special attention, where many other details have been selectively omitted. An attempt has been made to provide a sense of historical perspective by identifying state, regional and national trends that bear upon local history.

The available sources with which to write a historical overview are extensive, and were by no means exhausted during this research. If time had allowed, the research would probably still be on-going. Although every effort was made to produce an accurate historical summary, information contained in the original sources varies widely, conflicting at times. People see things differently, and report what they see in different ways. Each report has some degree of merit in the perspective it provides. The final phase of this research involved the compilation of an annotated bibliography. It can be used as a reference to gain a fuller understanding of the history of the Mt. Baker-Snoqualmie National Forest and in conducting research on specific topics. The challenge that we face in the future will be to inventory the hundreds of extant historic sites on the Forest in the context of the themes described in this overview, and to evaluate them within the broader scope of local, regional and national history. It is hoped that the overview will effectively provide the foundation for this research.

The Indian Wars of 1855: Cultural Conflict

Consequent to the Donation Land Act of 1850, settlement of the western Territories took place quickly. Under this Act, as amended to include Washington Territory in 1853, every white male settler who resided upon and cultivated land for four consecutive years was entitled to a quarter of a section if single, and a half of a section (320 acres) if married. By 1855, 1,018 claims had been taken in Washington, scattered widely over the territory (Raney and Raney 1973).

The Territorial Governor, Isaac I. Stevens, was directed by the President of the United States to treat with all the Indians of western Washington; Stevens was to unite the Indians into tribes for the purpose of negotiating a treaty and to make provisions to remove them to reservations located away from the centers of white population. In the winter of 1854 - 1855, Territorial officials acting on behalf of the United States met with Indian representatives at the assigned treaty grounds, and the Treaties of Medicine Creek and Point Elliott were drafted and signed. The treaties called for the Indians to cede their traditionally occupied lands in exchange for reserved lands. The treaties were to take effect immediately upon ratification by Congress, but the influx of settlers was not going to wait.

In the meantime, the Indians were expected to voluntarily move to temporary reservations. However, the designated lands were generally inadequate for the number of Indians assigned to them, and most were located on Puget Sound, far distant from the lands and resources of the Indians who lived within the Cascade province. This, coupled with the increased use of the Cascade area by miners headed for the gold discoveries near Colville and settlers destined for Puget Sound, caused heightened unrest among the Indian people. In September of 1855, a group of Yakima Indians attacked some miners travelling to Colville and launched the Territory into a seven month conflict.

The Yakima Indians were viewed by the United States as leaders in the aggression, and every effort was made to keep the pacific westside Indians sheltered from this bad influence. The Muckleshoot, Puyallup, Duwamish and some Snoqualmie caused particular concern in this regard. Because of their close relationship with the Yakima, it was thought that they might form an alliance. The Cascade passes became the focus of the military defense as the U.S. tried to monitor and control enemy movements through this area.

Four forts were built in the Snoqualmie Valley in 1856: Fort Tilton, one-half mile below Tokul Creek; Fort Alden, two and one-half miles above Snoqualmie Falls at what is now Meadowbrook on Snoqualmie Prairie (also called Ranger's Prairie because the battalion of volunteers were known as Rangers); Fort Smalley, on the South Fork of the Snoqualmie River near North Bend; and Fort Patterson at Fall City (Corliss 1972:24-27). By the time these were completed, however, there was little need for any military installations in the area, as military attention had been refocused on Naches Pass. Fort Patterson was apparently not even completed before the other three had been abandoned, and in turn, it was abandoned shortly thereafter (Corliss 1972:23).

The possibility of hostile Indians coming over to Puget Sound through Naches Pass also worried the territorial forces. By the end of the war, the

Washington territorial volunteers had constructed over 70 blockhouses, most on the west side of the mountains, as well as several stockades, forts, bridges and ferries. In the White River valley, these included forts at Connel's Prairie (Fort Hays), two located at crossings on the White River (Forts Pike and Posey), on South Prairie (Fort McAllister), and on Muckleshoot Prairie (Fort Slaughter) (Bonney 1927:210).

On September 27, 1855, a detachment was ordered to proceed through Naches Pass to assist in subduing the hostiles on the eastside of the mountains. Lieutenant W.A. Slaughter, accompanied by 40 men, crossed the pass but turned back after hearing that he was facing a large number of armed Indians: he "thereupon fell back to await further orders and reinforcements" (Bonney 1927:173). This announcement brought the citizens of Washington Territory to the realization that there was an imminent threat of confrontation, and they began to organize a force of volunteer soldiers. The Puget Sound Rangers, a group of about 45 men under the direction of Charles Eaton, received the following instructions:

> ...scout the whole country between the Snoqualmie Pass and the southern pass of the Cascades south of Mt. Rainier or Lewis river pass, looking into each of these passes and intercepting any Indians that may be found travelling the mountains from the seat of war, and also all who may be found communicating from the tribes inhabiting the country west of the mountains (Bonney 1927:174).

Hostilities increased that fall; there were numerous reports of Indian and U.S. military troup activities throughout the White River territory and through Naches Pass. In March 1856, two decisive battles were fought. The Indians were defeated by U.S. regulars and volunteers at White River and Connel's Prairie. Chief Leshi, a leader of the Puyallup Indians, was forced to retreat with 70 men, women and children through Naches Pass to Yakima territory.

> When Leshi and his followers...undertook that perilous journey through Natches Pass, in early March, to join the bands of related Indians, who were still on the warpath on the east side of the range, he...advised the others who had fought under his leadership - some Puyallups, Muckleshoots and Duwamishes - to make the best terms they could with the military chiefs, and go upon the reservations set apart for them (Bagley 1929:181).

In October, 1856, General James Tilton issued general orders disbanding the volunteers of Washington Territory. Growth of Washington territory, which had virtually ceased for the period of the Indian Wars, was again on the increase.

Transportation Opens The West

Naches Pass Wagon Road

The first non-Indian use of the Naches Pass Trail through the Cascades was probably by members of the Hudson's Bay Company, although the dates of the earliest use are not known. After Hudson's Bay established a fort at Nisqually on Puget Sound in 1833, there was an increasing need for some form of communication link between this area and the interior forts along the Columbia River.

Before long, Indian groups from across the Cascades began to make regular visits to the fort, travelling back and forth by way of Naches Pass. The news of the arrival of the supply schooner, Vancouver, spread quickly throughout the territory, and the Indians began to congregate at Fort Nisqually with skins to trade. It became such a popular gathering place for the local Indians that a palisade of log pickets was built around the buildings to control the Indians. "With the use of a heavy gate the company was able to control the number of Indians admitted to the store" (Bonney 1927:22). Shortly after 1840, Owhi, a Kittitas Indian leader from the upper Yakima Valley purchased several head of cattle at Fort Nisqually and drove them eastward across Naches Pass, which soon started a trend with other Indians (Splawn 1980:287).

Lieutenant Robert E. Johnson, of the United States Exploring Expedition under the command of Captain Charles Wilkes, was assigned to explore the territory east of the Cascades. He left Fort Nisqually on May 20, 1841 and reached Naches summit on May 29th. By that time, it was a well established route: "Although he was frequently desirous of shortening the road, by taking what seemed a more direct course, he invariably found himself obliged to return to the Indian trail" (Wilkes 1845:422).

Efforts to establish a wagon road across Naches Pass began in August of 1850, and continued to be a major objective of the settlers of the Puget Sound region for the next several years. They were afraid that without a direct transportation route, the communities of Puget Sound would forever be on the outskirts of the economic development of the territory. It was thought that if a wagon road could be constructed across Naches Pass and connect with the new segment of the emigrant trail at Fort Walla Walla, that it would surely entice more west-bound immigrants to the Puget Sound country instead of the Willamette Valley. In 1851, they made a plea to Congress for $100,000 for the construction of such a road (Payne 1972:3).

In January 1853, $20,000 was appropriated by Congress for the construction of a military road across Naches Pass. The task of surveying the route fell onto the shoulders of George B. McClellan who, at the same time, was leading an exploration of other Cascade Passes to the north to determine the most feasible route for a railroad. His orders from the Secretary of War, Jefferson Davis, were stated explicitly: he was to make the road passable in time for the expected arrival of emigrants in the fall (Davis 1853).

McClellan approached Naches Pass from the east, spent a day scouting around, and reported that it was not suitable for travel by wagon. By that time he was

running short on supplies, and sent Lieutenant Henry Clay Hodges with 50 packhorses, six soldiers, and 17 packers across the pass to Fort Steilacoom to replenish the supplies. McClellan spent $5,000 of the appropriation and turned to his other duties (Carter 1984).

The citizens of the Puget Sound settlements were still convinced that a wagon road should be built across Naches, and raised $1,200 for construction. Two work parties headed out in July of 1853, one to work on the road from the east, and the other to begin construction from the west. They were to meet at the summit. Each crew did some work, but neither met their objective. By the time they stopped work in early September, only a rough trail existed for the immigrants to travel that fall.

Lieutenant Richard Arnold was assigned the responsibility of completing the military road the following year. He took the remaining appropriation, $15,000, and attempted to complete some grading and rerouting of the road. Like McClellan, he was not impressed with the rugged Naches Pass route:

> Under the most favorable circumstances this part of the route will not be passable for wagon trains more than five months in the year. On my first reconnaissance (about the 28th May) I found four feet of snow for five miles, and in many places from six to ten. We were from seven in the morning until dark driving a small band of animals eight miles, and even then two of the packs were carried down the mountain by them. On my return after the completion of the work, the last of October, I found from one foot to eighteen inches of snow along the summit, thus showing that the observations of one season conclusively prove what is stated above (Arnold 1855).

No further efforts were made to improve the road, however, it continued to be used to a limited extent. The popularity of the Naches route dwindled because it was not maintained over subsequent years.

Longmire's Party

In September of 1853, upon word that there was a road leading to the Puget Sound region, a small group of emigrants left the Oregon Trail near Walla Walla and made their way northwest "...through the desolate lands of today's Hanford Reservation, gradually working their way to Wenas Creek, crossing the divide to the Naches River, crossing and recrossing it 68 times..." (Carter 1984). The group, consisting of approximately 175 people and approximately 35 wagons (estimates vary) was led by James Longmire.

After the long haul up to the summit, the party stopped to rest at Summit Prairie (Meeker 1916), known today as Government Meadows. They remained a couple of days before pressing on. About five miles west of the pass, they encountered a vertical cliff of about 30 feet; a way around this cliff could not be found. The party began to lower the wagons down with ropes. There are a number of variations of this story, including this most vivid description of the ordeal:

So the rope they had was run down the hill and found to be too short to reach the bottom. One of the leaders of the party (I knew him well) turned to his men and said 'Kill a steer;' and they killed a steer, cut his hide into strips and spliced it to the rope. It was found yet to be too short to reach the bottom. The order went out: 'Kill two more steers!' And two more steers were killed, their hides cut into strips and spliced to the rope, which then reached the bottom of the hill; and by the aid of that rope and strips of the hides of those three steers, twenty-nine wagons were lowered down the mountain side to the bottom of the steep hill (Meeker 1916:131).



Figure 4.1 Wagon wheel found on the Naches Trail, west of the pass, by Nevan McCullough. The remnants were given to the Washington State Historical Society Museum, Tacoma (photograph by Nevan McCullough 1938).

Whether or not this is true, no doubt the "Cliffs" presented an exhausting challenge. A wagon belonging to John Lane reportedly broke free and was smashed to pieces at the bottom (Washington Pioneer Project 1937). Lane later returned to the base of the cliffs to salvage the wagon parts (Meany 1922).

After they dropped down the cliff, they had to rough-lock the wheels for the continued descent into the Greenwater Valley. The trail along the Greenwater River made 16 crossings, and they crossed the White River seven times before arriving at their destination, the Nisqually plains.

The trail continued to be used after this historic passage, although it was never as heavily used by emigrant wagon parties as had at first been anticipated. Another group tried to cross in November of 1853, but was forced to abandon their wagons because of snow, and arrived at Steilacoom on foot with pack animals. Ezra Meeker, a pioneer of the Puget Sound area, left Steilacoom in September 1854 to meet and assist some relatives whom, he had heard, were out on the trail and short of provisions (Meeker 1916:122). On the first day of his journey, Meeker met a group of three women and eight children on foot, who had left their wagons and exhausted animals behind along the trail, but those were the last emigrants he mentioned until he had nearly reached the present town of Yakima. Meeker described the trail that he faced on the westside:

> I had passed through long stretches of forest so tall and so dense that it seemed incredible that such did exist anywhere on earth. And then, the road; such a road, if it could be called a road. Curiously enough, the heavier the standing timber, the easier it had been to slip through with wagons, there being but little undecayed or down timber. In the ancient of days, however, great giants had been uprooted, lifting considerable earth with the upturned roots, that, as time went on and the roots decayed formed mounds two, three, or four feet high, leaving a corresponding hollow in which one would plunge, the whole being covered by a dense, short evergreen growth, completely hiding from view the unevenness of the ground. Over these hillocks and hollows the immigrants had rolled their wagon wheels, and over the large roots of the fir, often as big as one's body and nearly all of them on top of the ground. I will not undertake to say how many of these giant trees were to be found to the acre, but they were so numerous and so large that in many places it was difficult to find a passageway between them, and then only by a tortuous route winding in various directions. When the timber burns were encountered the situation was worse. Often the remains of timber would be piled in such confusion that sometimes wagons could pass under logs that rested on others; then again others were encountered half buried, while still others would rest a foot or so from the ground. These, let the reader remember, oftentimes were five feet or more in diameter, with trunks from two or three hundred feet in length. All sorts of devices had been resorted to in order to overcome those obstructions. In many cases, where not too large, cuts had been taken out, while in other places the large timber had been bridged up to by piling smaller logs, rotten chunks, brush, or earth so the wheels of the wagon could be rolled up over the body of the tree. Usually three notches would be cut on the top of the log, two for the wheels and one for the reach or coupling pole to pass through (1916:129).

Meeker encountered his relatives, a group consisting of some 17 people, seven wagons and 50 head of stock, about 30 miles east of the Columbia River crossing at Wallula. He led them back to the Puget Sound country, without loss, but not without hardship. As described above, the trail was heavily covered with blowdown. Meeker tells an incredible tale of how they dealt with these obstacles:

> One day, we encountered a new fallen tree...a whopper, cocked up on its own upturned roots, four feet from the ground...in short order every available shovel was out of the wagons and into willing hands, with others standing by to take their turn. In a short time the way was open full four feet deep, and oxen and wagons passed through under the obstruction (1916:147-148).

This was the last emigrant crossing on record. The exploration and settlement of Washington Territory was slowed somewhat in the middle 1850s while Indian and white unrest shrouded the fledgling territory.

Meeker's descriptionsprovide some insight as to why the exact route of the Naches Pass Wagon Road, followed by the Longmire Party and others, might be difficult to discern today.

A trail is still visible through Naches Pass and continues to be used today. Almost 80 years later a road was finally built, not through Naches, but through Chinook Pass. This was known as the Naches Highway, also having been called the McClellan Pass Highway. In 1931, a 60 mile long and one-half mile wide corridor was set aside along the Naches Highway for the scenic and recreational enjoyment of the public. This was designated the "Mather Memorial Parkway," after Stephen T. Mather, the first director of the National Park Service, and the first to suggest that a segment of the approach highway leading to the Park be designated to preserve the natural beauty (McIntyre 1952).

Early Explorations

In the same year that Washington Territory was separated from Oregon Territory, and Isaac I. Stevens took office as Governor and ex-officio Superintendent of Indian Affairs of the newly formed territory, Congress appropriated $150,000 for the survey of four rail routes to the Pacific Coast. The amendment, as part of the Army appropriation bill, became law March 3, 1853. By the terms of this law, Secretary of War Jefferson Davis was "to ascertain the most practicable and economical route for a railroad from the Mississippi River to the Pacific Ocean" (Overmeyer 1941:6). Davis made assignments for the completion of a survey of each potential route, and responsibility for the northern route through the Cascades was given to Governor Stevens. The reports of the surveys were to be presented to Congress by the first Monday in February, 1854 (Overmeyer 1941:6).

Knowledge of the Cascade Range was scant at the time. A well known route could have been chosen down the Columbia River, but it would have meant a detour of nearly 350 miles to swing the railroad south along this route and then bring it back north to Seattle, considered the most likely terminus. This could not have been done without great expense. Therefore, Governor Stevens endeavored to find a shorter route through the Cascades. Recognizing the importance of this leg of the survey, Stevens decided to divide the task. He selected

another survey party to commence at Puget Sound and work eastward to meet his own expedition moving west. Brevet Captain George Brinton McClellan was commissioned to command the survey at the western end of the line.

Stevens also put McClellan in charge of locating a military road between Fort Walla Walla and Steilacoom:

> Among the other duties I wish to put into your hands is the construction of a Military Road from Fort Wallah to Pugets Sound: An appropriation for it has been made of $20,000, and the Secretary [of War, Jefferson Davis] has directed me to assign an Army Officer or Civil Engineer to the duty as my judgement might dictate. I am most desirous that you should take charge of the road, as it is on the line of one of the Rail Road Explorations, and I am sure instead of interfering with our general operations it will rather facilitate them (Overmeyer 1941:12).

McClellan also received instructions from the Secretary of War who outlined the task as one of completing a preliminary survey for the location of the route and awarding contracts for the subsequent survey and construction:

> It is important that this road should be opened in season for the fall emigration; you will, therefore, use every exertion to do so... Should it be found impossible to accomplish this, you will, at least, endeavor to fix the line of the road, especially through the Cascade Mountains, and to perform such work on the most difficult portions as will enable the emigrants to render the route practicable by their own exertions...(Davis 1853).

In a letter to McClellan dated April 7, 1853, Stevens gave a final word of caution:

> One more word about the Railroad Survey. We must not be frightened with long tunnels or enormous snows, but put ourselves to work to overcome them (Overmeyer 1941:10).

The trust that Stevens and others placed in McClellan to complete this assignment turned out to be ill-founded. This could not have been foreseen when the explorations for the railroad got underway in the spring of 1853.

McClellan chose to approach the Cascades from the east side of the mountains. He arrived in the Yakima drainage by way of the Lewis River south of Mt. Adams. McClellan ventured to survey the route for the military road across Naches Pass, but made the quick determination that it was too steep and rugged, and continued north to focus on a passage at Snoqualmie. He set up base camp on the north side of the Yakima River near the present site of Ellensburg (Overmeyer 1941:34). Following the Yakima River, he made a cursory examination of Yakima Pass believing it to be Snoqualmie Pass, and quickly reached the conclusion that it too was an impracticable route "...stating in his opinion, the snow in the pass was certain to cause trouble" (Bagley 1929:260). His premonition was not wrong, the snow would cause trouble for future railroads across the Cascades, but the settlement and development of the Puget Sound area would not be impeded.

An unsatisfied Governor Stevens dispatched Lieutenant Abiel Tinkham the following winter, to attempt the location of a railroad route across Snoqualmie Pass. He was to approach the pass from the east side, and McClellan was again instructed to meet this survey party from the west. McClellan was in the vicinity of Snoqualmie Falls and today's North Bend in January 1854, to complete his assignment. He attempted another ascent to the summit, but veered away from the Snoqualmie drainage and headed up the trail to the Cedar River. This time he realized his error and turned back when he reached Cedar Falls. He did not try again (Prater 1981:25).

Lieutenant Tinkham made the complete overland trek to Puget Sound where McClellan had failed. However, he too travelled through Yakima Pass, and not Snoqualmie, as he had intended. The eventual completion of a railroad across the Cascades was to wait another 30 years, and when the first train finally completed the cross-mountain run, it went through Stampede Pass. These well publicized explorations, however, were the foundation of future rail and road surveys and the eventual development of the modern transportation system.

Snoqualmie Pass Trail to Road

Early exploring parties were led across the mountain passes by Indian guides, retained on either side of the Cascades, depending upon where the ascent originated. Ethnohistoric reports testify that the Yakima and Snoqualmie Indians had long been using these trails as a part of a complex trans-Cascade trade network. Two trails associated with the Snoqualmie drainage were commonly used at the time of the first contact: one connected the Yakima and Cedar Rivers through Yakima Pass, the other crossed at Snoqualmie Pass tying the South Fork of the Snoqualmie River to the Yakima River system at Lake Keechelus. These were referred to as the horse and foot trails, respectively. Although both had probably been used since prehistoric times, the introduction of horses after about 1740 resulted in an increase in popularity of the Yakima Pass trail, its conditions being more favorable for horse traffic. The fact that the Indians used both passes led to confusion when the early explorers were trying to identify the best route for a railroad.

In the middle 1800s, the federal and territorial governments focused their attention on the expansion of railroads and military roads in Washington. A wagon road, seen by the Seattle-area residents as necessary for strengthening the economy of Puget Sound, was not a high priority for supplemental funding. In 1855, the settlers sent a small survey party out to begin planning for a wagon road across Snoqualmie Pass. Not surprisingly, they mistook Yakima Pass for the lowest route through the mountains. Soon afterward, people began to recognize the difference between the two passes, but because of the Indian Wars, the idea of a wagon road was to wait another ten years (Prater 1981:28).

A transportation system across the Cascades was again pushed to the forefront by the settlers after the decline of military activity in the area. Gold was discovered on the eastern slopes of the Cascades around this time, and every gap in the range was being used by miners from the Puget Sound country packing their supplies toward the promise of wealth. Several fair-sized pack trains passed through Snoqualmie in the summer of 1858, and reported the trail in good condition (Bagley 1929:263). Settlement began in the Snoqualmie Valley, in 1858, and centered around Ranger's Prairie above the falls (Bagley 1929:262, 781). In 1865, Seattle residents raised the funds to initiate construction of a wagon road from Ranger's Prairie (today's North Bend) to the east side.

Before this was finished, the first train of six wagons crossed Snoqualmie Pass from the east. The route was long and arduous; winter snows and runoff made repairs and additional clearing of the trail necessary each year. Broken wagons and abandoned supplies served as testimony to the difficult conditions encountered along the trail (Prater 1981:30). The route was shortened somewhat on the east side, by rafting across Lake Keechelus rather than taking the original trail along the west bank and around the south end of the lake.

The Legislature appropriated $2,000 for the road in January 1867, on the condition that King County would match the funds. The money was raised and work began immediately. The wagon road was finished in October (Bagley 1929:269). Shortening, improvements and repairs commenced almost at once.

The residents of Seattle worked to increase the importance of their settlement as a seaport, and they tried to encourage the use of Snoqualmie Pass as the most direct route between eastern Washington and the Sound:

> On January 15, 1868, the Legislature made an appropriation of $2,500 for continuing work on the road. This was good news to Seattle, but in March came the even better news that the chief engineer of the Northern Pacific had decided in favor of the Snoqualmie Pass route for the new railroad and also that Seattle was to be the western terminus of the line. J. W. Borst was placed in charge of the road work and during the summer of 1868, $1,400 of the $2,500 appropriation was used by him in construction work and repairs to the road bed in the pass, the remaining $1,100 being reserved by the commissioners for the purpose of building bridges between Seattle and Snoqualmie Prairie. After this work was finished the road became quite popular and was used by people traveling in both directions (Bagley 1929:270).

Puget Sound reaped the benefits in commerce as traffic increased. Beginning in 1869, stock drives, especially of cattle but including sheep and hogs, became a significant factor in strengthening the economy. In May 1869, 62 head of beef cattle were driven through the pass from the Yakima Valley, and the word spread that the road was in good condition (Bagley 1929:270; Oliphant 1947:196). Between about 1869 and 1888, Snoqualmie Pass was the most important trans-mountain route for the cattle trade "...through which ran a trail that for many years was deeply cut by the hoofs of cattle that had grazed on the ranges of the Columbia Basin" (Oliphant 1947:203). This use was heavily dependent upon the market, and depression in the middle 1870s caused the regularity of the stock drives to decrease. However, by the close of the decade, the movement through the pass was considerable: 4,000 head in 1879 (Oliphant 1947:203). The winter of 1882-83 was the first time that the drives continued through the cold months. In February 1883, a Yakima local paper reported:

> Men, horses and cattle are crossing the Cascade mountains by the Snoqualmie Pass every day. Two droves of cattle came through last week in fine order from Kittitas and Yakima valleys, without losing a single animal. Men ride over from Ellensburg, one hundred and twenty-five miles distant, in four days, the time ordinarily made in the summer. This is the first winter an effort was made to keep the pass open,

> and so little difficulty has been experienced, that its closing will not again be permitted. The Snoqualmie Pass is the favored route for rail road communications between the eastern and western halves of the territory (Oliphant 1947:205).

Despite this popularity as a stockway, there was still not a good, reliable and safe wagon road. Efforts to finish the wagon road marched unsteadily onward through the end of the century, as the economy waxed and waned. A variety of pleas were made to both King and Kittitas Counties as well as to the Legislative Assembly of Washington Territory to secure funding to do necessary repairs on the road. An act passed by the Legislature in 1875 legalized the promotion of several lotteries offering prizes of Seattle real estate, as a fund raising effort. Ten percent of the proceeds were to go toward the road (Conover 1949; Prater 1981). Shortly thereafter, the lotteries were determined to be illegal.

A group of interested cattlemen in the Kittitas Valley incorporated the Walla Walla Trail and Wagon Road Company in 1883 "for the purpose of connecting Eastern and Western Washington Territory by means of trails and wagon roads through the Cascade mountains via the Snoqualmie Pass..." (Prater 1981:35). They built and improved the road, and operated it as a toll road as late as 1887. That year, much of the trans-Cascade travel was transferred to Stampede Pass, with the completion of the Northern Pacific Railroad. However, the Seattle continued to fight for a properly maintained wagon route.

In 1899, David Denny received a contract to complete maintenance of the "Famous Lost Wagon Road" as it was called by the Seattle Post Intelligencer (Prater 1981:39). The legislature passed an act to provide $1,000 for the project. The citizens of King and Kittitas counties were directed to raise and contribute a matched amount, in the proportion that each county benefited. King County was directed to raise two thirds of the matching sum. In a description of the work completed, Denny reported that he had "made 412 feet of bridges and put down over 1,200 feet of corduroy, made 3,040 feet of new road and removed a large amount of rock from the road, nearly 200 blasts" (Prater 1981:40).

The first motorized traffic went through Snoqualmie Pass in 1905. When the Alaska-Yukon Exposition was being held in Seattle in 1909, and a promotional transcontinental auto race was in the plans, the county commissioners from King, Kittitas, Yakima and Walla Walla counties quickly appropriated funds to improve the wagon road through their respective counties (Prater 1981:44). Motorized traffic gradually increased across the pass, but for several years horse-drawn traffic continued to outnumber automobiles.

> Though the road had been improved in 1909, motorists in 1913 still preferred shipping their automobiles over Snoqualmie Summit by train rather than running the risk of breaking down. Motorists paid from $20 to $25 per vehicle to transport their cars over the pass (Prater 1981:49).

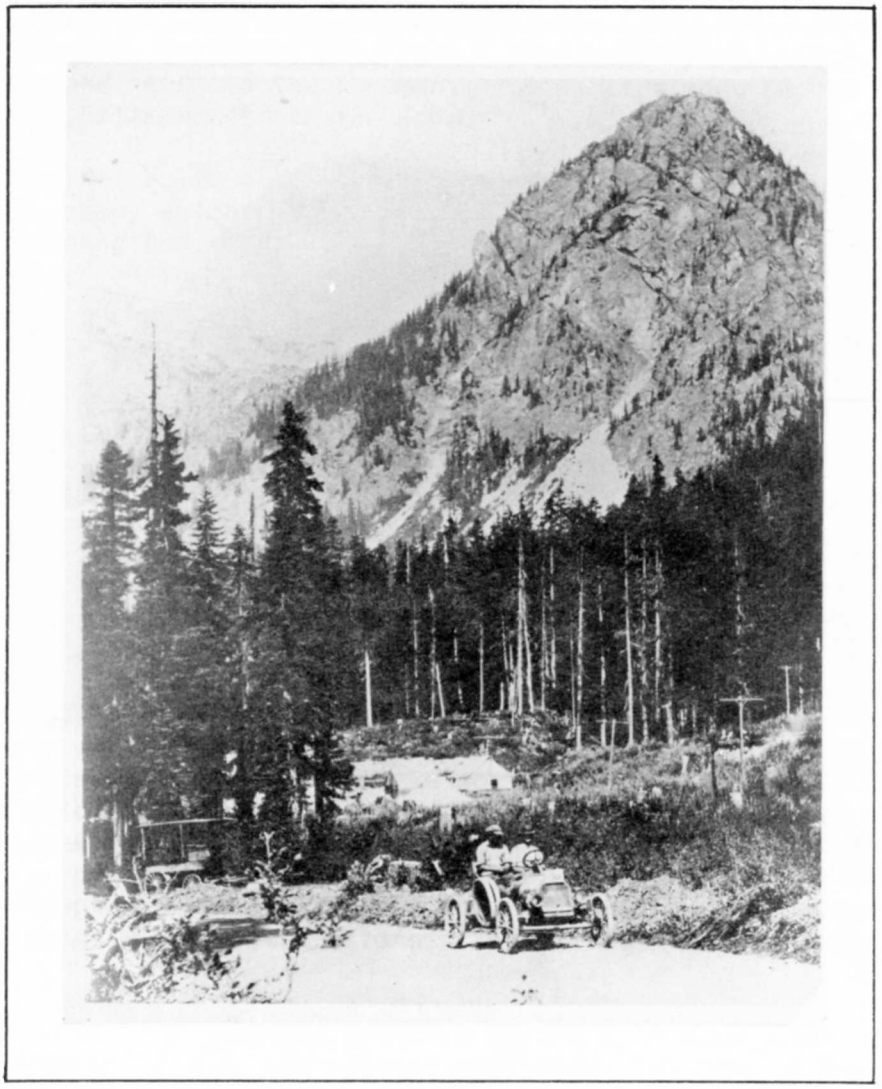


Figure 4.2 Snoqualmie Pass road, near Laconia, at the summit of the pass, 1915.

About this time, the Snoqualmie Pass Road apparently finally reached a "permanent" status. More appropriations were sought and received to make the Snoqualmie Pass Road a viable automobile route. The old road was abandoned in many places for a shorter, straighter route. In 1915 and again in 1928, thousands of dollars were spent to improve the road (Bagley 1929:278-279). In 1934, the first paved road was dedicated through the Pass (Figure 4.3). Snowsheds were added in 1950, and in 1952, work began on a new, high speed, four lane highway (Prater 1981:64). For the next decade, work progressed with improvements to accommodate more cars travelling at higher speeds (the speed limit reaching 70 miles per hour in 1963, subsequently lowered to 55 mph). In 1981, the westbound elevated highway east of the summit was opened. As Yvonne Prater points out, future changes and improvements along this indispensable Interstate Highway are inevitable (1981:64).

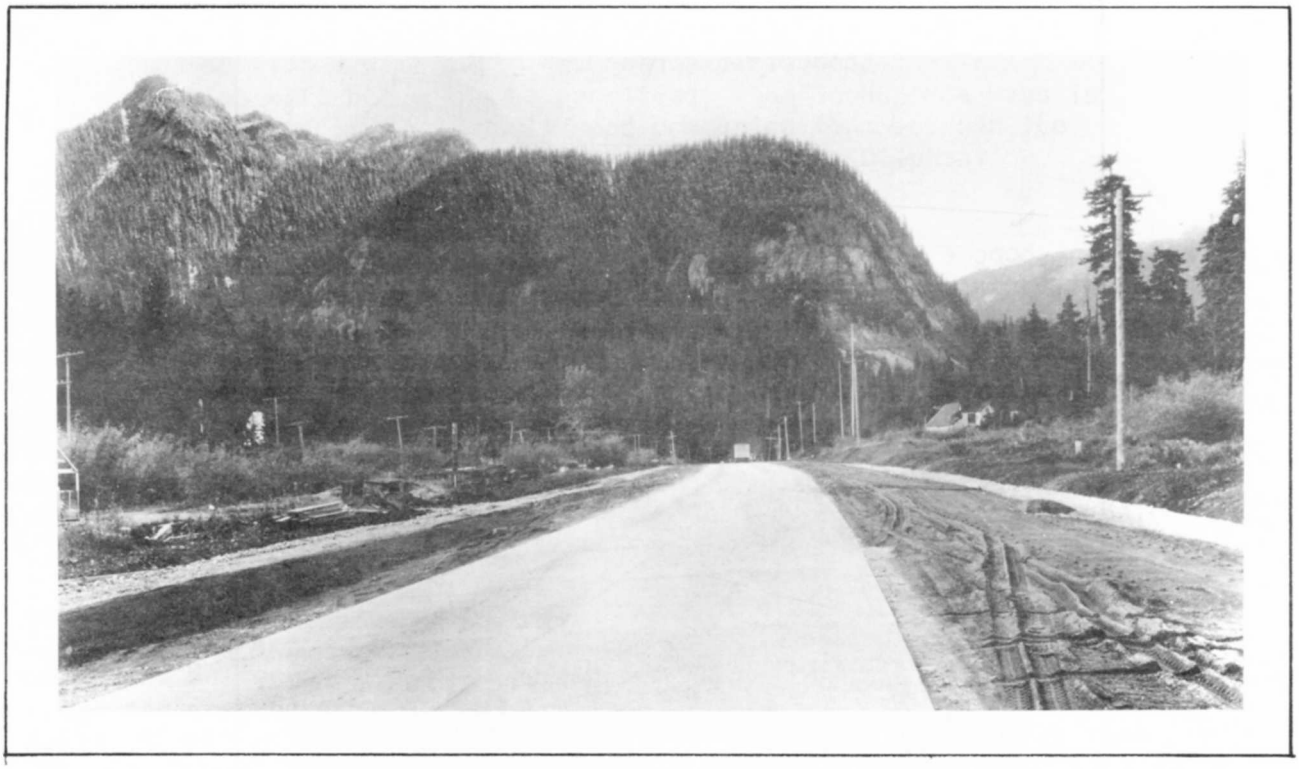


Figure 4.3 The new paved highway at the summit of Snoqualmie Pass, 1935 (courtesy of the Washington State Historical Society, Tacoma).

The Northern Pacific Railroad Crosses Stampede Pass

To encourage and finance the construction of railroads across the United States, the Federal Government made huge land grants to railroad companies. In 1864, the Northern Pacific was granted every alternate section of non-mineral land located within 20 miles on each side of its line, to which the United States had full title. The grant did not become effective until the route was fixed and plats filed, so the Northern Pacific continued its surveys to find the most feasible route to breach the Cascades. Eventually, the Northern Pacific received one of the largest railroad grants in history: 9,585,997.33 acres in Washington (Raney and Raney 1973:146).

The survey expeditions included expeditions to passes far to the north of the Snoqualmie area, up the Skagit and Suiattle Rivers (Linsley 1981). The discovery of a pass between Snoqualmie and Yakima Passes by V.G. Bogue on March 19, 1881 was significant: Bogue recommended that his newly discovered "Garfield Pass" be adopted as the route of the Northern Pacific Railway Company. The final decision to make Tacoma, not Seattle, the terminus of the transcontinental railroad was more than a little disturbing to the Seattle residents. They felt they had lost a long battle to put Seattle on the map as the western seaport.

V.G. Bogue was placed in charge of surveying the line. At one point he felt that the trail crew stationed at Lizard Lake was not progressing to his satisfaction, and replaced the foreman. The workers were angry, and the story goes that they "stampeded" off the job:

> There was quite a large fir tree at this Stampede [Lizard] Lake camp, which had a large blaze cut on it by the men remaining and with a piece of charcoal from the campfire they printed on the blaze the words "Stampede Camp." From this came the name of the little lake which is located just west of the pass, and thence the name "Stampede Pass" (Bonney 1921:278).

All the proposed Northern Pacific routes required a tunnel through the mountains to lessen the grade, however, Stampede Pass would require the longest. In fact, this was to become the second longest tunnel in America at the time: 9,850 feet, or nearly two miles (Northwest Magazine 1886a, 1886b). The final location of the tunnel was decided in 1885. A man from Montana, Nelson Bennett, submitted the winning bid, which included a proposed schedule of work. Bennett said he could complete the tunnel within 28 months of a starting date of January 21, 1886. If he failed, he would be penalized $100,000.00 plus 10% of the contract price (Peter 1981).

Equipment shipped to the construction site consisted of five engines, two water wheels, five air compressors, eight 70 horse power boilers, four large exhaust fans, two complete electric arc light plants, two fully equipped machine shop outfits with tools, etc., 36 air drilling machines and several tons of steel drills, two locomotive engines, 60 dump cars, two raw mill outfits (one for each end), telephones for each end of the tunnel and working points therein, and "other necessities of less interest from an engineering standpoint" (Hobart 1891:302).

> To secure the greatest possible accuracy, the large and dense coniferous timber was slashed down along the line of the tunnel over the mountain through which it was driven, in order to check the alignment and establish bench marks and reference points over and at each end of the tunnel. Tree trunks about 4 ft. in diameter were cut into sections 5 ft. long, and these were piled on top of each other to form signal towers (Hobart 1891:302).

Bennett had crews of up to 350 men per shift working day and night on the tunnel (Peter 1981:12). Progress varied between three and sixteen feet per day (Peter 1981), however, Northern Pacific did not want to wait. It was decided that a temporary track should be laid over the top of the mountain to complete the transcontinental route as soon as possible. An eight mile track was necessary to cover the distance that the tunnel would cover in two. The famous Cascade switchback, opened in July 1887, was a remarkable feat of engineering. Maximum grades on the east side of the mountains were 5.6%, and 5.2% on the west side. Thirty-one wooden trestles were built, some of them extremely high and long (Peter 1981). A train would start up the incline traversing the slope, and pull off the main onto a tail track. It would then proceed backwards up the next leg of the track and back onto the tail track at the next switchback, continuing forward and backward up to the summit, and descending in the same manner. From near the west portal of the tunnel, five tracks were visible, one above the other (Hobart 1891:303). The first train over the top preceded the opening of the tunnel by ten months.

A somewhat transient work force of various ethnic backgrounds comprised the construction crews. The railroads employed a large Chinese contingent because of their willingness to work for low wages in a depressed economy. This caused a great deal of dissension among the working classes who saw Chinese laborers as a threat to their jobs. As a result, violence and rioting were not uncommon in the work camps. There is some indication that the Chinese lived and ate separately from the main camp, and a story persists that there was a Chinese cemetery in the vicinity of their camp (Peter 1981:ii). Despite the difficulties in keeping the violence subdued, the company continued to hire Chinese men in numbers and took special measures to provide them protection. The Dalles Times-Mountaineer reported that 80 Chinamen on their way up the line were escorted to the job by 30 deputy United States Marshalls (Peter 1981).

Work on the tunnel was dangerous, and the Chinese worked at some of the most dangerous tasks. Twenty-eight deaths and 39 injuries were officially recorded before the tunnel was completed. One single grave is reported to be at the summit (Peter 1981).

The tunnel was completed just seven days ahead of the contract deadline. The first train passed through on May 27, 1888. The switchback was abandoned and the population of the camps began to pack up and move on. A few stayed in the area and continued to work for the railroad, constructing station houses or salvaging steel from the switchback.

The importance of a wagon route across the Cascades was not completely overshadowed by the railroad. The people of Seattle showed their stubbornness when the Seattle Post Intelligencer reported that "the wagon road will be needed in any event. It will run through a different country from that occupied by the railroad and will accommodate thousands of persons the railroad cannot expect to serve" (1883).

The Great Northern

The Great Northern Railway Company, under the driving hand of James Jerome Hill, was the only transcontinental railroad for which government aid was neither sought nor given. In 1879, Hill had a dream - to complete the rail line between St. Paul and Puget Sound. Hill was set on capturing the transportation market for imports being shipped into the port of Seattle from the Orient. In 1890, Hill assigned an engineer, John F. Stevens, to find a route from Seattle to Spokane. By that time, the Northern Pacific had already laid the rails over Stampede Pass, so Stevens focused his attention on a route farther north. With the help of Indian guides, he examined several possibilities from Snoqualmie Pass to Indian Pass. From the east side of the Cascades, he ventured to explore the headwaters of Nason Creek, but time cut his journey short. Feeling fairly confident that a pass would be found up this drainage, Stevens sent his engineer, Charles F. B. Haskell, to follow through with this lead. Haskell climbed up Nason Creek to Stevens Creek, and then up to the summit where he carved the words "Stevens Pass" in a tree (Haskell 1948).

They began to clear the land and lay the rails in 1891. Crews working east from Everett and west from Wenatchee during the fall and winter of 1892 brought the steel together near the town of Scenic, west of Stevens Pass, and drove the last spike on January 6, 1893. Regular service linked Seattle with the east by midsummer of that year (Great Northern Railway Company 1952).

For the first seven years, the train utilized a switchback across the Cascade summit. A booklet distributed by the Great Northern Railway Passenger Department (n.d.) described the switchbacks, scenery and mechanics of the crossing. The description includes an advertisement for the Cascade Tunnel, which was apparently under construction.

> Climbing still higher [up the east slope of the Cascades], the train comes to a stop at the foot of the east side Switch Back... The station on the right is Cascade Tunnel, 1,709 miles from St. Paul, altitude 3,375 feet, 2,673 feet higher than St. Paul or Minneapolis. Cascade Tunnel is at the eastern end of the new tunnel, described later on, and passengers will see the entrance to the tunnel and the electric cars which are used to haul rock, etc., to and from the workmen. Here begins the east side "Switch Back", or the ascent of the east slope of the Cascade Mountains. It will be noticed that most careful examination is made of every part of the train before the ascent is commenced. Every wheel and track, all air brake mechanism, signals, etc. are thoroughly inspected so as to guard against the possibility of accident... A huge 12 wheeled engine is attached to the rear of the train and ascent is begun... At the end of the first short length of track called a "leg," the train stops, switches are thrown, and the train starts in the other direction on the second step or leg... There are three legs on the east side with three and one half percent grades... From the Cascade Summit a wonderful view is had of the mountains and valleys... The train now runs around the side of the mountain and begins the descent of the west slope to Wellington Station. There are four legs on the west side, with a grade of about four percent. The successive stretches of track are shorter and steeper than on the eastside... All along the track are the boarding houses of the workmen. At Wellington the second engine, which has assisted the train over the "Switch Back" is dropped (Great Northern Railway Company n.d.:5-15).

The small communities that developed around the construction of the tunnel were probably similar to many of the lumbering, mining and cattle towns of the early west. However, the reputation of Cascade Tunnel at the eastern portal (also called Tunnel City or Tunnel) spread far and wide when an article published in the New York World in 1900 dubbed it "the wickedest place in the world" (Western Historical Publishing 1904). The allegation was rebutted by a prominent attorney and Cascade Tunnel resident who, although agreeing that it was indeed a wicked place because "conditions are favorable to the exposure of the rough side of life," disagreed adamantly with the proclamation that it was the most wicked "on earth." Surely a more wicked place could be found! (Western Historical Publishing 1904:734).

The 2.63 mile tunnel opened between Wellington, on the west side, and Tunnel City in December 1900. On July 10, 1909 electrification of the tunnel was made possible by hydroelectric development in Tumwater Canyon. This permitted a smoke-free passage through the tunnel.

The winter of 1909-1910 was unusually harsh, and snows covered the track, slowing and at times stopping the trains. On February 25, passenger train No. 25 and mail train No. 27, which had been halted at Leavenworth, were cleared to

proceed westbound following a rotary plow. The trains were halted again at the eastern entry to the tunnel by slides just west of Wellington. Four rotary plows worked ahead to clear the track. After waiting a day, the two trains coasted through the tunnel (the power of the electric line had been knocked out), and inched forward as the tracks were being cleared, to two side-by-side tracks at the town of Wellington. The snow continued to fall, and one by one the four plows were stopped. The passengers waited as a small group of men set out to walk three and one half miles to Scenic for help.

Within the second hour of the morning of March 1st, an avalanche swept down Windy Mountain and carried the two trains off the mountainside to the valley below. Ninety-six persons died at the scene, making the avalanche one of the worst disasters in railroad history (U.S. Park Service 1976). The disaster cost the Northern Pacific dearly in poor publicity, and they quickly rebuilt the site and renamed the town to erase the memories. Improvements to make the route safer began with the construction of a long concrete snowshed to span the two tracks at Tye (Wellington). In 1911, the Martin Creek Tunnel, an unusual horse-shoe shaped tunnel, was built to replace an earlier switchback.

The winter of 1912-13 was again severe, resulting in frustrating interruptions of traffic across the Cascades. Great Northern responded with the construction of 14,500 feet of both timber and combination timber and concrete snowsheds between Scenic and Tye, a total of nine miles. The completion of this amount of work in six months was another unusual engineering feat in railroad history (Railway Age Gazette 1914). During 1916, the railroad built another 14,560 feet of snowsheds, added 281 feet of concrete arches, and drove 2,519 feet of tunnels. Six and nine tenths miles of the nine were then covered and protected from hazards (Railway Age Gazette 1917) (Figure 4.4).

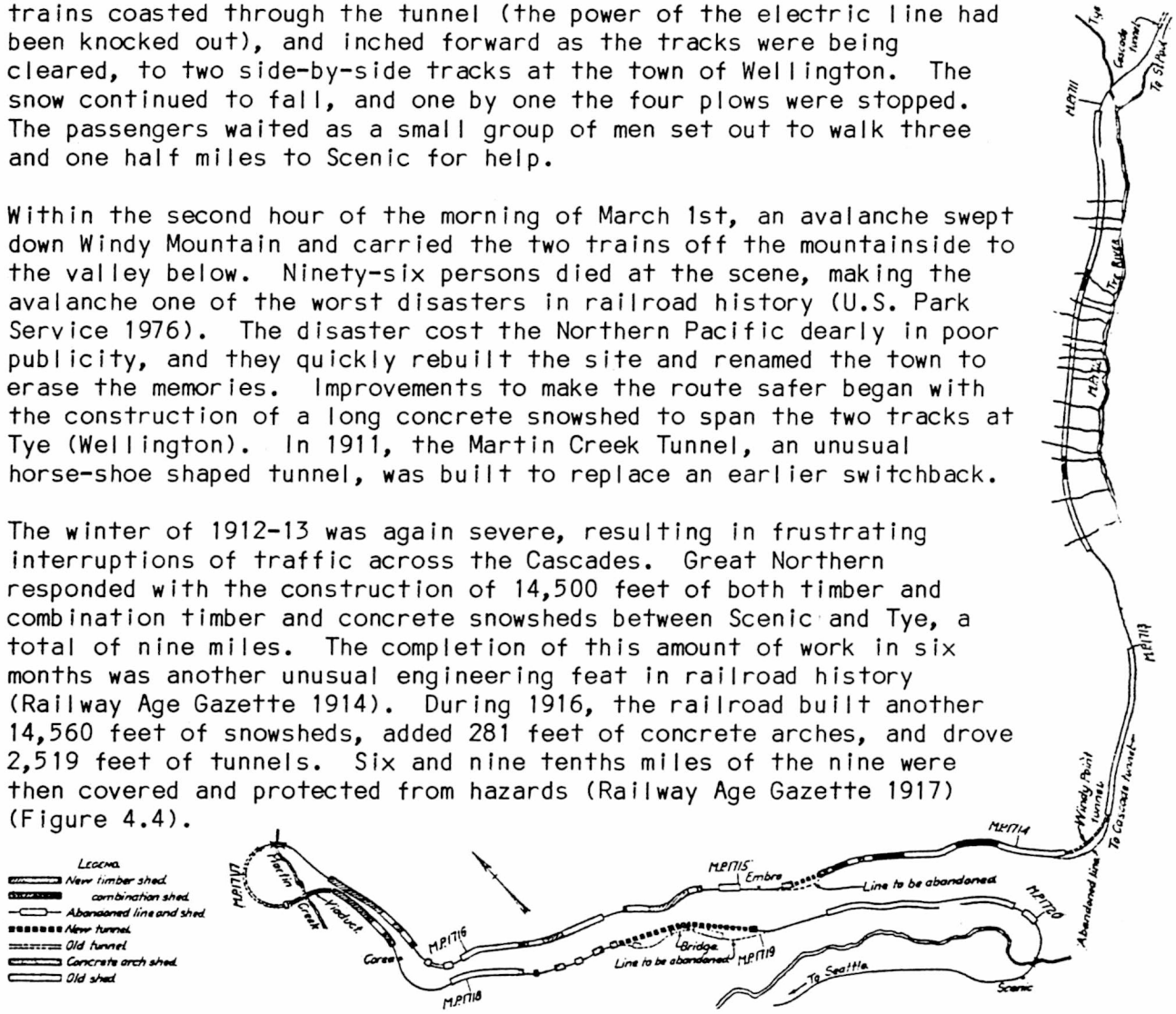


Figure 4.4 Location of snow sheds west of Cascade Tunnel (from Railway Age Gazette 1917).

As heavy winter snows continued to impede the rail traffic, several alternatives for shorter and safer passage were being examined. John F. Stevens, the locating engineer for whom the pass was named, urged the approval of a 7.79 mile tunnel at an estimated cost of $14,000,000 (Anderson 1977:45). In November 1925, the Great Northern Board of Directors authorized the most extensive improvement project the railroad had ever undertaken. It included the construction of the New Cascade Tunnel between Berne and Scenic, and electrification of 74 miles between Skykomish and Wenatchee, to permit a more efficient operating system. As many as 1,790 men worked on the tunnel around the clock, three shifts a day. On May 1, 1928, 29 months after beginning, a blast opened east to west. The first train passed through in January of 1929, and the tunnel was dedicated on June 12th of that year (Keillor 1978). This final link, which shortened the 43 mile mountain line to 34 miles of high speed track, was completed just as Puget Sound was becoming a key port for trade with the Orient and northern Europe.

Fast, economical transportation was essential for the continued economic growth of the Puget Sound region. Newer diesel locomotives required clean, smokeless air for effective combustion. In 1956, a ventilation project for the Cascade Tunnel marked the end of the electrification of the Great Northern line (Keillor 1978:10).

The Chicago , Milwaukee and St. Paul to Puget Sound

Not to be left behind, in 1905 the Milwaukee Railway Company contracted the construction of a cross-Cascade segment of the railroad to H. C. Henry of Seattle. Snoqualmie Pass, by then a popular route, was chosen. The plans called for a tunnel under the summit. However, a "high line" was completed over the top of Snoqualmie Pass in 1908 to expedite the use of the route. In the larger context of "opening up the west," the arrival of the Chicago, Milwaukee and St. Paul attracted little attention:

> What a few years earlier would have aroused a frenzy of joy was accepted as a matter of course. The Northern Pacific and the Great Northern were giving us excellent service and seemed to fill most of our [King County] wants. Some of us old-timers were pleased to witness the confirmations of their claims of forty or fifty years earlier that the Snoqualmie Pass was one of the best for railroad purposes; but the people of King County did not see that they were to be greatly benefited, directly... The main line down the south branch of the Snoqualmie and down the Cedar River opened up no new territory, but the branch to Everett passes through a region of excellent farming and dairying lands, and in that part of the country is of real value (Bagley 1929:334).

The new line did not use a switchback, but due to the steep grade (2.75% from Laconia to Rockdale) a helper engine was required on the uphill sections for eastbound and westbound trains, and two for eastbound tonnage freights. Bad weather and steep grades caused operating difficulties and closures, necessitating work on construction of the tunnel to begin as soon as possible. In the meantime, snowsheds were added to the line between Rockdale and Laconia. Over a mile in length, these were said to be the largest snowsheds ever constructed on an American rail line. They were built by travelling cranes that ran on tracks at the top of the sheds. The project temporarily employed several hundred men who lived in tent camps along the line (Prater 1981:98).

Tunnel construction commenced slowly in the summer of 1911 at Rockdale, the western portal. After a particularly hard winter in 1912-13, the crews began working day and night to complete the much-needed tunnel. In 1914, the railroad reported:

> Since that time, two gangs numbering over 300 men have been under the mountains by day and by night and the hum of the air drills has never stopped except when the dynamite was fired and the smoke was clearing from the charge (Milwaukee Railway System 1914:12).

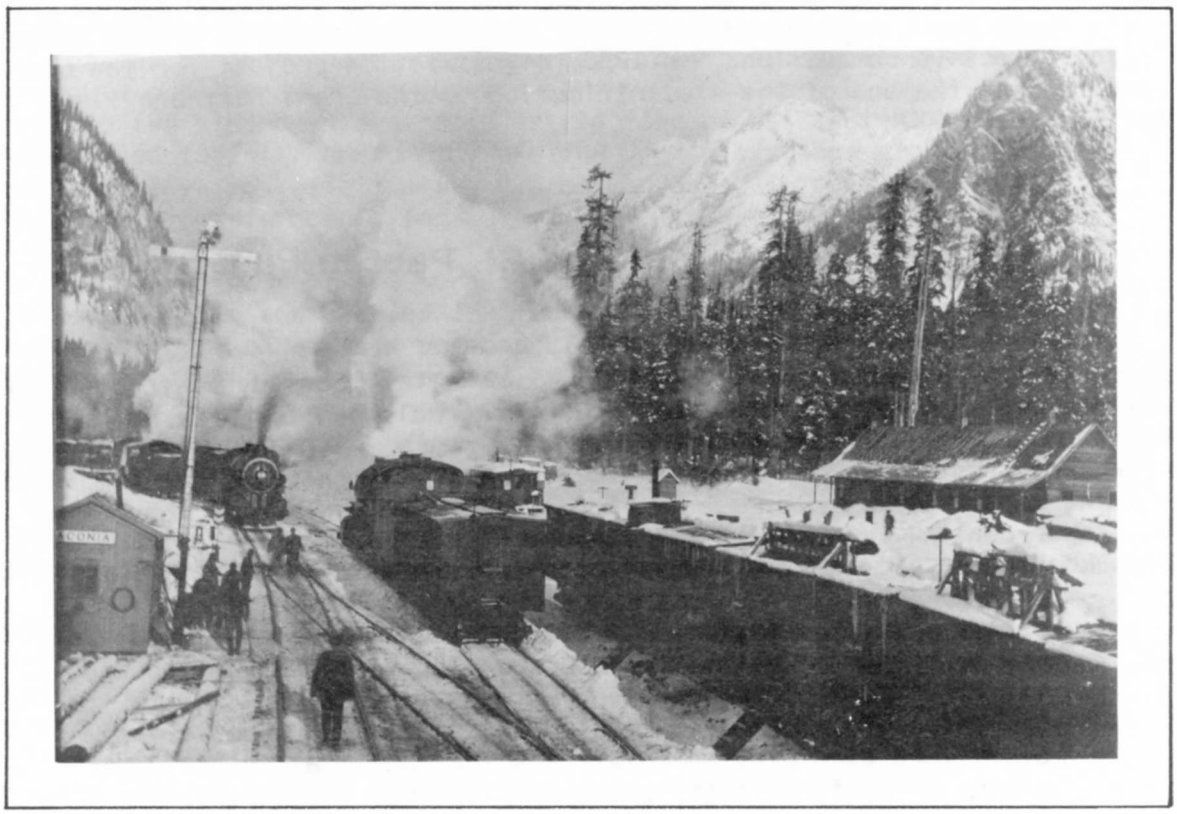


Figure 4.5 Laconia station at the summit of Snoqualmie Pass on the Chicago, Milwaukee, St. Paul and Pacific Railroad.

A work camp was set up at each portal. The Rockdale camp was probably the largest, as most of the two and one quarter miles were driven from the west end. The workers on this project apparently fared much better than was common at work camps.

> Camps at the tunnel portals were modern and considered far above the standard construction camps, the men being furnished with bunk houses having toilets, hot and cold water, and shower baths. The dining halls were large and kept in sanitary condition and the food for which the men payed 25 cents per meal, was of good quality and the men were always satisfied. The St. Maries Hospital Association maintained a doctor and an emergency hospital at each end, where first aid was furnished to those seriously injured... By spring the powerhouses and camps will be gone and the traveler entering the tunnel cannot realize what stood in the bare clearing on the hillsides just a few months before... (Holt 1915:11).

Crews worked competitively at each end of the tunnel for the 15 month project (Prater 1981:105). The average progress of the bore was 9.5 feet per day, with a maximum of 25 feet. The laborers were paid on an hourly basis with a bonus of an hour a foot in excess of ten feet a day (Holt 1915:10). The tunnel was completed and ready for operation on January 24, 1915.

Most of the men moved on to other work after completion of the tunnel. The highline was abandoned and work began to salvage the track and other materials. In a letter of June 14, 1916, from the Assistant Engineer to the Superintendent, it was reported:

> We are ready to start taking down buildings at Laconia [station at the summit] whenever track is connected so that we can get outfit cars to that point. In this connection, only one bunk house, 4 tool houses and the oil tank are left undamaged. All other buildings were broken down by the snow (Chicago, Milwaukee, St. Paul and Pacific 1916).

Many small stations continued to be operated along the route, occupied by railroad personnel involved in maintenance. A 1931 timetable lists Keechelus, Hyak, Rockdale, Garcia and Ragnar as regular station stops. These consisted of buildings and structures ranging from a passenger platform and mail crane at Keechelus, to a depot, cottages, bunkhouses and a turntable at Rockdale (Chicago, Milwaukee, St. Paul and Pacific n.d.).

All the railroads that crossed the Cascades originally operated by steam. Oil replaced wood for fuel because of the high incidence of wildfires caused by stray sparks. By 1909, the Great Northern had electrified their line through the Cascade Tunnel at Stevens Pass, providing testimony of the success of this alternative source of power in the area. The Milwaukee began a major project in 1910 that resulted in the most extensive railroad electrification in the world (Bagley 1929:338). By September 1920, the entire Coast Division was under electrical operation, and steam was totally abandoned. As was pointed out in 1929:

> Besides providing a smoother, more reliable and more expeditious medium than steam in the movement of traffic, electricity is more economical. The sixty-one electric locomotives now in use in train operation on the two electrified zones of the Chicago, Milwaukie, St. Paul and Pacific Railroad have released for service elsewhere on the system 162 steam engines, and they effect an annual saving of 265,000 tons of coal and 35,000,000 gallons of fuel oil (Bagley 1929:338).

Passenger trains brought recreationists to the upper Snoqualmie valley to hunt, fish, hike and pick berries. By this time the area was also open to automobile traffic. The transportation boom resulted in an increase in the number of people immigrating to the west. The farmers of eastern Washington had a new route to ship their produce to market, and supplies were sent to them on the eastbound trains out of Seattle. Finally, the residents of Seattle got the attention they believed they had deserved for at least 70 years.

The Cascade Wagon Road

The first white man of record to cross the Cascades in what is now Washington State was Alexander Ross, in 1814. Ross used a route up the Methow Valley, crossing a series of passes north and west of Lake Chelan, and crossed the summit into the Skagit Valley through Cascade Pass (Majors 1981:203). This route had long been used by the Indians as a link between the Skagit and

Okanogan, but the white settlers in western Washington Territory did not focus their attentions on this route as a possible cross-Cascade road until the discovery of gold in the Skagit Valley in the late 1870s. With the completion of the Northern Pacific Railway line over Stampede Pass in 1887, railroad supporters insisted that a wagon road through the Cascade passes would no longer be necessary, and it appeared that the fight had been lost.

In 1893, the Washington State Legislature's appropriation of $20,000 for the construction of a road across a northern Cascade route embodied the hopes of the settlers of Whatcom County for a link to the mine workings on Ruby Creek and to the inland empire of the Columbia. The money was contingent on matching funds of $5,000 from Whatcom County and $1,000 each from Stevens and Okanogan Counties. The road was to follow a route "up the Nooksack to Ruth Creek, over 5,000 foot Hannegan Pass, down the valley of the Chilliwack River to Brush Creek, up a steep five mile grade to mile-high Whatcom Pass, and then drop 1,600 feet the next five miles along Little Beaver Creek" (Murray 1965). This unbelievably difficult route would have only come within 15 miles of reaching the prospecting sites on Ruby Creek (Murray 1965). Construction began in 1893. The money was not raised by Okanogan and Stevens counties, although they promised to come through in 1894 if a better route was found. By then, economic depression and lack of interest forced the abandonment of the project (Murray 1965).

The 1895 State Legislature suggested that an alternate route be examined. Three were considered; the route connecting the Cascade River to the Twisp River by way of Bridge Creek and via Cascade Pass was determined to be the shortest and most practicable (Murray 1965). Construction began as soon as the weather permitted in 1896. The work completed that year was done with little or no surveying, and was less than adequate:

> The construction crews cut a swath through the brush and timber about 20 feet wide and removed rock and stumps from the roadway. With this clearing finished, they rushed on, cheerfully announcing that their road over Cascade Pass was completed (Murray 1965:54).

This "road" was used by packers and sportsmen, but wagons were not able to negotiate the steep grades. By 1897, much of the road had become impassable because of slides and washouts. In 1906, the State Road Commission reported that $85,200 had been spent and there was still no road to show for it (Murray 1965:55). The Commission recommended that no further appropriations be made for a route across the north Cascades. Attention turned to Snoqualmie Pass, which appeared to hold more promise, and surely only one road across the Cascades would ever be necessary! (Murray 1965).

During World War I, all state highway construction was dropped for the more important matters at hand. In subsequent years, the North Cascades Road got little attention, but mile by mile small improvements were made. Some of the grading along the old Cascade Wagon Road was completed by the Civilian Conservation Corps, but a real North Cascades transportation route was still a long way off. Finally, after World War II, there was another wave of interest in constructing a road north of Stevens Pass. The final route that was settled on was up Ruby, Granite and Early Winters Creeks. In 1960, construction began on the North Cascades Highway, the dream of Washingtonians for some 90 years. The Highway was dedicated in 1972.

Introduction

In about 1860, gold finds east of the mountains in the Colville area, and north along the Canadian border and into Canada, resulted in an influx of prospectors to Washington Territory. Traces of gold were found here and there throughout the Cascades, and many men stayed to make their fortunes. At first, the interest was in placer mining, but within a short time attention turned to the discovery of lode gold:

> Following the Mount Chopaka [Okanogan County] finds, increasing attention was centered on the occurrence of lode ores throughout the Territory, with the result that hard-rock mining, as distinct from placering, began to assume the importance it deserved. Differing from the ephemeral placer operations, conducted by individuals or small groups, lode mining, to be successful, involves considerable capital, heavy equipment, permanent camps and competent management. Obviously, it was to mean far more to the industrial development of the state than had most of the earlier placer operations (Glover 1954:14).

Prospectors came from every direction, and dispersed to virtually every locality in the territory. When the first recorded discovery was made in the remote mountains of the headwaters of the White River in 1880-82, the owners reported that "somebody had been there before them, for an old cabin stood far up the west fork of the White River and some trees on the west side of the east fork of that stream were marked with old blazes" (Hodges 1897:44). It was not until 1888 that the Territorial Legislature enacted a law that compelled all mining locations to be recorded with the county auditor. Even so, many of the records have vanished over time. Claims could be located almost anywhere, by almost anybody:

> Any person who is a citizen of the United States or who has declared his intention to become a citizen may locate, record and hold a mining claim of fifteen hundred linear feet along the course of any mineral vein or lode, subject to location, or an association of persons severally qualified as above, may make joint location of fifteen hundred feet with regard to the extent of the surface adjoining the vein or lode: The Revised Statutes provide that the lateral extent of the location of the veins or lodes shall in no case exceed three hundred feet on each side of the middle of the vein at the surface (Seattle and International Railway 1898).

Mining was big business around the turn of the century and the railroads wanted to have their share of the profits. The Seattle and International Railway, for example, advertised that they provided transportation to within a short distance of the Mt. Baker Mining District. Their advertisement gave information ranging from how to get there, to what supplies a prospector should purchase to be sufficiently outfitted for a six week trip (Figure 4.6).

WHAT TO TAKE

The following is a list of supplies, that has been carefully compiled and revised from a number of lists furnished by some of the oldest and most reliable outfitters, sufficient for a six weeks' trip:

PROVISIONS

Weight		Price
15 lbs.	Bacon	$ 1.50
1 "	Baking Powder	.45
1 "	Baking Soda	.10
10 "	Beans	.20
5 "	Butter	1.50
15 "	Corned Beef	1.10
5 "	Coffee	1.15
4 "	Condensed Milk	.50
2 "	Candles	.30
1 "	Cocoa (Chocolate)	.25
10 "	Corn Meal	.15
5 "	Dried Beef	.75
2 "	Dried Figs	.15
2 "	Evaporated Onions	1.00
2 "	Evaporated Vinegar	.25
10 "	Evaporated Potatoes	1.80
4 "	Evaporated Soup Vegetables	1.60
10 "	Evaporated Fruit	.80
50 "	Flour	1.15
1 "	Jamaica Ginger	.50
5 "	Matches	.15
5 "	Oatmeal	.15
7 "	Pilot Bread	.45
1/4 "	Pepper	.10
2 "	Pot Beef Extract	2.80
7 "	Rice	.42
1/4 "	Salt	.05
5 "	Salt Pork	.35
2 "	Soap	.15
1 "	Soda	.10
3 "	Split Peas	.15
10 "	Sugar	.60
1 "	Tea	.40
1 "	Yeast	.05

HARDWARE

2 "	Gold-Pan	.30
1 "	Prospector's Pick	.85
3 "	Hatchet	.50
1 "	Measuring Tape	.35
5 "	Shovel	.75
10 "	Powder	1.50
1 "	Fuse	.75
1/2 "	Caps	.50
2 "	Drills	1.50
1/2 "	Magnifying Glass	1.50
	Knife and Fork	.10
	Table and Tea-spoons (3 each)	.15
	Large Spoon	.15
	Bread Pan	.25
6 1/2 "	Granite Cups (2)	.25
	Granit Plates (3)	.35
	Coffee-pot	.30
	Fry-Pan	.12
237 lbs.		$31.59

Figure 4.6 Mining Supplies necessary for a six week prospecting trip (Seattle and International Railway 1898)

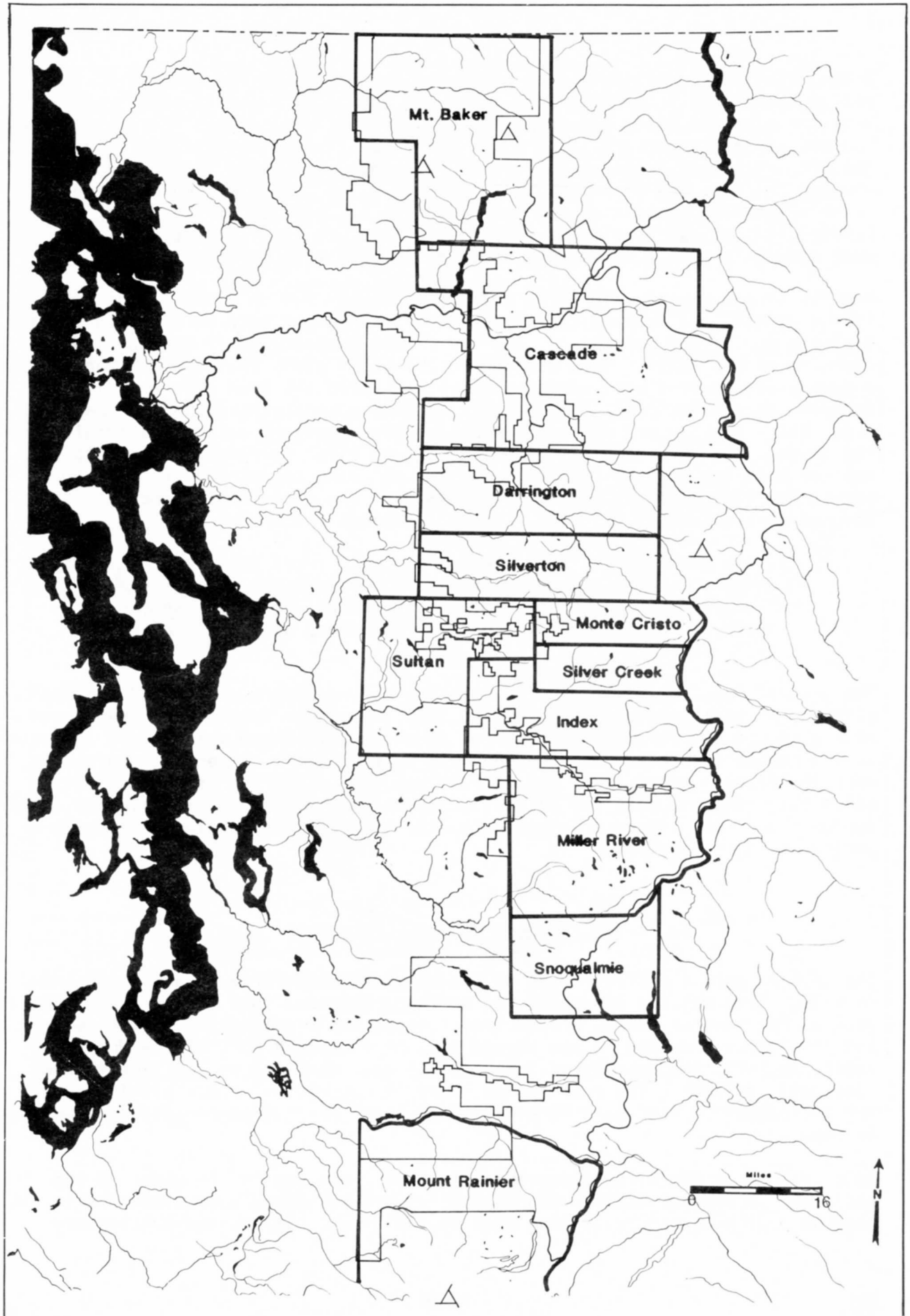


Figure 4.7 Mining Districts of the western Cascades.

Transportation was ultimately of paramount importance to the success of the mining operations in the Cascades. The ore had to be moved in great volumes from the mines to mills and concentrators. From there, access and distance to the smelter was important. All costs had to be figured against the value of the ore. Miles of tramways and branch railroads were built in the Cascades to shorten the time and distances to the market. The companies could only afford to ship the highest quality ore to the smelters. Several of the mines constructed and operated mills for dressing the ore right at the mine. The most common in this area was the stamp mill, used with mercury.

Gravity stamps worked with large weights ("stamps" 500 to 1,000 pounds each), lifted by cams and dropped rapidly by their own weight onto an enclosed mortar. A single mortar had between one and six stamps dropping on it (Hodges 1897; Richards et al. 1925). When crushed to the right size, the pulp was run over a copper plate covered with mercury, which extracted the free gold and silver from the ores. The pulp was then carried over a concentrator, a machine which used water, gravity and motion to separate the remaining valuable minerals from the waste. The advantage of concentrating was first to reduce the ore to a smaller bulk and weight, thus reducing the shipping costs, and secondly to reduce smelting costs (Richards et al. 1925). The concentrated ore was then shipped to the Everett or Tacoma smelter. Hodges states:

> ...no one process, except smelting, will treat all ores and any process needs some modification for each ore treated. They often treat one ore to perfection and are worthless for another. Ores are individual in character, no two are alike (1897:180).

The general trend of mining in the Cascades showed a marked rise and decline within a 40 year period - from 1890 to 1930 (Clevinger 1955). The heyday was really around the turn of the century, at which time there was a rapid increase in the number of claims, and consequently in the number of people required to work the mines. After 1920, the decline was gradual. Most of the activity since that time has been the relocation of old claims, or the location of a few new ones on known ledges (Livingston 1971). This discussion focuses on the period of major development.

Mt. Baker Mining District

The call of gold was first heard on the upper Nooksack from an area near Sumas in 1858. Thus began a search of the northern Cascades that lasted nearly 30 years. For several years, prospectors focused their attentions on the small but consistent showings in the stream beds of the South Fork of the Nooksack until, in 1884, the reports of "rich mines" came down the valley like thunder (Jeffcott 1963:20). The rush was on - but it was short-lived. Within a year, the excitement in the South Fork was over; large quantities of gold were not to be found.

Gold fever from the first discoveries in 1858, remained in the blood of the residents of Whatcom County, and enough "color" was found intermittently to keep several prospectors heading back to the hills. It was the preliminary

efforts of gold seekers headed for the Ruby Creek Mines, discovered in 1877, that led to the first claims on the North Fork of the Nooksack. A prospector by the name of John "Jack" Post, a veteran of the Fraser River Gold Rush in '58, followed the gold trail up to the upper North Fork of the Nooksack. In 1897, he located the Silver Tip and Three Jacks Lodes and staked several claims. On August 19th of that summer, with friend and fellow prospector L. G. Van Valkenburg, Post discovered the Moss Back Lode at Gold City on the south side of Ruth Creek. Most of the mines produced silver and copper in much higher quantities than gold. On August 23, 1897, Post, Van Valkenburg and Russ Lambert found the Lone Jack (or Post-Lambert) ledge, the richest find ever made in the Mt. Baker Mining District (Figures 4.8; 4.9).

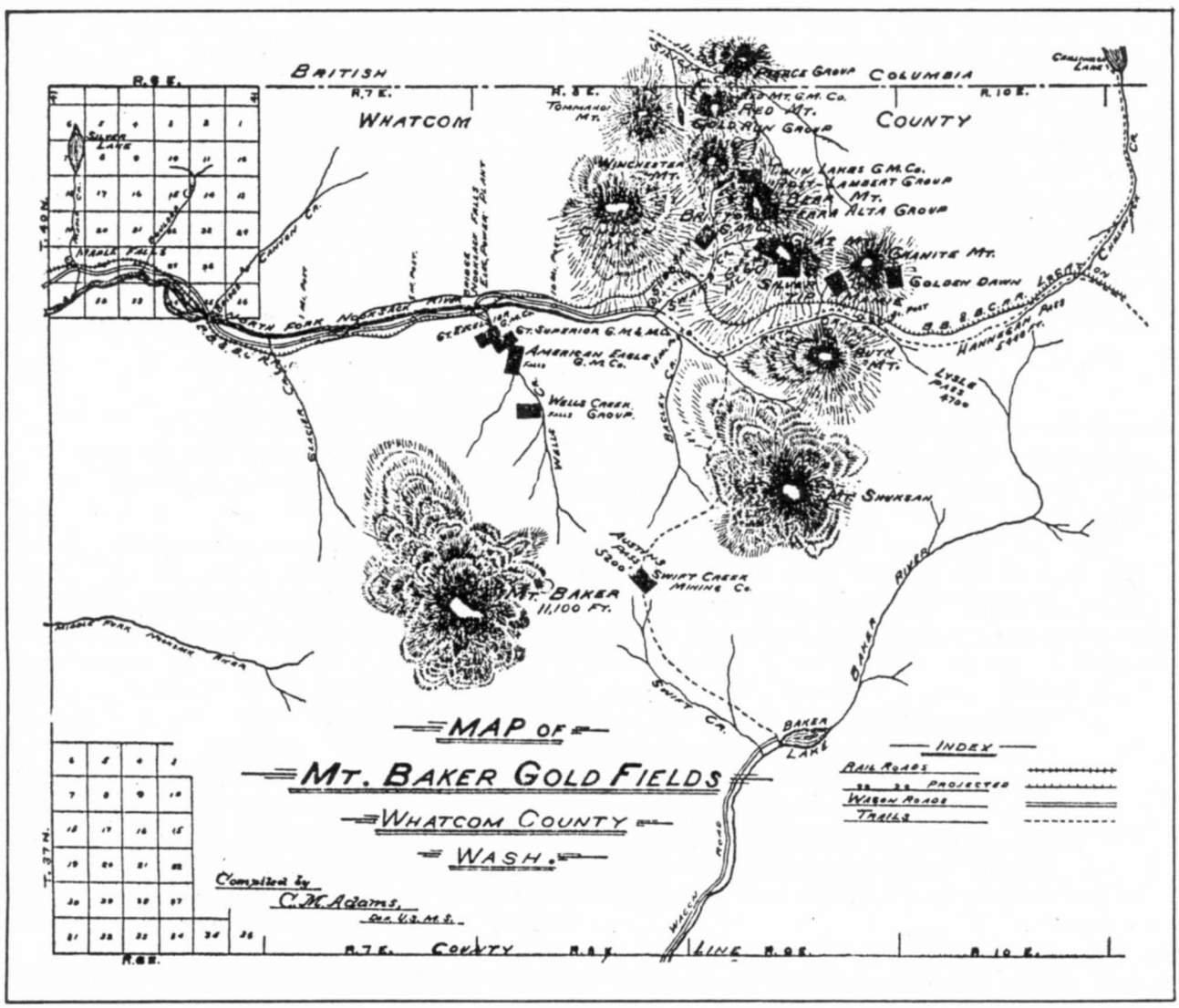


Figure 4.8 Map of the Mt. Baker Mining District, 1902.

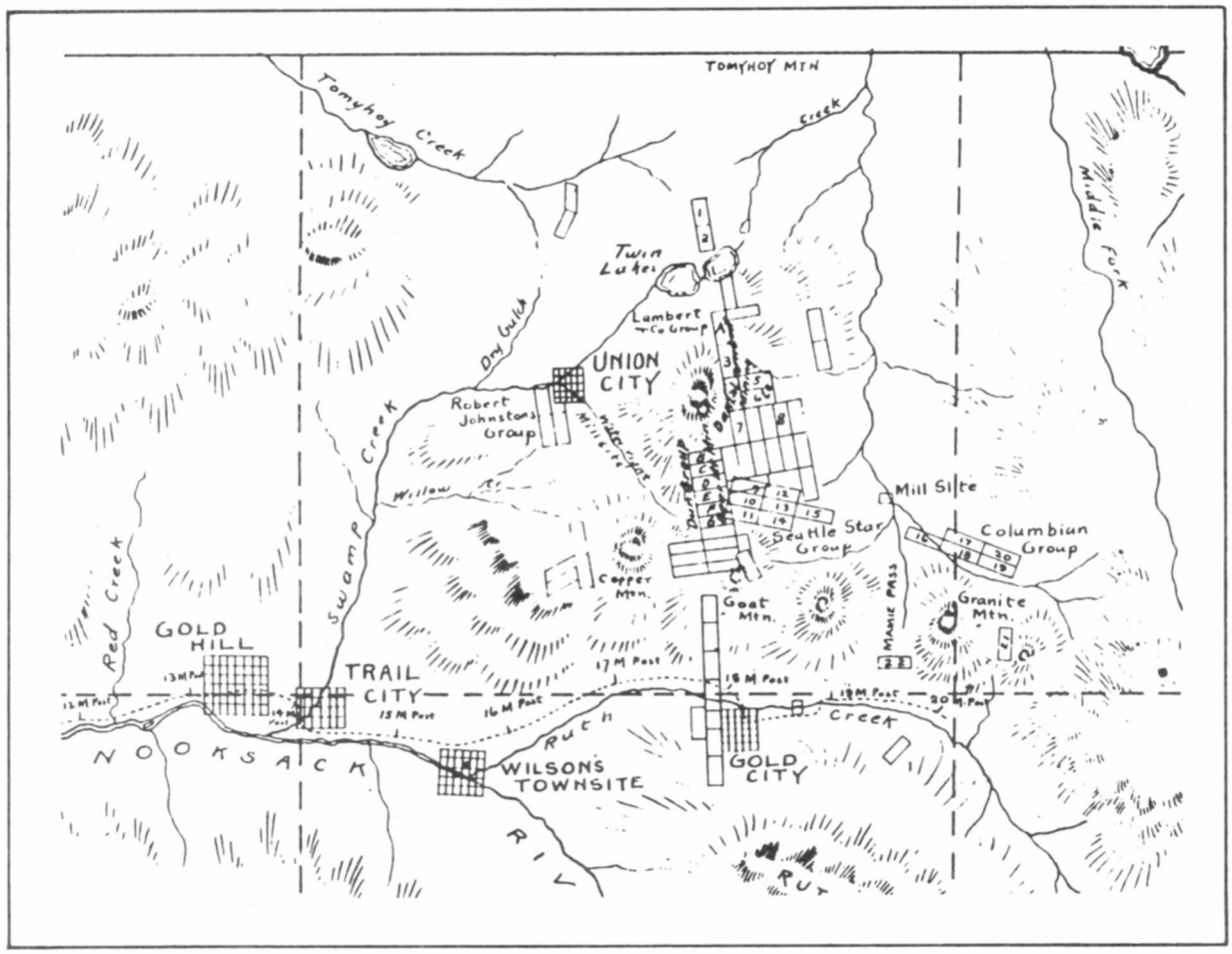


Figure 4.9 Late nineteeth-century map showing claims and townsites in the Twin Lakes area during the peak of prospecting activity, 1897 (from Miles 1984).

Lambert brought the samples from Lone Jack to Sumas to get them assayed, and the excitement built as he learned that the gold value of the ore was $10,750 per ton:

> Next morning, business in Sumas was at a standstill, and groups of excited citizens were collected at usual meeting places, all discussing the news, and planning to be off to the mines on the North Fork. John Kneuhmann [the assayer] could not be located. His wife said he had left for the mines before daylight...determined to get a claim in the new "Eldorado," come what may (Jeffcott 1963:83).

By the time winter weather forced the prospectors out of the mountains, nearly 1,000 claims had been staked by about 2,000 men who had taken part in the rush on the North Fork.

Post, Lambert and Van Valkenburg sold the Lone Jack mine for $100,000 in November 1897. The new owner, Henry Staneslawyski, immediately began to make plans for a stamp mill and other improvements. The townsite of Shuksan, consisting of 30 new cabins, two stores and a post office, was established as a result of these proposed developments. Traffic to the mines was diverted toward the new town, and the tent camps, such as Trail City at the mouth of Swamp Creek began to decline (Jeffcott 1963).

Initially, all the heavy equipment had to be dragged on sleds from Glacier, since the trail was too narrow for wagons. The plans called for improvements on the road between Glacier and Shuksan so that heavy equipment could be hauled in, and the construction of a new road from Shuksan to Twin Lakes (Jeffcott 1963:122). The plant began to operate in 1902, after four years of preparation and a great deal of money. It successfully produced large quantites of gold bullion until about 1920, notwithstanding a temporary set-back caused by the loss of the mill to fire in 1906. In 1920, an avalanche ruined the second stamp mill, and although it was rebuilt immediately, it never operated quite as successfully (Jeffcott 1963:125). The mines were shut down in 1924 (Miles 1984).

By far the most productive, the Lone Jack Mine was by no means the only mine in operation in the Mt. Baker District at the turn of the century. Over 5,000 mining claims were staked in the Mt. Baker Mining District between 1890 and 1937 (Moen 1969). The September 1907 "Coast" reported that there were 35 active and important mining companies in the distrct, operating five stamp mills with 46 stamps, while plans were in the making for the addition of two more stamp mills with a total of 13 stamps. The concentrators in operation at the time had a daily capacity of 1,000 tons, and the ore values were falling anywhere between $3 and $6,000 per ton (Coast 1907).

The Great Excelsior Mine was discovered in 1899, from an outcropping of gold quartz at Wells Creek. Subsequently, several prospectors staked claims on what became known as the Wells Creek group, and by 1901 a company was incorporated to begin development work:

> A road about one mile long was opened connecting the mine with the Old State Trail on the south side of the North Fork at the mouth of Deadhorse Creek, and a sawmill skidded over the none-too-good trail, for it hardly merited being called a road (Jeffcott 1963:161).

A four stamp mill set up at Excelsior eventually became a 24 stamp mill. In 1914, the mill was rebuilt, and electric power from a powerhouse built on the Nooksack River replaced the original water-powered turbine at Wells Creek. Instead of stamps, a rodmill was used to grind the ore. Despite the improvements, the water concentration process used at the mill resulted in the loss of between 40 and 50 percent of the values, and the mill could not be made to pay. Even later, after $250,000 worth of experiments and the substitution of a cyanide process of treating the milled ore, the mine was still not producing in quantities that could keep it operating. A 1934 review of operations and assaying of hundreds of samples concluded that "mismanagement through lack of knowledge had wasted the assets of the company to the amount of thousands of dollars" (Jeffcott 1963:164). Milling tests showed that 85 percent of the gold and silver, the leading minerals, could have been recovered with the proper techniques (Moen 1969:86).

The Great Excelsior Mill was shut down in 1916, but the Nooksack Falls Hydroelectric Project continued to operate. In 1930 the name of Puget Power and Light was adopted (DeBorde 1981; Schmierer 1983).

In 1901, the Gold Run claim was located and subsequent years saw the addition of several claims to this group. In 1911, the Gold Run Mining and Milling Company was incorporated including claims such as Gold Run, Orofino, Etna, Pike's Peak, Red Top, Tuxedo, Dixie Queen, Roosevelt, Mark Hanna, McBride, Lode, Sunrise Lode, Snow Storm Lode, North Star Lode and Gold King Lode, owned

by men such as the Gargett brothers (LeRoy and Clyde) and John Sarr of Sumas (Jeffcott 1963:173-176). The mines were reached by a crude trail through Gold Run Pass. Equipment to begin operations on the individual claims had to be hauled up the mountain on horseback. Several lots of ore were sent to the Tacoma Smelter, but results were unsatisfactory. All of the mines in the Mt. Baker District were closed down during the First World War, but Roy Gargett hung on to the company until after the war. Eventually, all thoughts of reopening were abandoned (Jeffcott 1963:178).

In 1902, the story goes, Thomas Braithwaite was hunting mountain goats when he discovered the Red Mountain Gold Mine ledge just south of the international boundary on the north slope of Red Mountain. Braithwaite was a prospector who had followed the crowd up to the Twin Lakes area after the Post-Lambert discovery with little success, and being short of supplies, he had diverted his attention to the acquisition of food. He developed the Boundary Red Mountain Mining Company and spent the next several years preparing for production. Braithwaite constructed a dam for power, a sawmill, a stamp mill, reduction buildings and a tramway to carry the ore from mine to mill (Jeffcott 1963:171). The developments payed off; the mine operated successfully until the Depression, about 1932. During its operation, approximately one half a million dollars worth of gold was removed from the mine. After a short closure, the subsequent owners made several attempts to reopen the mill, but it never quite reached the same level of success. The mill burned down in the late 1930s and was rebuilt, but an avalanche destroyed the second mill before it had turned a wheel and the venture was abandoned in 1942 (Jeffcott 1963:172).

The Cascade Mining District

The Cascade District was one of the earliest in the Cascades, dating its formal organization back to September 1889. It is also among the largest districts in the state, encompassing the North, Middle and South Forks of the Cascade River (Figure 4.10). The first discovery is credited to a group of soldiers who, in the 1870s, found a piece of rich float while en route from Fort Colville to Fort Vancouver by way of Cascade Pass (Hodges 1897:54). They returned later and located the Soldier Boy Claim (Buller 1938; Hodges 1897). In 1889, the important discovery of the Boston mine on the North Fork of the Cascade River caused an influx of prospectors. Subsequently, several claims were staked in the district; the number grew steadily for the first eight years. The Silver Queen Mining and Smelting Company made the largest initial investment in the district, holding 14 patented claims in several groupings in 1897 (Hodges 1897).

About the same time, a trail was constructed to provide access to the workings. Trails that were negotiable with packhorses approached the district from both the east and west sides. From the west, the route was by way of the Seattle and International Railway to Woolley (80 miles), by wagon to Marblemount (34 miles), and then six miles by road and two miles by trail to Cascade Pass (Hodges 1897).

At least 500 miners were in the area around the turn of the century. There was a large camp at Mineral Park, with a store operated by Martin Olson, who owned the Jonesberg Mine. The store operated from 1894 to 1896, and remains of a stone structure and archway were visible at the site 50 years later (Clark 1949a).

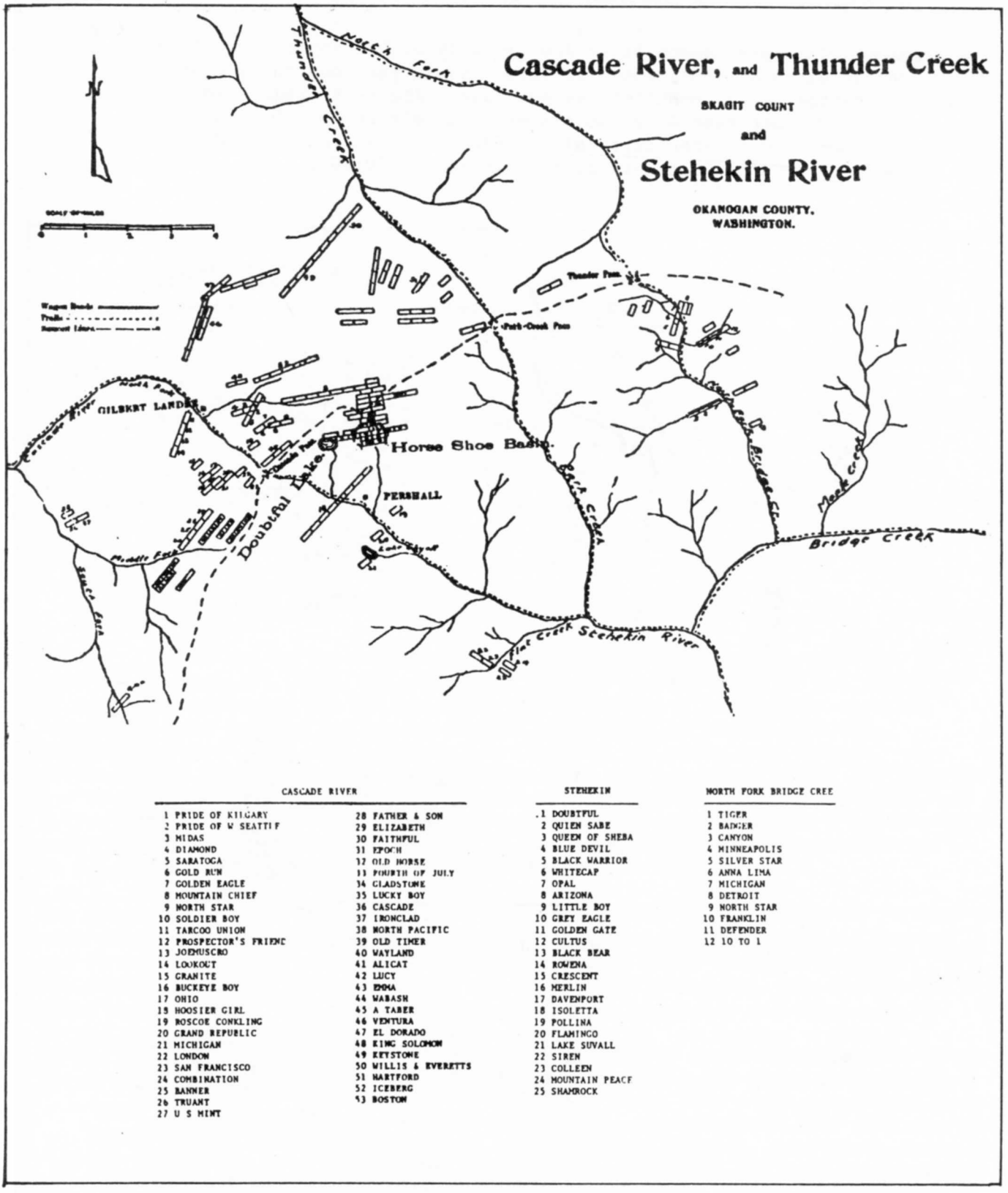


Figure 4.10 Map of the Cascade River Mining area, ca. 1896 (from Hodges 1897).

Darrington Mining District (Whitehorse/Jumbo Mountain)

The presence of mineral deposits in the vicinity of Darrington were first discovered as early as 1891, when the Welman group was located by Charles Welman and Victor Thorp on Whitehorse Mountain. About the same time, discoveries were made near Jumbo Mountain and a vein on Gold Mountain near Darrington warranted further exploration (Figure 4.11). Between 1895 and 1900, 100 claims were made on Gold Hill alone (Poehlman 1979:40).

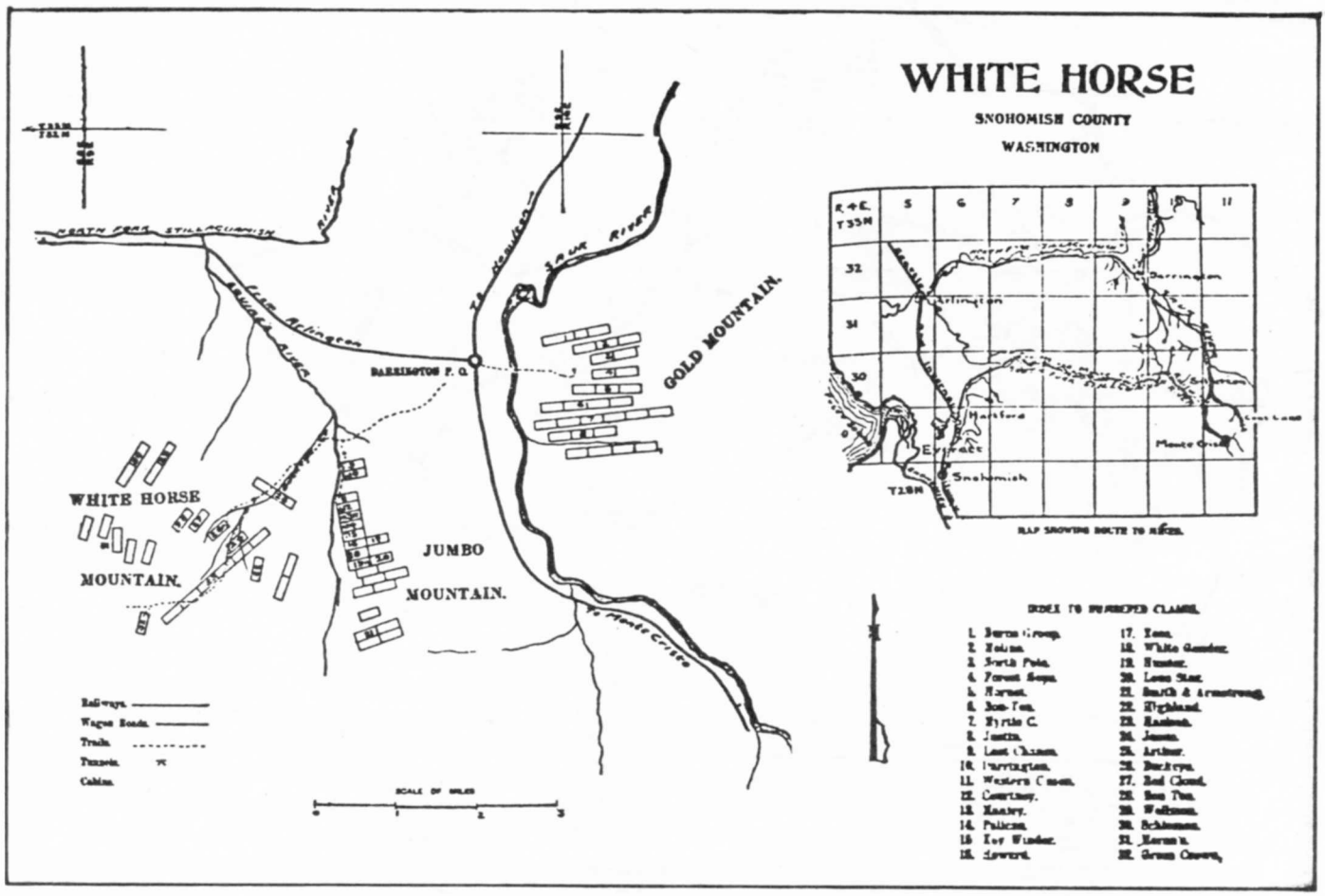


Figure 4.11 Map of the mining claims in the Darrington area, ca. 1896 (from Hodges 1897).

Early prospectors arrived in Darrington by way of a county road from Arlington, the outfitting point and a stop on the Seattle and International Railroad. From Darrington there were roads leading north to Sauk and south to Monte Cristo. In 1897, Hodges wrote: "Thus, the district is quite accessible from several directions, and the Sauk City road is a good one, teams having hauled 3,300 pounds over it" (1897:51). The Everett Smelter was only a short 34 miles by rail from Arlington. The residents of Darrington campaigned for the extension of the railroad to their town, maintaining that "No line of 35 miles in length can be built in the state that will develop as much wealth" (Poehlman 1979:42). In 1901, the railroad, by that time taken over by the Northern Pacific Railroad, was completed to Darrington, increasing the accessibility multifold.

Aerial tramways were built to transport the ore from the mines to the lower valleys. Jesse B. Price, who owned the Pittsburg-Gold Mountain Mining Company and held several claims on Gold Mountain, built a 300 foot suspension bridge across the Sauk River to link his mines with the railroad at Darrington. He then proceeded to construct a smelter large enough to handle 30 tons of ore a day. The smelter was to be ready for operation in the spring of 1908, but Price died by an assassin's bullet on March 4, 1908, and the first and last smelter ever constructed in Darrington never operated. The suspension bridge washed out sometime before 1921, and nothing ever became of Price's grandiose plans (Poehlman 1979:43-44).

The Bornite Gold and Copper Mining Company and associated developers were at the same time investing a lot of money in their mines up Clear Creek Canyon. Three hundred thousand dollars were spent between the opening of the mine in 1903, and 1910. The best equipment, including air drills and compressors, was purchased. Electric lights were installed and an aerial tram connected the mine to the shipping point at Darrington. Activity about the mine boomed in the fall of 1908 and the company kept two shifts blasting and drilling the tunnels with high hopes. Ultimately, the Bornite mine did not produce enough ore for commercial development and was another disappointment to the residents of Darrington (Poehlman 1979:44).

The Silverton (Stilliguamish) District

Mineral discoveries in the Silverton district date from the summer of 1891, or before. On March 11, 1891, an article in a local newpaper told of a discovery of free gold quartz in the region (Hall 1897). Within a few months, several ledges had been located and claims staked. The first locations were the Hoodoo, Anacortes, New York, Granite and Fanny on the south side of the Stillaguamish River. The Stillaguamish District was organized August 26, 1891, and the original name of Camp Independence was changed to Silverton (Figure 4.12). The following winter a townsite was established and in 1892 a wagon road reached the town (Hodges 1897:17). The Everett and Monte Cristo Railroad to Silverton was completed June 29, 1893 (Majors and McCollum 1977).

The economic panic of 1892 slowed activity in the district, but some advancement was made despite this. The Stillaguamish and Sultan Mining Company was formed, with controlling interest in the Hoodoo group (Whitfield 1926). The district quickly became known as one of the most promising, and investment money began to pour in. With great volumes of ore in sight, and the proximity of the railroad and smelter, there were possibilities of turning a good profit in any venture. In the words of L.K. Hodges (1897:17), Silverton had the potential of becoming a "permanent, producing camp" if costs could be kept low:

> The estimated cost of mining the wider ledges in this district is $1 a ton, hauling to the railroad four or five miles is $2, railroad freight $2, smelting $6, a total cost of $11. Concentration will reduce these costs except mining in a degree varying with the rate in which the ore will concentrate, and the only additional cost will be about $1 a ton for concentration (Hodges 1897:23).

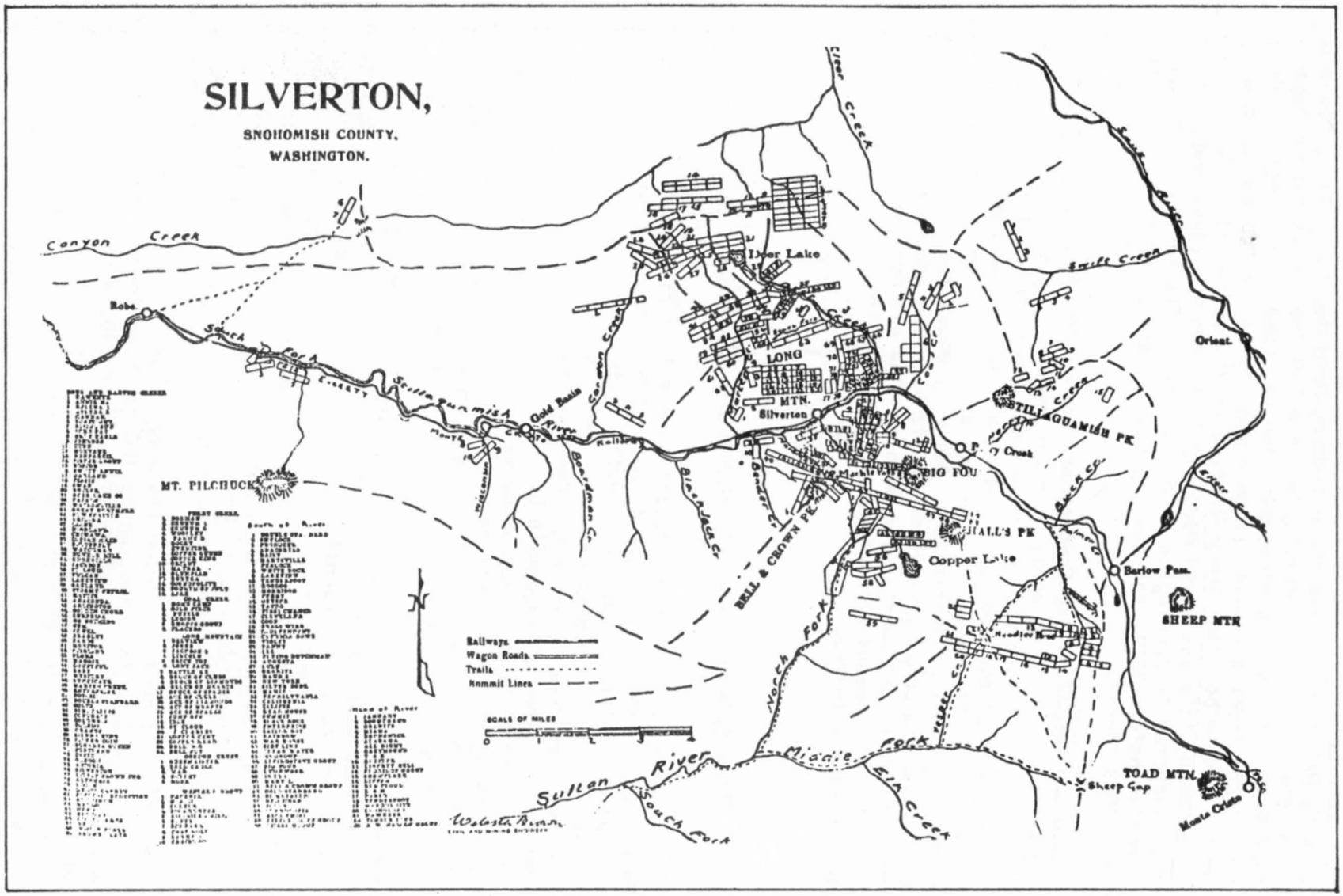


Figure 4.12 Map of the Silverton Mining District, ca. 1896 (from Hodges 1897).

In 1897 the Seattle Times described the workings of several of the big ore producers, including Independent of the Hoodoo group (operating two power drills at the time), the Cleveland group, New York claim, Fanny claim, the Big Four group (incorporated as the Big Four Mountain Milling Company), the Long Mountain Mining Company group, the Bell and Crown group ("contemplating a concentrator in the near future"), the Bonanza Queen group, and Helena (Deer Creek Gold and Copper Mining Company) (Hall 1897). In contrast to the glowing reports of the turn of the century, a report in 1921 indicated that the Silverton District had been "relatively inactive for the past 20 years" (Patty 1921:279). This appears to be consistent with the patterns of many of the mines in the state that were developed early, mostly due to the relatively low quantity of gold and the low return on the other more prevalent minerals.

The Sultan District

In the late 1880s, the Sultan district had a reputation of being one of the paying placer districts of the Cascades. Shortly after, however, the development of quartz lodes in the headwaters of the upper forks and tributaries began to exceed the placers in gold values.

On Hodge's historical maps (1897:16a, 22a), the Sultan District appears to overlap with the Silverton District at the properties between the Sultan and Stillaguamish Rivers (Figure 4.13). The town of Silverton served as the shipping point for both districts; and the Stillaguamish and Sultan Mining Company, one of the most active companies, held interests in both districts. Until 1896, their Little Chief group was the most active in the District. The Stillaguamish and Sultan Mining Company developed eight claims and operated two mill sites in the valley below their claims (Hodges 1897).

Production in the the Sultan District was inhibited by the rough country and the relative isolation. Access to the mines on the North Fork of the Sultan River was by trails over Marble Pass. The Forty Five Consolidated Mining Company built an aerial tram to Silverton, but just as it was completed, a branch of the railroad washed out and transportation was interrupted for several years. A puncheon road was then built from Sultan, a stop on the Great Northern Railroad, to the Forty Five group 30 miles to the northeast. The road was completed at high costs, but could only accommodate light wagons and pack trains (Patty 1921:296-297). The Forty Five Road, however, provided the only access to the North Fork mines and was heavily used for several years.

Prospecting on the Middle Fork of the Sultan Basin dates back to 1889. The development of this group also suffered due to the inaccessibility of the claims. Most of the mines closed down within a short time of discovery because the transportation costs were too high to remove any but the highest grade ores. The Sultan group, holdings of ten claims, was developed intermittently with summer crews. None of the claims in this area ever became large producers.

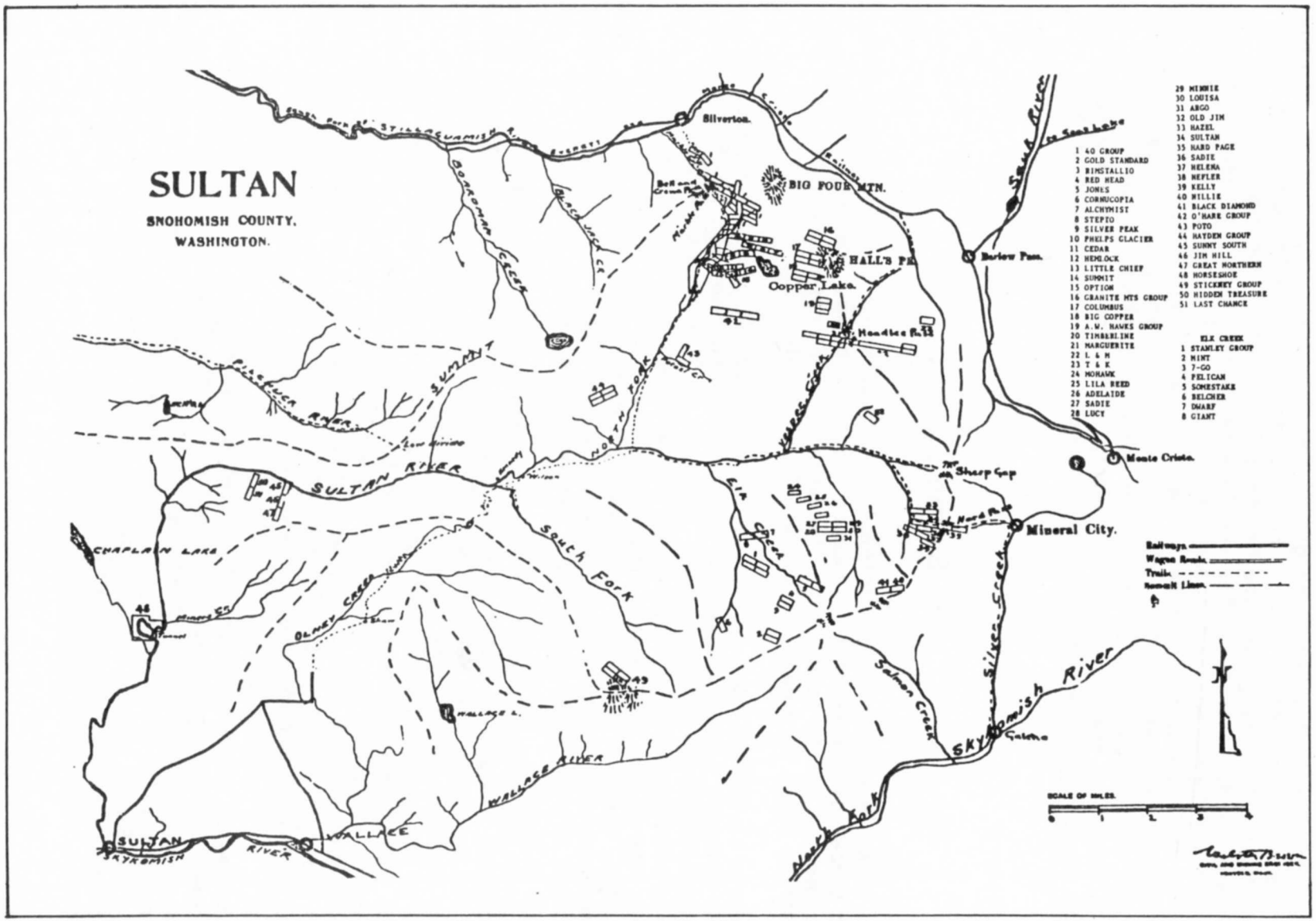


Figure 4.13 Map of the Stillaguamish and Sultan River mining claims, ca. 1896 (from Hodges 1897).

Monte Cristo Mining District

The first discovery in the Monte Cristo District (Figure 4.14) was made by Joseph Pearsall on July 4, 1889. Pearsall, on a solitary prospecting trip from Silver Creek, stood above Sauk Basin and studied the view in his field glasses. He saw broad, red, glittering bands in the mountains that surrounded the basin below, and "waving his arms in delight, he exclaimed: 'It is rich as Monte Cristo,' and named the mountain after that master of fabulous wealth" (Hodges 1897:11). Pearsall and fellow prospector, Frank Peabody, solicited funds for the development of the newly located finds from John McDonald Wilmans. In late August 1889, Pearsall and Peabody returned to Monte Cristo and staked several claims for Wilmans, including the Ranger, Baltic and '75 (Majors and McCollum 1977). Within just a couple of years, several mining companies owned groups of claims in the district. Most of these were purchased by the Rockefeller Syndicate in the fall of 1891 (Hodges 1897).

The key to successful development of the minerals at Monte Cristo was the discovery of Barlow Pass in 1891. Plans were made for a railroad into the mining community through this pass. It was necessary to build a puncheon road to the site first, to haul supplies. The road reached Monte Cristo in July of 1892. In August 1893, the Everett and Monte Cristo Railroad was completed, connecting the town to the Syndicate-built lead smelter in Everett (Hodges 1897). This was the only railroad in the state to be constructed solely for mining purposes (Patty 1921).

The mining community developed rapidly as the money from investors such as John D. Rockefeller supported the construction of a huge concentrator (to the tune of $250,000) and a tramway to transport the ore from mine to mills (Majors and McCollum 1977). A total of five tramways were eventually built:

> Construction of the tramways began in 1893 and was finished during the spring of 1894 at a cost of about $100,000. These gravity-powered cables carried buckets of ore from lofty mountainside mines down to the concentrator at Monte Cristo. One tramway extended about 8,000 feet from the Pride of the Mountains Mine, across Mystery Hill, and down to a crusher near the concentrator. A second tramway extended some 3,600 feet from Mystery Hill itself down to the crusher. Remains of the rusting cables and rotting tower timbers can still be seen in places. The longest tramway ran about 12,000 feet from the Comet Mine, precariously perched high on the side of Wilmans Peak, down to a series of storage bins near the concentrator. The fourth tramway ran about 4,000 feet from the Golden Cord (Justice) Mine down to the concentrator area; while yet a fifth extended some 2,000 feet from the O and B Mine (Majors and McCollum 1977:15).

In 1892 the town consisted of about 100 or 200 men, but by 1893 it had swelled to approximately 1,000. The town was platted and lots put up for sale (Figure 4.17). At its height (1894-97), Monte Cristo sported four hotels, four restaurants, a school, a hospital (one doctor), six saloons, two churches, three barber shops, a drug store, two butcher shops, a real estate office, a clothing store and the usual assorted brothels (Majors and McCollum 1977). It was no longer a town of miners, but was the home of several merchants and professional types and their families. Monte Cristo would have prospered, if the mineral veins had been rich enough to offset the expense of development,

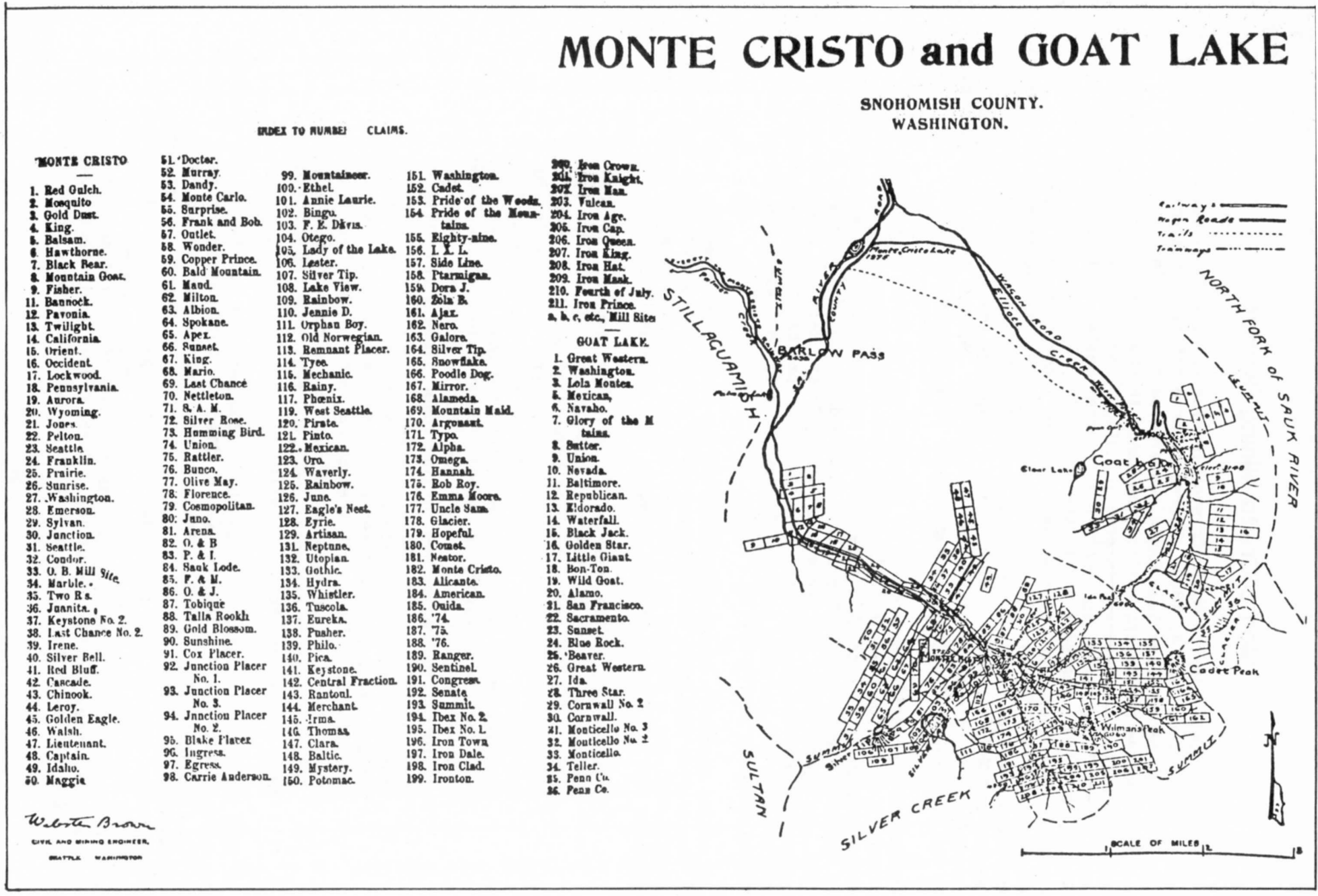


Figure 4.14 Mining claims in the Monte Cristo and Goat Lake areas, ca. 1896 (from Hodges 1897).

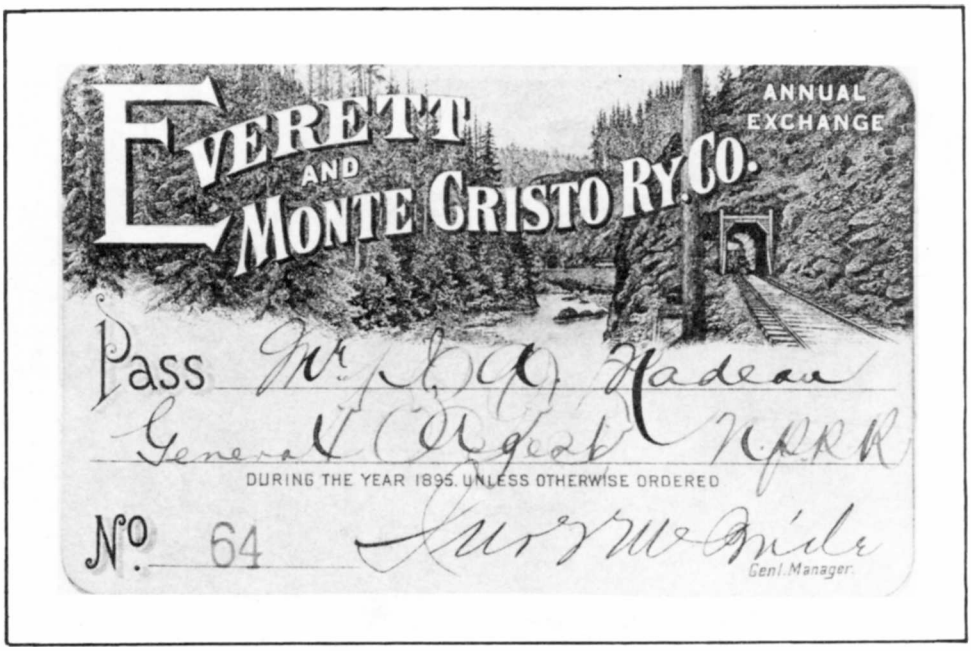


Figure 4.15 Annual pass for the Everett and Monte Cristo Railroad, 1895.

but low quality ore and declining silver prices worked against it (Gray 1969:6). In 1898, the mines were closed after a flood along the South Fork of the Stillaguamish caused extensive damage to the railroad. Fearing isolation and starvation through the upcoming winter, the residents literally abandoned the little town for the safer surroundings of Granite Falls (Majors and McCollum 1977:20).

The mines reopened in 1902 after the railroad was rebuilt and purchased by Northern Pacific, but more railroad trouble and financial depression in 1907 resulted in another closure. Another development scheme around 1912-14 was also short-lived (Martinsen 1966:6). Although a few claims have been worked intermittently since that time, the town has been abandoned. In 1915, the railroad was purchased by the Rucker brothers of Everett who reopened it as the Hartford and Eastern. It operated for a time as a logging and recreation railroad. In the 30s, another flood and the Depression closed the railroad for the last time. In 1936, it was entirely dismantled and sold for scrap iron to Japan (Majors and McCollum 1977:23).

Index Mining District

Development in the original unorganized Index Mining District focused on a small number of claims along Eagle Creek, Beckler River, Trout Creek and Howard Creek (Figure 4.20). Claims were situated along several ledges that showed some promise of gold, virtually the only mineral in the Cascades in which people were interested at the time. In 1897, two copper mines opened, the Sunset and Copper Bell, and these produced occasionally over the next 30 years.

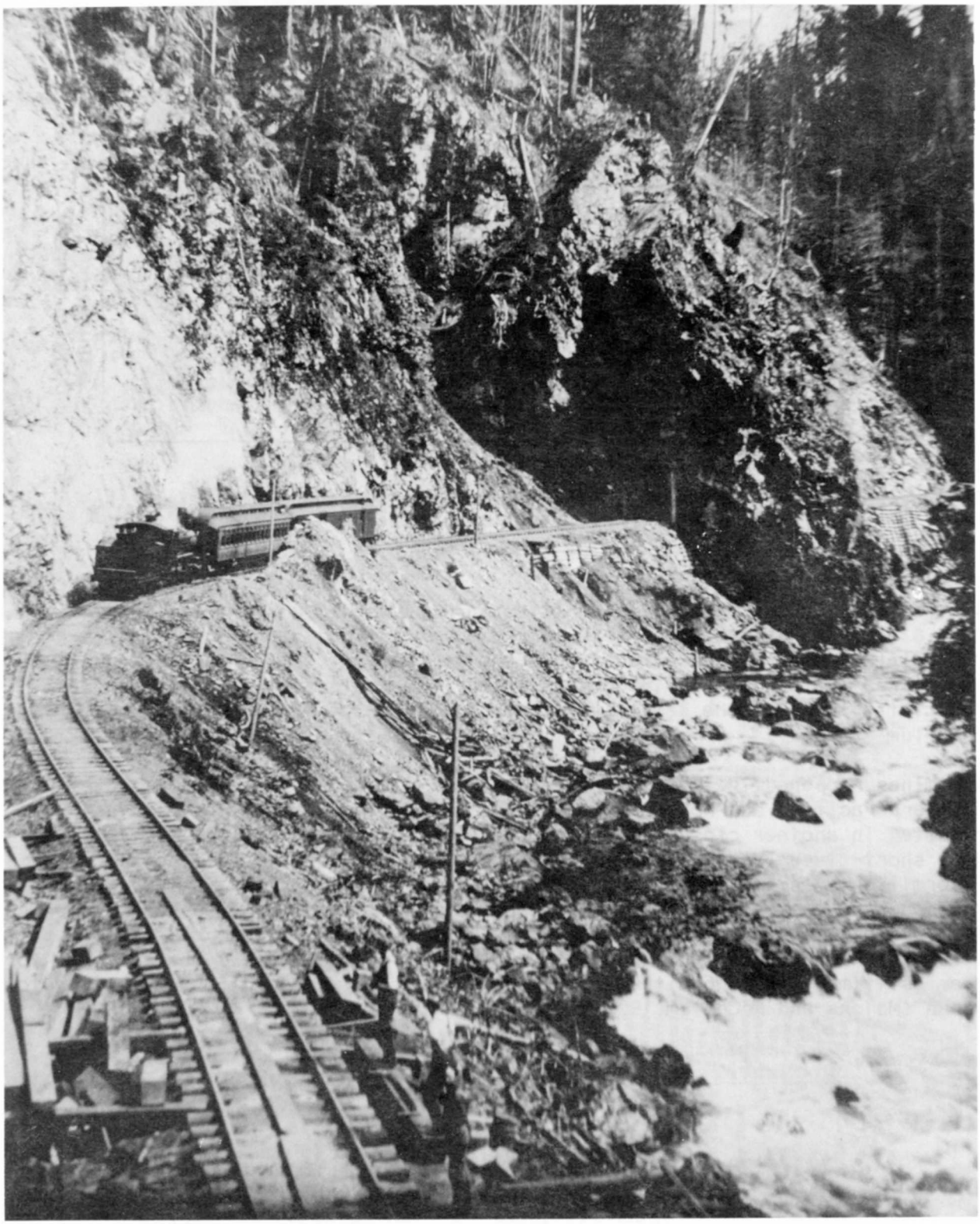


Figure 4.16 Locomotive No. 3 backed slowly down the canyon of the Stillaguamish River with a passenger and combination car on its way to Monte Cristo (Seattle Times 1979).

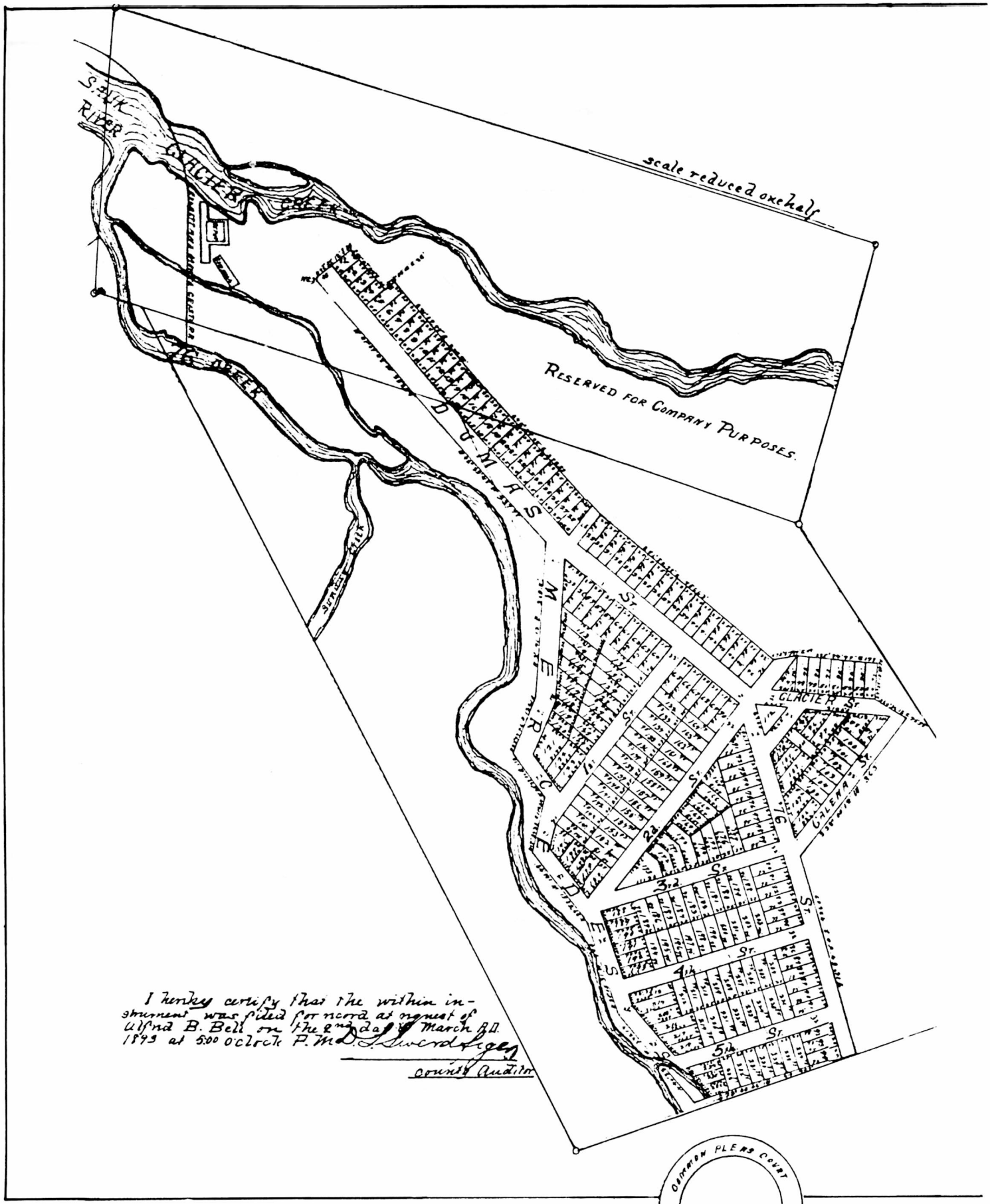


Figure 4.17 The townsite of Monte Cristo was platted in 1893, and lots became available for sale.

MAP OF THE TOWNSITE OF

MONTE CRISTO

SNOHOMISH COUNTY WASHINGTON Scale 80 ft = 1 in.
January 1893

DESCRIPTION AND DEDICATION

KNOW ALL MEN BY THESE PRESENTS: that the Monte Cristo Mining Company, a corporation organized and existing under the laws of the State of Washington, and being the owner in fee of the lands embraced in this plat, does hereby plat as and by the name of "Monte Cristo" portions of Junction Placer Claims numbered One Two and Three situate in Monte Cristo Mining District, Snohomish County Washington and described as follows to-wit:— Beginning at a stone monument marked M. C-1 which monument is situate about 120 feet south of the south bank of Glacier Creek, and about 220 feet north east of the north bank of '76 Creek and from which the south west corner post of Junction Placer Claim No. 1 bears S 85°-44-26" W. and is distant 442 ft.:- thence N. 48°.52'.12" E 40 ft.: thence S. 41°.07'.48" E. 100 ft.: thence N. 48°.52'.12" E., 26 ft.: thence S. 41°.07'.48" E., 248.98 ft.: thence S. 42°.39'.48" E., 372.89 ft.: thence S. 51°.50'.48" E., 456.63 ft.: thence N. 79°.57'.49" E., 48 ft.: thence S. 85°.34'.47" E, 175 ft.: thence S 4°.25'.13" W, 75 ft.: thence S. 6°.36'.[illegible] E., 75.78 ft.: thence S. 38°.09'.12" W., 363 ft.: thence S. 16°.54'.54" E., 426.07 ft.: thence S 73°.05'.06" W., 361 ft.: thence N. 40°.22'.27" W., 242.14 ft.: thence N. 20°.09'.31" W. 200 ft.: thence N. 37°.58'.51" W., 191.48 ft.: thence N. 17°.54'.28" E., 112.64 ft.: thence N. 36°.28'.00" W., 110 ft.: thence N. 22°.03'.26" E., 126.15 ft.: thence N. 3°.41'.12" E., 309.60 ft.: thence N. 42°.39'.48" W., 337.78 ft.: thence N. 41°.07'.48" W. 350.64 ft. to the monument M. C-1, the place of beginning.

The sizes of lots are as stated upon this plat and the lots are numbered continuously from one to two hundred and thirty six inclusive.

The streets within said townsite and their widths are as marked upon the plat and shall be known by the names as thereon given. The streets shown upon the plat are dedicated to the public as such.

IN WITNESS WHEREOF the said donor has caused these presents to be executed in its name and its corporate seal to be affixed thereto by its president and secretary this 24th day of February, 1893.

The Monte Cristo Mining Company
By Joseph L. Colby President
Charles F. Rand Secretary

THE MONTE CRISTO MINING COMPANY
INCORPORATED
OCT 18 1891
STATE OF WASHINGTON

State of Ohio } S.S.
Cuyahoga County }

I, Gustav von den Steinen do hereby certify that on this 24th day of February, 1893 personally appeared before me Joseph L. Colby to me known to be the President of The Monte Cristo Mining Co. a Washington Corporation and Charles F. Rand to me known to be Secretary of said Monte Cristo Mining Company the Corporation described in and which executed the foregoing plat and each severally acknowledged to me the said President that he signed the name of said Corporation thereto by authority of its Board of Trustees, and his own name as President and the said Secretary that he affixed the Seal of said Corporation thereto by authority of its Board of Trustees, as the free and voluntary act and deed of said The Monte Cristo Mining Company, and of said officers for the uses and purposes therein mentioned.

Given under my hand and official seal this 24th day of February 1893.

Gustav von den Steinen
Notary Public within and for said County and State aforesaid

NOTARIAL SEAL
CUYAHOGA COUNTY OHIO

The State of Ohio } S.S.
Cuyahoga County }

I, Levi E. Meacham, Clerk of the Court of Common Pleas a Court of Record of Cuyahoga County aforesaid, do hereby certify that Gustav von den Steinen before whom the annexed acknowledgment was taken was at the date thereof a Notary Public in and for said County, duly authorized by the laws of Ohio to take the same; that I am well acquainted with his handwriting and believe his signature thereto is genuine. In Testimony Whereof, I hereunto subscribe my name and affix the seal of said Court at Cleveland, this 24th day of February A.D. 1893.

Levi E. Meacham Clerk.



Figure 4.18 Monte Cristo in the height of the mining activity, about 1896 (Nordland Collection, University of Washington Library).

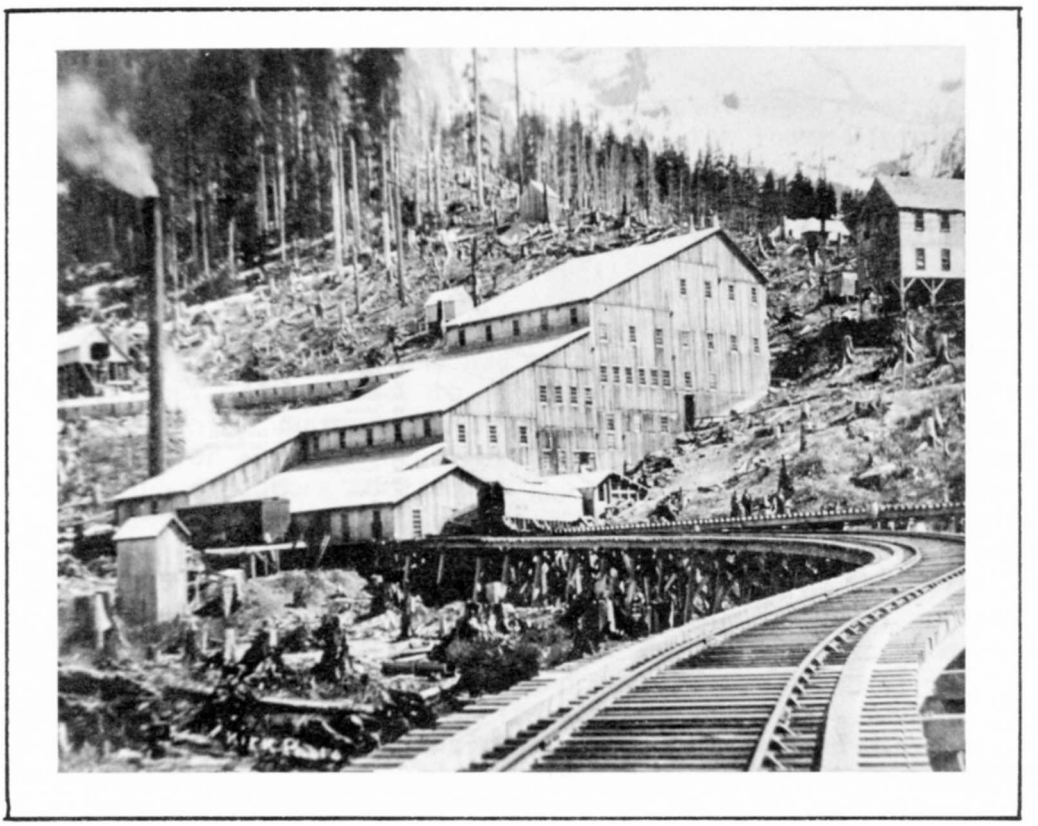


Figure 4.19 The Ore concentrator mill in Monte Cristo in 1894 (photograph by George W. Kirk, Nordland Collection, University of Washington Library).

Sunset Mine at Index, discovered on June 18, 1897, immediately began to extract high quality ore. The future looked bright and plans for improvements began to materialize. A 12-mile wooden tramway was built from the mine to Index, located on the Great Northern Railroad. With transportation costs low, it appeared that big profits were just around the corner. They operated intermittently amidst the setbacks of fire, inclement weather, an unsteady market, and World War I (Washingtonian 1928). During the late teens, the Sunset Mine was the most consistent producing property in the Cascades; Copper Bell ranked second (Patty 1921).

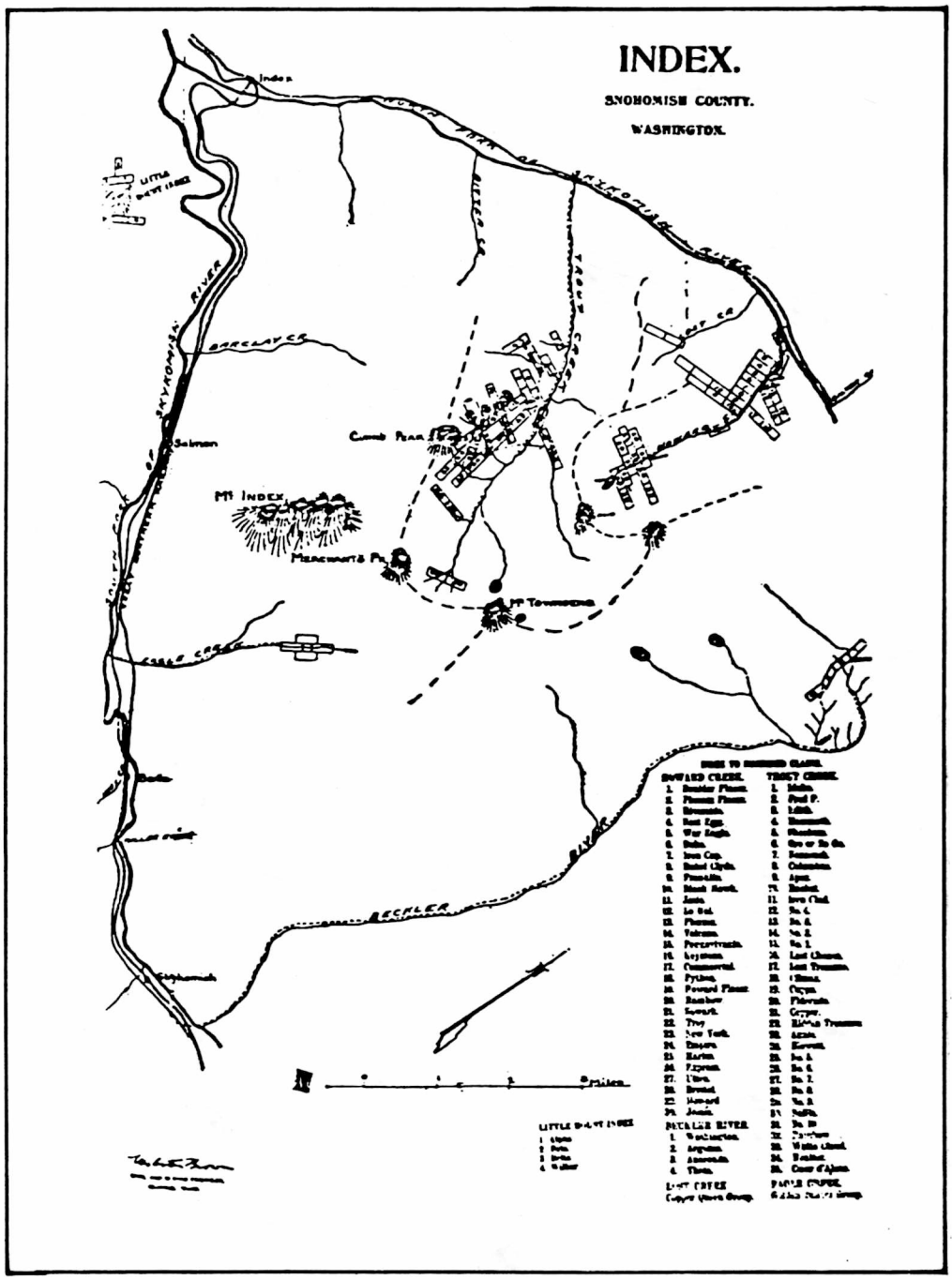


Figure 4.20 Map of the Index Mining District, claims along Eagle Creek, Beckler River, Trout Creek and Howard Creek, ca. 1896 (from Hodges 1897).

Silver Creek Mining District (Skykomish)

The Silver Creek District lies between the Monte Cristo District on the north and the Index District on the south. The Silver Creek District was one of the first discovered in the Cascades, dating from August 24, 1871 when George White and Nile Taylor filed six claims on Lost Creek (Whitfield 1926). Another discovery in 1874, by Hans Hanson, appears to be the beginning of active mining in the district. Shortly thereafter, the discovery of an outcropping of iron pyrites mistaken for gold "caused a stampede among the loggers all along the route" (Hodges 1897:27). The news prompted four prospectors to pool their resources, a total of between two and three thousand dollars, and build an arrastra on the future site of Mineral City. Some amalgam was produced; however, it was stolen by an employee, and the venture was abandoned (Hodges 1897:27). Parenthetically, no other reference to the construction of an arrastra on the west side of the Cascades was found. Arrastras were not commonly used, the stamp mill being favored.

In 1874, several additional claims were filed on the north and south branches of Silver Creek and Blue Gulch. A meeting was held on October 15, 1874, to organize the Skykomish Mining District:

> The name of this mining district shall hereafter be known as the Skykomish Mining District and shall be bounded as follows. Commencing at the junction of the Skykomish and Sultan rivers, thence in an easterly direction along the Cady trail, to the summit of the Cascade range of mountains, thence north along the summit of said range to the headwaters of the middle fork of the Sultan River, thence down the Sultan River to the place of beginning (Whitfield 1926:721).

It appears that this district originally encompassed parts of what later became known as the Sultan District, possibly part of the Index District, and the Silver Creek District as it is known today (Figure 4.21).

Although among the first formed, Hodges explained why the district was one of the more backward in terms of development:

> It was discovered at a time when attention was centered on real estate and men who had property of that kind for sale went out of their way to discourage the diversion of capital into mining ventures. At the time little was known of the character of the mineral belt of the Cascade Mountains, and mining engineers scoffed at the ores of this region as low grade and refractory, and declared that the formation was so broken that it was impossible to trace the ore bodies to any depth. The attention of the prospectors was at that time centered on silver-lead and free milling gold ores, so that they passed by the ledges of sulphide ore heavily capped with oxidized iron, which they found towards the mouth of the creek, and went on nearer its source, where they found galena. Thus it was that the creek received the misnomer "Silver," and, when the fall in the price of silver caused depression in mining for that metal, the camp was almost deserted and many of the earlier locations were abandoned.

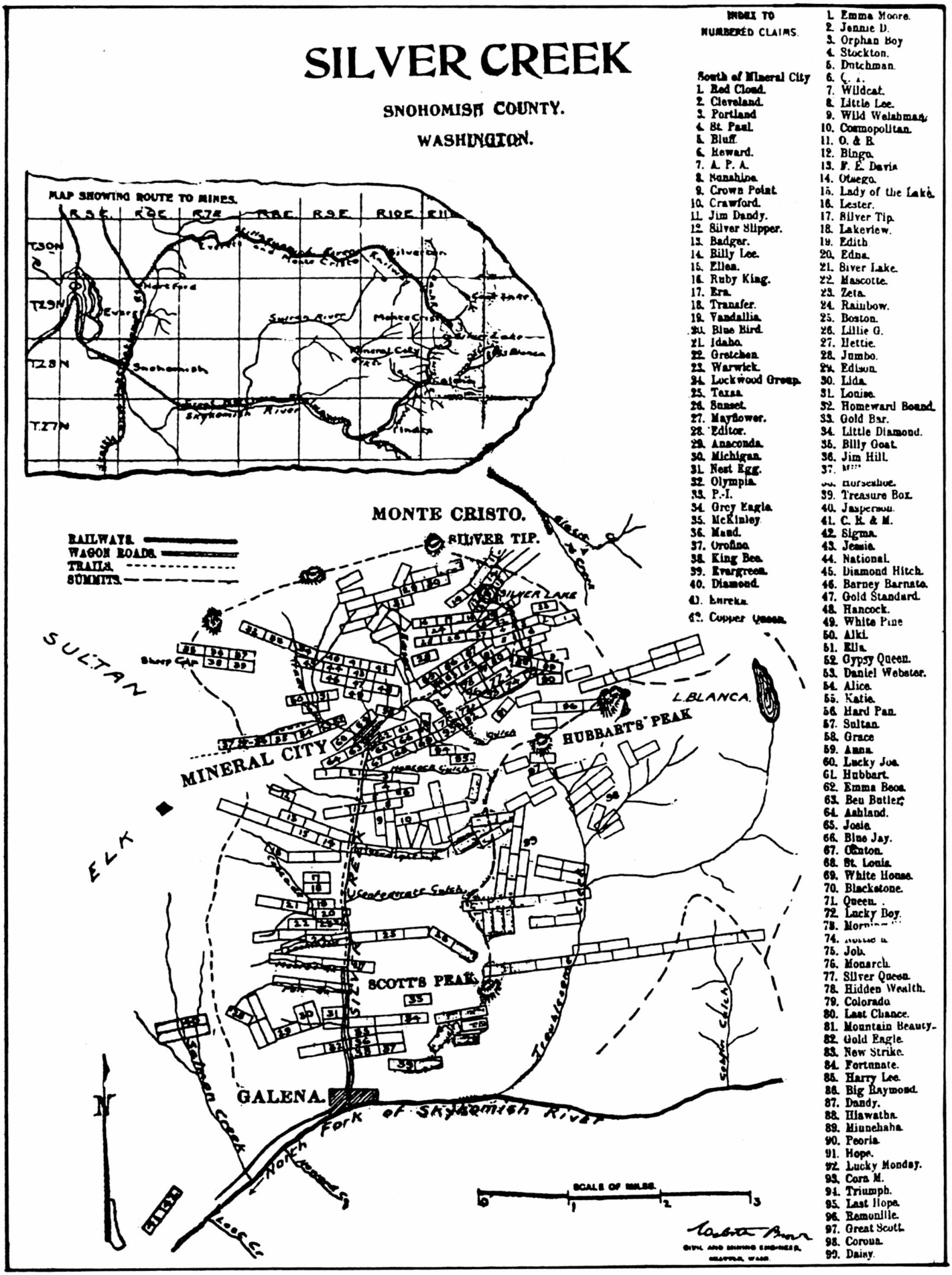


Figure 4.21 Map of the mining claims along Silver Creek, ca. 1896 (from Hodges 1897).

> Later discoveries and developments have proved that it is not a silver, but a gold and copper camp, and that the formerly despised iron caps cover ledges as rich as those which carry silver. This discovery is due mainly to the riches unearthed from beneath similar iron caps across the boundary. The mining world has now formed a true estimate of the character and value of the ores and development has been resumed with such vigor that the camp will this year have renewed life (1897:26).

The district was not very active until 1882, when several discoveries were made in rapid succession. As a result, for the next eight years there was quite a flurry of activity, and the townsites of Mineral City and Galena were established. A hotel was built at Galena to accommodate the influx of prospectors (Burgstahler n.d.).

Between 1890 and 1894, a trail was cut between Mineral City and Galena and a road was completed from Index to Galena. The road was paid in part by the miners and the remainder by the county. The Great Northern Railroad extended track as far as Index, which was 38 miles from the Everett smelter. There were hopes of a railroad up Silver Creek to connect Index and Galena; a line to be known as the Seattle, Snohomish and Spokane (the "Three-S"). But, this was never realized (Burgstahler n.d.).

Miller River (Money Creek) District

The Cleopatra Mines were among the first to be located in the Miller River District, the discovery dating back to the survey for the Great Northern Railroad across the Cascades. The district had an encouraging beginning because it was so closely connected by the railroad. To reach the mines at the head of the Miller River involved an 85 mile train ride from Seattle to Skykomish, and then five miles by road and two miles by trail (Hodges 1897). Development work did not begin until 1897, when the county built seven and one half miles of puncheon road on the west side of Miller River to provide access to the most promising prospects (Smith 1915). The subsequent discoveries were promising; the district became the second in the Cascades to operate a power drill plant (Hodges 1897:36).

The district, including mines such as Cleopatra, Aces Up and Mona, to name just a few, reached a climax of production between 1900 and 1905. A small concentrating mill was installed at Berlin (Miller River), but it soon proved a failure and was abandoned (Smith 1915:170). Production continued for many years after the heyday had passed, although on a much reduced scale.

The Cleopatra Mine operated intermittently through 1941, but throughout its operation most of the ore was moved by pack animal. In 1940, a 4,100 foot tramline was built connecting the mine with the camp on the valley floor (Livingston 1971:139). In 1941, it was reported that a total of $250,000 worth of ore had been taken from the mine over the years it had operated; at that time it was classified as "nonessential" and closed down because of the war (Livingston 1971:139).

In 1897, Hodges reported that the Coney Mine, owned by the Baltimore and Seattle Mining and Reduction Company, was first in production. They employed 20 men and operated a double shift. Electric equipment was installed at Coney Creek to furnish lights and power for driving the tunnel and a ventilation plant (Smith 1915). Coney was closed in 1897 due to litigation over the deaths of three men in an explosion outside the mine; in 1915 Smith reported that the development at Cleopatra had surpassed that at the Coney Mines (1915:181). Coney was reopened in later years and made shipments of gold ore to the Tacoma smelter in 1934, 1937-39, and 1941.

The Apex Ledge of galena was located by Alexander McCartney in 1889 (Hodges 1897), and throughout its operation was credited with the largest production of any mine in the Miller River District. [Hodges (1897) described this discovery under his section on the Money Creek District, but later reports (Hill 1912; Patty 1921) combine the two districts. In a more recent report, they are again separated (Livingston 1971)]. Between 1892 and 1901, $80,000 worth of ore was produced (Patty 1921). It was transported to the railroad terminal at Berlin by pack train. In 1901, a wagon road was built to the property and several tons of ore were subsequently sorted and shipped. But the mine could not continue a high rate of production, and it was closed until 1917. After it re-opened, Apex continued to ship ore for several years, becoming one of the largest shippers of ore containing arsenic, but the principal values were in gold with some also in silver. The price of refined arsenic was low, and the company could not justify installing special machinery for its recovery (U.S. Bureau of Mines and U.S. Geological Survey 1926:467). In 1920, Apex was the only mine in the Miller River District showing activity. In 1922, the president of the Apex Gold Mining Company, William J. Priestly, published an advertisement pamphlet to solicit $30,000 to enlarge his operations. He reported that the mine was "splendidly equipped":

> The mine is connected with the Great Northern Railroad by about six miles of its own railroad, equipped with large ore bunkers to 1,000 tons capacity, a 3,200-foot aerial tramway, a 10,000-foot capacity sawmill, stables and other substantial buildings, has its own water power installed and in operation on the property by a 2,000-foot 22-inch diameter pipe line under a 204-foot head, water wheel, generator, etc., capable of generating about 200 K.W., sufficient for all needs. Included also are several motors, air compressor, drills, two blacksmith outfits, tools and supplies, together with the first unit of an efficient concentration layout, all in first-class shape and operating condition.
>
> In conclusion, it may be stated that here is an opportunity to become interested in a gold mining enterprise which for the past five years has been steadily worked profitably without a reduction plant, which, if the work is extended as herein proposed by the installation of a more complete mill, now fully warranted, with the other large units already in, justifies every expectation that the property will at once become a sound paying proposition of considerable magnitude (Apex Gold Mining Company 1922).

The mine was closed in 1943.

In recent years, several of the properties in the Index, Miller River and Money Creek areas have been consolidated under Mono Resources, Inc. The work has produced an unspecified quantity of concentrates for shipments to Japan (Meschter 1972).

Buena Vista Mining District

The Buena Vista District has also been grouped with the Miller River District in Figure 4.22. Hodges describes the close similarities:

> This district lies along the north fork of the Snoqualmie river and its tributaries and is an extension across the ridge of the Miller and Money Creek districts, having the same characteristics. In fact, many of the principal claims are on extensions of the great ledges of Miller River and Money Creek traced through the ridge to the Snoqualmie side - a striking evidence of the strength and permanence of the mineral bodies of the Cascade Range (1897:43).

Gold, silver, lead, copper and zinc were among the primary minerals of the Buena Vista District. Much of the work began in 1896 and numerous claims had been filed within a year (Hodges 1897).

Bear Basin Mines were the principal investors in the this district after the turn of the century. These claims were originally located by three men, L.A. Nelson, Joseph Brown and A. Lovelace, in 1905. Many of the developments were completed while under the operation of the Snoqualmie Mining Company, which maintained a camp in the center of the glacial cirque known as Bear Basin. Heavy equipment had to be dragged to the mines on skids (Stowe 1978). In 1917, the company constructed a flotation mill below the camp on Bear Creek, and other improvements followed.

> The company also installed a 1,500 foot, two bucket gravity tram from the millsite to the portal of the No. 3 adit. Before the mill and tram were fully utilized, the claims were sold to Mr. Jones, who moved the tramline to the portal of the No. 6 adit. Before the tram could be put into operation, the mill burned down [approximately 1934] (Livingston 1971:128).

Several claims of the Lennox Mining Company and Development Company were located on Lennox Creek, and the Rainbow Mining Company also operated in this vicinity. Early prospectors built shake and pole cabins, and by the time an automobile road was built through, there was a small mining community at the mouth of Lennox Creek (Seattle Times 1956).

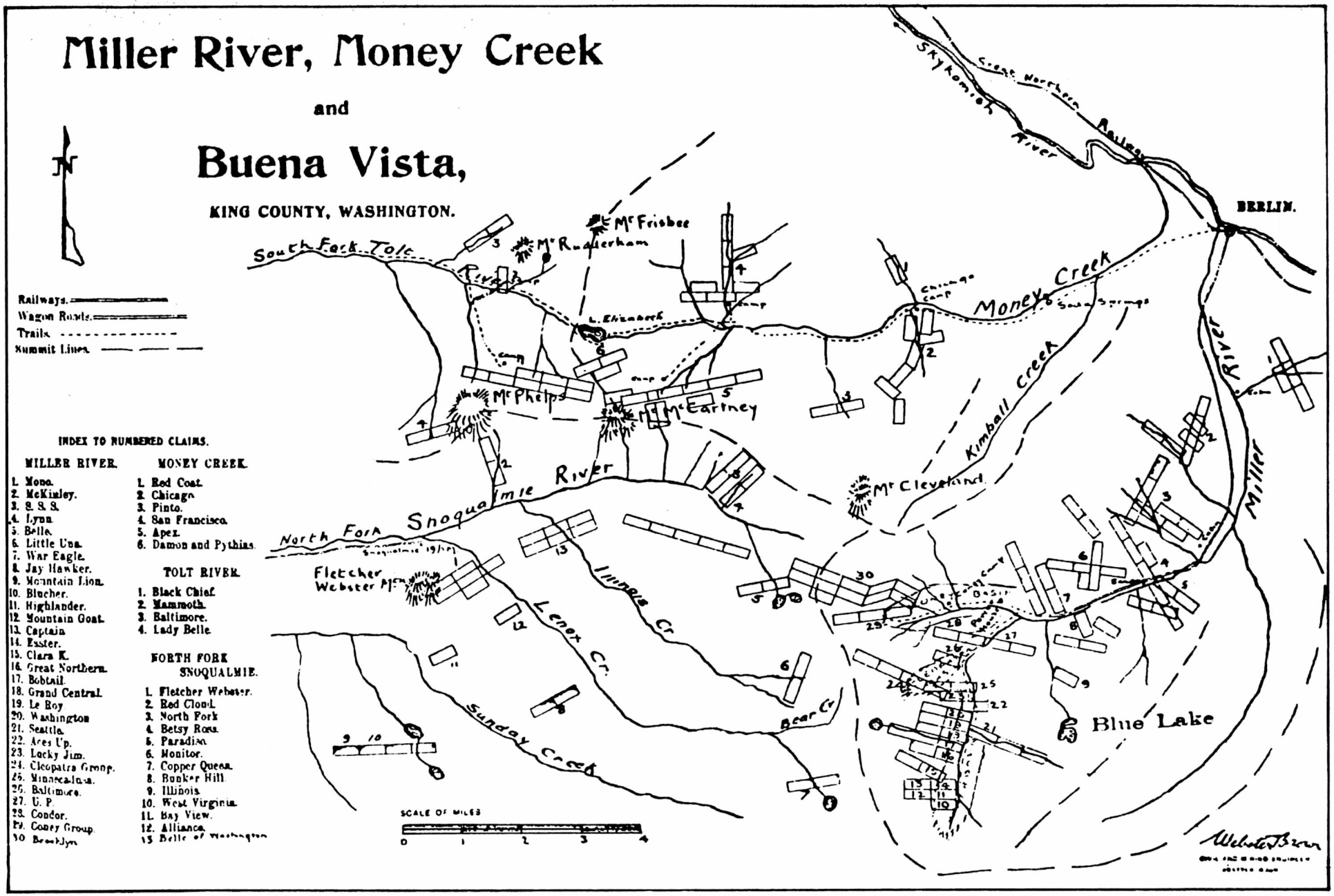


Figure 4.22 Map of the mining claims of the Miller River, Money Creek and Buena Vista areas, ca. 1896 (from Hodges 1897).

Snoqualmie Mining District

The first mining efforts in the vicinity of the Snoqualmie Valley began in the summer of 1869 when a group of men gathered near North Bend and set out up the Middle Fork drainage on a prospecting expedition. Arthur A. Denny, an organizer and leader of this adventure, was in search of a mineral he had heard was used by the local Indians as a face paint, which he assumed to be plumbago (graphite). An Indian guide was hired, who did not show them carbon deposits as the expedition had anticipated, but instead led them to surface deposits of iron ore.

> What led to its discovery was: I had noticed, when I first lived in the Snoqualmie region, what I supposed to be plumbago. They [the Indians] used it as a black paint for coloring their faces. On one occasion I was in conversation with Mr. Wilson, Commissioner of the General Land Office, and he showed me plumbago from Virginia. "If that is plumbago," I said, "I think I could find an abundance of it in my country." At his suggestion when I returned I got an old Indian to guide me and started out a search of what I supposed to be plumbago. Those who were judges pronounced it red hematite. This was in July 1872 or 3, before the railroad line had been surveyed through there. That was the first iron deposit of any note discovered in the country (Denny 1878).

Denny and his cohorts kept their finds somewhat secret until the Denny Iron Mines Company was formed in 1882. At that time, Denny returned with his business partners to locate claims. The Snoqualmie drainage was found to be extensively mineralized. In 1885, Northwest Magazine reported discoveries of rich magnetic iron ore overlying a copper vein near Snoqualmie Pass (Northwest Magazine 1885). In addition, gold, silver and zinc were among the minerals found and mined in the area.

Transportation to the remote mines was difficult and continued to be a major concern for many years after the railroad. The roads were rugged and difficult to construct and maintain. Hard winters took their toll. It took days to reach many of the claims from Seattle by a combination of railroad, wagon, horseback or foot trail. Materials were hauled in to erect temporary cabins or tents. Where claims were concentrated, camps naturally developed. Some of the millsites grew into small settlements, while others remained as a scatter of tents and shafts.

When Arthur Denny and his companions returned to the vicinity of their finds in 1882, they travelled the Snoqualmie Wagon Road to within four miles of the pass, from which point they departed along a trail for one mile (Hodges 1897). They staked and named nine claims: four on the Denny Lode, three on the Cliff Lode and two on the Climax Lode (Figure 4.23). Samples were assayed the following year, and the best quality Bessemer ore (used in the production of steel) was found to be from the Cliff Lode. The Climax Lode was pronounced valueless, but the Denny Lode, although not of great value for iron, yielded silver and gold as well as high quality copper ore.

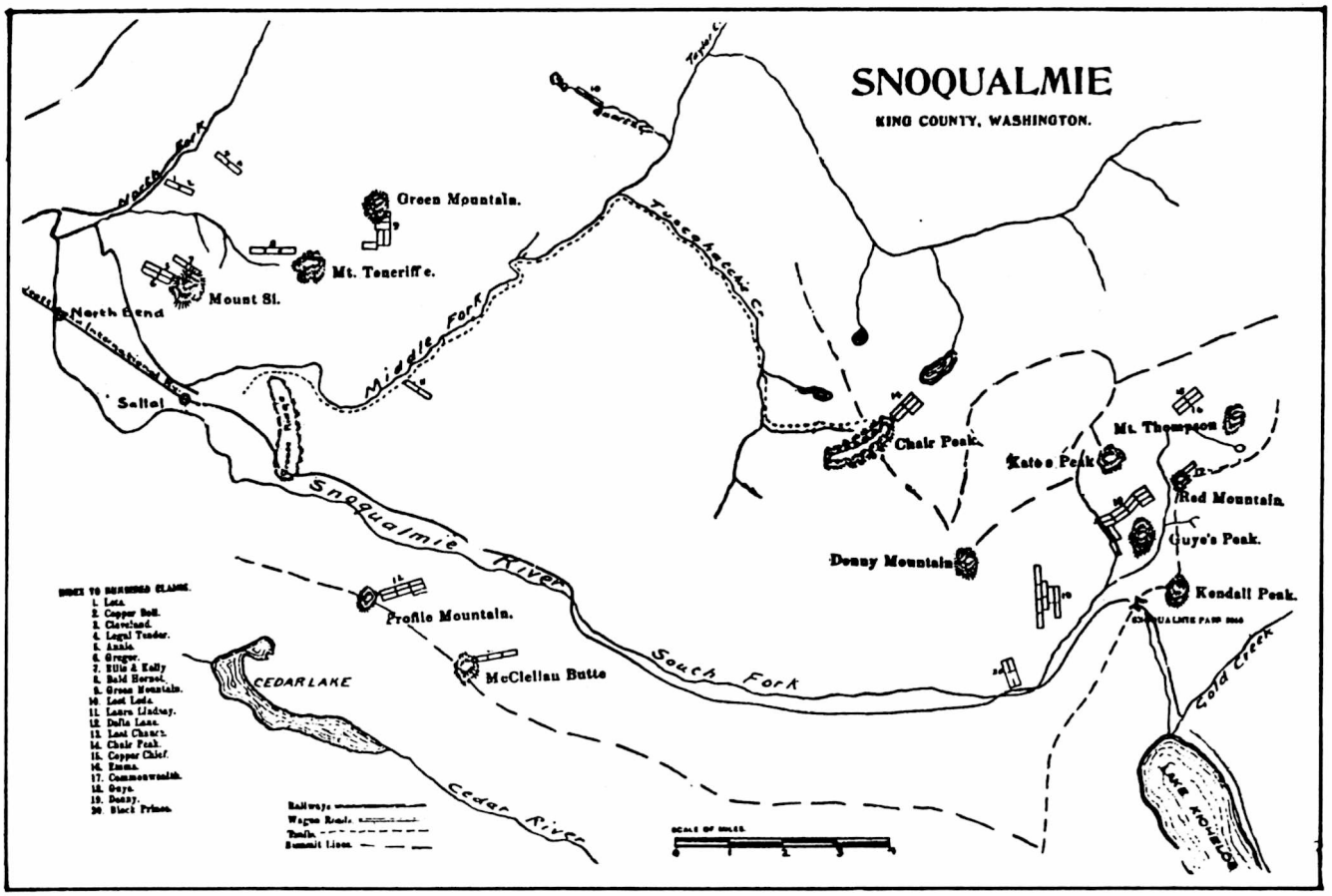


Figure 4.23 Map of the claims in the Snoqualmie Mining District, ca. 1896. Arthur Denny's nine claims are between Denny Mountain and Kendall Peak (from Hodges 1897).

Ideas for an iron and steel works with a smelting plant and shops for the fabrication of rails and other steel products, were conceived (Bagley 1929:786, 838-840). The location was to be the east shore of Lake Washington. The resulting town of Kirkland, named after its founder, grew quickly in the late 1880-90s as the buildings for the smelting plant and foundry were constructed. Plans were laid for transportation systems to link the mines to the industry and then to market. A promising report was printed in the Seattle Post Intelligencer in 1891:

> The iron to be used at the works will be from the Denny mine, in the Snoqualmie Pass. A force of men is now engaged in opening up this mine and a contract has just been let for the extension of the Seattle, Lake Shore and Eastern [Railroad] from Salal Prairie to the mines. The Northern Pacific is likewise building from Palmer on its main line to the mines. The Lake Washington belt line is graded from Renton to Kirkland and will be extended thence to connect with the Lake Shore road near Redmond, giving railroad communication from Kirkland to the mines and also with the Northern Pacific Railroad. The object of the extension of the Lake Shore road to the mines is, of course, to render their product available (Bagley 1929: 840-842).

The dreams of all the growth and expansion that would come from these iron mines never materialized. The ore, although occurring in large quantities, was expensive to mine due to its low quality, and was not as easily accessible as was envisioned at first. Mining continued in the area, but never reached the production indicated by the optimistic reports of the 90s.

The Guye Iron Mines were of similar mineralization as the Denny Mines, and were operated by F.W. Guye around the same time period. Also located in the Snoqualmie District and operative around the turn of the century were Emma, Copper Chief, Chair Peak, Lost Lode (later called Quartz Creek), and the Last Chance claims (Hodges 1897). Most of the mines removed a certain amount of gold and silver, although these were not the primary values. In 1892, only two placer claims were recorded along the Snoqualmie River and Middle Fork (Livingston 1971:169-170).

In 1899, George W. Carmack recorded the Carmack Lode in what was at the time the Burns Mining District in King County. On October 3, 1906, the Carmack Gold and Copper Mining Company refiled on the Carmack and also filed on the Gold King, Gold Queen, Golden Eagle #1 and #2, and the Golden Fleece #1 and #2. The survey for patent was completed in 1907. The Geological Survey Report for 1901 reported that the company had expended about $15,000 in development work, about $3,500 of which went to hoisting machinery, buildings and "other surface improvements" (Moen 1972). Twenty tons of ore had been removed by 1901, for a total value of $1,200 in gold, silver and lead. This claim was near where the Snoqualmie Pass Wagon Road crossed the South Fork, so Carmack used a horse and wagon as the primary transportation. Eventually, six claims were patented in 1907, however, the venture proved unprofitable, and the mines were not worked after that time (Moen 1972). It is interesting to note that the discovery of gold in the Klondike in 1896 is credited to a George Carmack, however, I was unable to find documentation of whether or not this was the same George Carmack. At the time the developments were being made on the Carmack Lode, Mr. Carmack was living in North Bend.

Considerable development occurred at the Dutch Miller and Bahoster property located in 1896 at the extreme head of the Middle Fork in what was known at the time as the Burns Mining District (DuBois 1906). By 1901, these mines had produced several small shipments for the smelter, returned $37.65 per ton after smelt costs, principally in copper. Patents on these claims date from 1908. This mine was reached from Seattle via the Great Northern Railway line to the Foss Creek Station on the Skykomish River, a four hour ride. From the station to the mines took and additional eight hours; the first five miles to Crystal Cabin (a 20 by 30 foot log cabin located at 4,895 feet) by horse, and by foot trail for one mile "over a glacier and through Crystal Pass (which rises 900 feet in one half mile and has an elevation of 5,895 feet at the highest point) which brings you to Dutch Miller Cabin" (DuBois 1906). Mr. DuBois, a mining engineer for the Washington State Division of Mines and Geology, visited the mines in 1906 and reported a cabin and a blacksmith's shop "in the floor [of which] a shaft has been sunk on a 61 degree incline to the south" (1906). It appears that the camp, consisting of a cabin and numerous tents, was located around the mill site down along the Skykomish River.

The expense of removing ore from the Dutch Miller was great. Within a few years, the main access to the mine had switched from the Skykomish River to the Middle Fork of the Snoqualmie River (Treen 1916), and almost 30 years later, a mine to market road was proposed (Melrose 1941). By that time, the Sunset Highway had reached North Bend and a road branched off up the Middle Fork to

Goldmeyer Hot Springs. From that point, eleven miles of trail came within one mile of the mine; the last mile was an untrailed, rugged section, not easily negotiated (Carithers 1942). The proposed mine-to-market road was never completed.

Presently, the largest claim block in King County is the Middle Fork Property, centered on Hardscrabble Creek. It is made up of several prospects, some of which date back to the late 1800s. The primary mineral of these claims is copper, around which 15 patented claims and 238 unpatented claims have been made.

The Cedar River Mining District

Mineral discoveries began in the Cedar River Mining District in 1891 (Figure 4.24). Activity steadily increased over the next several years; Hodges (1897) describes 29 claims in the area in 1897. He states:

> The district had peculiar interest for Seattle people, since it is tributary to the Seattle and International Railroad, one of the chief feeders of the city's trade, is at the head of a stream flowing down to that city's suburbs and the mining properties are almost entirely owned in Seattle. The route to it from the city is by the Seattle and International Railroad to North Bend on the Snoqualmie, by a good wagon road to a point six miles below the confluence of Bear Creek with Cedar River and hence by trails, one running up each of those streams. The commissioners of King county propose this season to extend the road to the mouth of Bear Creek, the mining men agreeing to make further extensions to their properties (1897:46).

The largest group of mines, owned by the Robinson Mining Company, B. C. Ives and others, was near the confluence of Bear Creek and the Cedar River. Hodges showed two mining camps in this group on his map of the district (1897:47) (Figure 4.24). By 1897, the most development had been done on the San Jose group, farther up Bear Creek. It appeared that a new discovery there was just beginning to promise a profit (Hodges 1897). The original discoveries in the district were of iron and copper pyrites, but about the time of Hodges report, several ledges of free milling quartz had recently been found a half a mile from the San Jose group. Hodges speculated that these might surpass the San Jose group in value (1897).

In 1898, the City of Seattle purchased their first holdings in the Cedar River watershed and from that time forward mining operations slowed considerably. Since the turn of the century, land use in the area has been largely restricted to logging operations due to the hydrological development (McWilliams 1955).

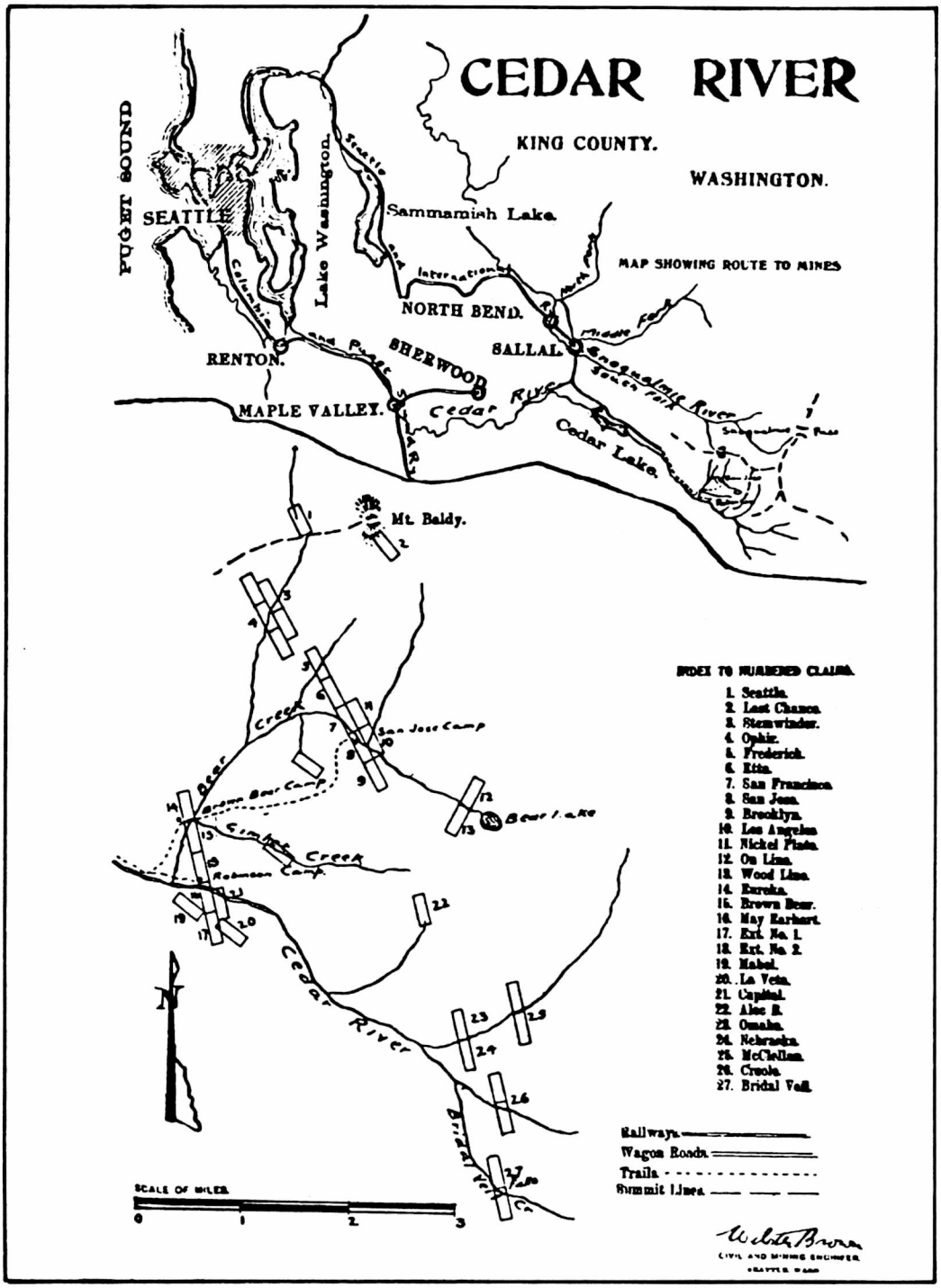


Figure 4.24 Map of the group of mining claims on the upper Cedar River, ca. 1896. Locations of the San Juan camp and the Brown Bear camp are shown (from Hodges 1897).

The Summit Mining District

The first discovery of record in the Summit Mining District was near the head of Morse Creek on the east side of the mountains, approximately 1880-82. The Summit District was organized in 1891. Spanning the Cascades, it included parts of what are now Pierce and Yakima counties (Figure 4.25). Trails approached the area from both directions. From the west side, the access was by way of Buckley, the outfitting point, 30 miles east of Tacoma on the Northern Pacific Railroad. "Thence a good horse trail leads up White River and Silver Creek to Gold Hill at the head of the latter stream, a distance of fifty-five miles" (Hodges 1897). In 1897, Hodges described 49 claims in the District (1897).

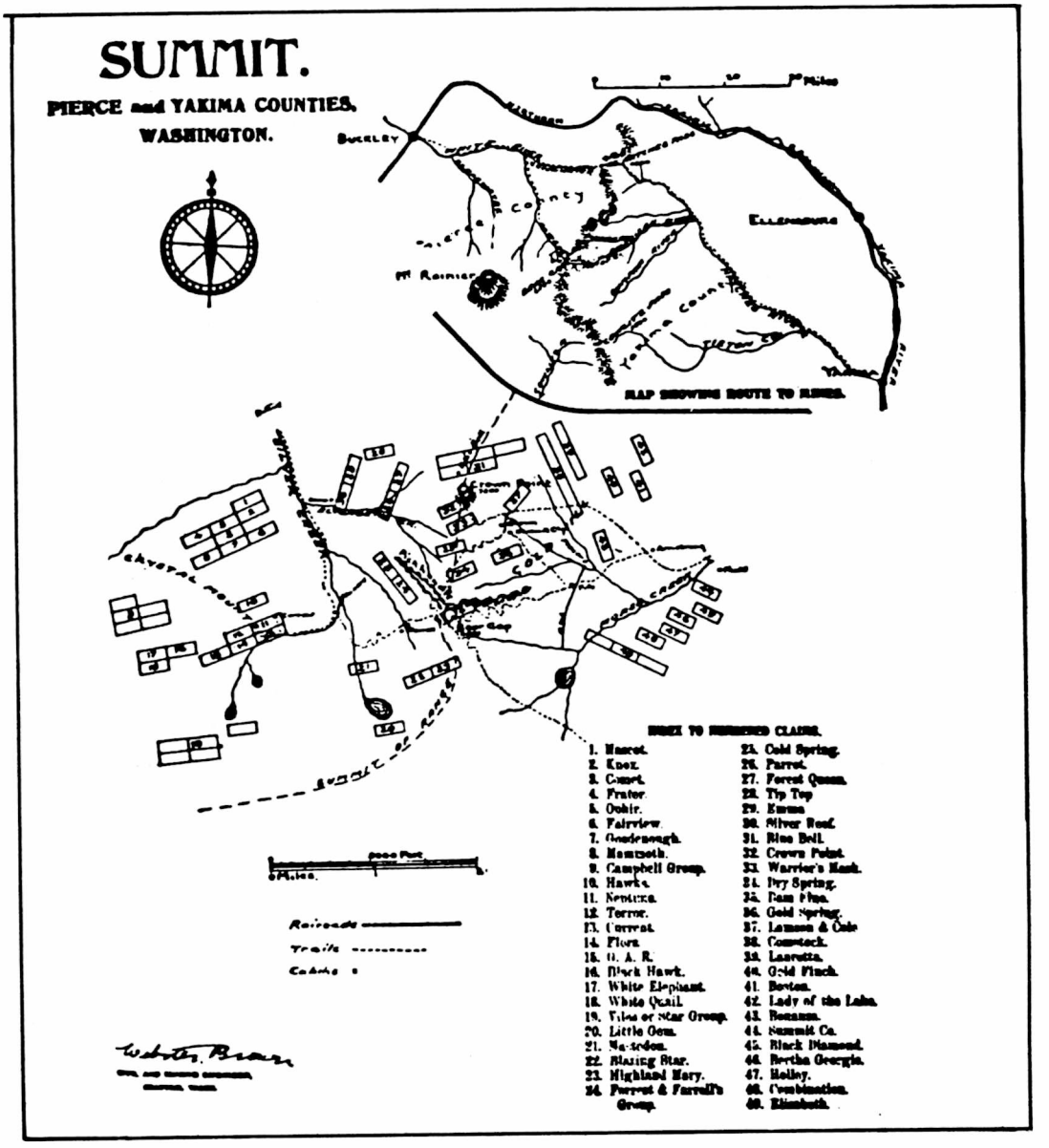


Figure 4.25 The Summit Mining District spanned the crest of the Cascades between Pierce and Yakima Counties, ca 1896 (from Hodges 1897).

The first quartz location was made on Gold Hill in 1888, and it soon became the center of mining activity in the district. Several claims were staked. Among the first was the Comstock claim east of the crest. Another promising group of claims were those of Thomas and Robert Fife of Yakima, located right on the summit. They worked six claims at Blue Bell and constructed an arrastre at the head of Union Creek (Yakima County) to reduce the ore (Hodges 1897).

On the west side, Pickhandle Point, near the head of Silver Creek, was discovered by James A. Farrell and James R. Forrest in 1891. Minor amounts of gold were found in the area of Silver Creek. It was apparently consistent enough to keep prospectors in the area for several years. A number of claims were concentrated around the head of Silver Creek, where the community of "Jim Town" developed. Jim Town was named for the original Jims (Farrell and Forrest) who first prospected up this creek, and for one other Jim, whose identity, like the town, has been forgotten (McCullough 1970:42).

Another community of similar origin developed just across the crest; in 1970, Nevan McCullough wrote that some ruins of the old cabins were still visible at the site of Fog City (1970:43).

> Fog City is located on a slight bench about 100-200 feet elevation below the Cascade Crest Trail in the first basin on the east side of the summit as one travels north about three fourths of a mile from Bear Gap (McCullough 1970:53).

Wilkeson Area Coal Fields

Coal was discovered in the Carbon River area in 1862, and development began in 1873. A branch railroad line was completed to Wilkeson in 1876 to haul the coal to shipping points. Mining activities in this area significantly increased when the suitability of this coal for manufacturing coke was realized. In 1885, the mine began to supply coke for foundry use in the Seattle and Portland areas (U.S. Bureau of Mines and H. Zinder 1963). The coke production reached a maximum about 1915, around which time the Pacific Coast Coal Company, Carbon Hill Coal Company and the Wilkeson Coal and Coke Company shipped almost 600,000 tons of coal to Puget Sound and San Francisco Bay markets (Clevinger 1955:97).

Isolation of the mines resulted in the development of small towns to provide housing, supplies and services for the workers and their families. By 1913, there was a cluster of eight mining towns and camps in the Carbon River Valley (Clevinger 1955). The communities of Wilkeson and Carbonado were isolated to the degree that most of the wages from the mines were spent locally. "Under these circumstances, Wilkeson and Carbonado became the most boisterous mountain towns in the Cascades" (Clevinger 1955:96). The towns lost much of this trade when the advent of automobiles and improved highways provided a way for the workers to get out of town for an evening or a weekend.

By 1920, the market began to decline, and these mines could not operate competitively because of their high transportation costs. The effect on local employment was extreme. Compared to 1910, when 1,562 men were employed in the Carbon River coal field, 1948 showed only 15 men working part time for six

small operations (Clevinger 1955). The mining communities that had previously bustled with activity were virtually abandoned. Wilkeson and Carbonado lost at least half of their populations. Instead of one shipment a day, the train left Wilkeson only once a week, and the regular railroad run between Wilkeson, Fairfax and Montezuma was discontinued altogether.

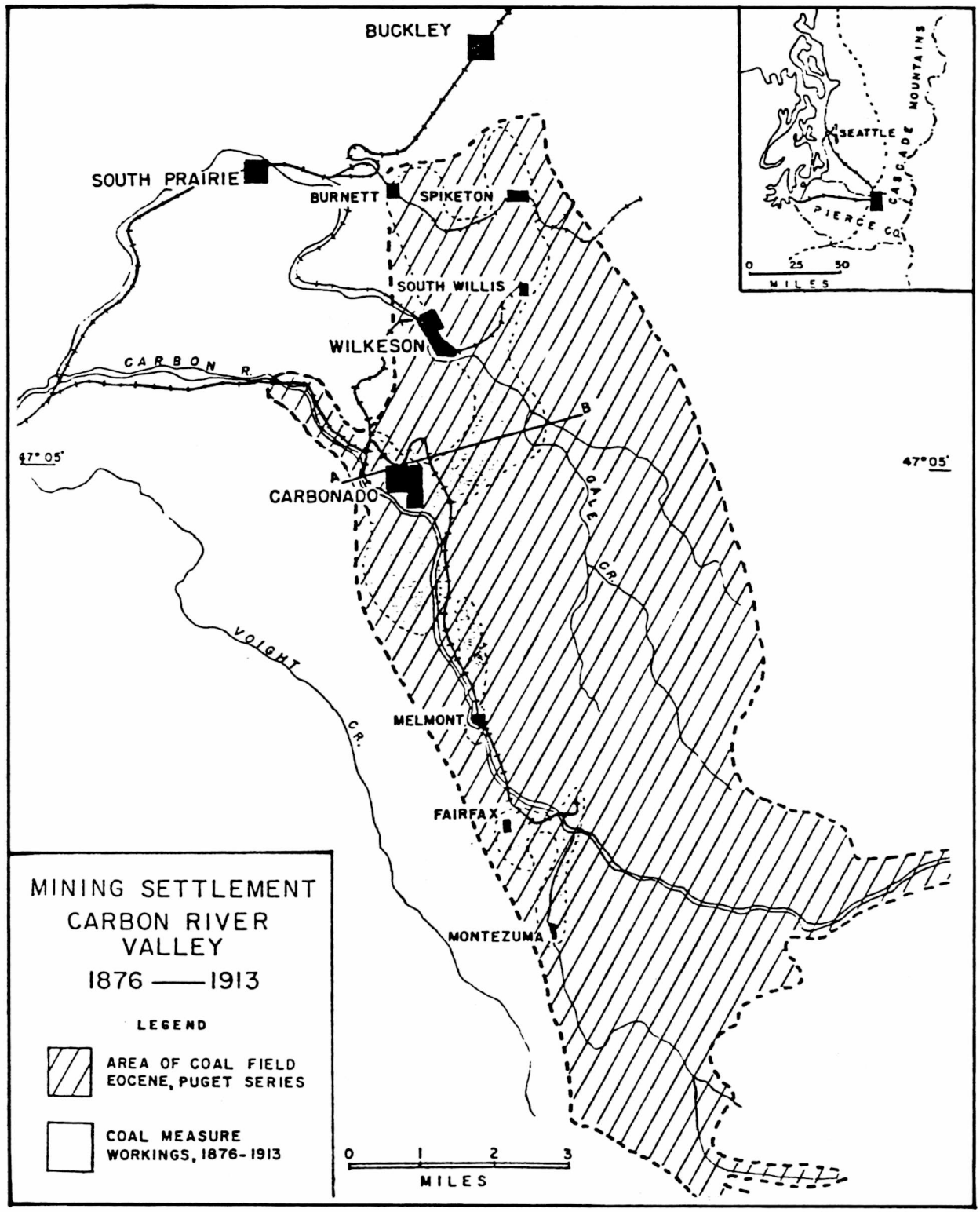


Figure 4.26 The mining settlements of the Carbon River Valley, 1876 - 1913 (from Daniels 1913).

Table 4.1 Glossary of mining terms used in the Pacific Northwest around 1897.

adit - A passageway or opening driven horizontally into the side of a hill or mountain for the purpose of exploring or opening a mineral deposit.

aerial tramway (tram) - A system for transporting ore or rock in buckets suspended from a cable.

alloy - A compound of two or more metals.

alteration - Any physical or chemical change in a rock or mineral after its formation.

amalgam - An alloy of mercury with another metal.

amalgamation - A process by which gold and silver are extracted from an ore by dissolving them in mercury. The pure metals can then be separated from the mercury by applying heat or pressure.

apex - The top edge of a vein on the surface or its point nearest the surface.

arrastre - A primitive milling apparatus pioneered by the Spanish in which heavy, flat boulders are dragged over chunks of ore on a stone pavement. The pulverized ore can then be treated to recover the precious metals.

assay - The analysis of an ore sample by chemical or other means to determine the amount of valuable metals contained.

assessment work - The amount of work which must be performed each year, by law, to retain legal control of mining lands.

bed - A horizontal seam or deposit of mineral.

bedrock - Solid rock forming the earth's crust, usually covered with overburden.

bit - The cutting end of a boring instrument. In rock drilling, it is frequently composed of the ultra-hard substance, diamond.

claim - A portion of land held under federal or provincial law for mining by an individual who has staked and recorded it.

compressor - A machine for compressing air to a pressure sufficient to operate mine machinery.

concentrate - The resulting product, containing valuable metal, from which most waste material in the ore has been eliminated. This concentrate must then be treated in some other way (e.g. cyanidation) to recover the pure metal.

concentrator - A type of milling plant that produces a concentrate of the valuable minerals or metals.

crosscut - A horizontal opening driven across the course of a vein or structure, or across the direction of the main workings, for ventilation and communication purposes; a connection from a shaft to an ore structure.

crusher - A machine for crushing rock, such as ball mill, rolls, stamp mill or tube mill.

cyanidation - A method of estracting gold and silver by dissolving it in a weak soluation of sodium cyanide or potassium cyanide.

depletion - The act of emptying, reducing, or exhausting an ore reserve. In mine accounting, the depreciation and federal taxes taken out of the net profit.

development - The underground work carried out for the purpose of reaching or opening up a mineral deposit, e.g. drifts, shafts, raises or crosscuts.

dip - The angle at which an ore body, vein or structure is sloped from the horizontal.

drift - An underground, horizontal passage that follows the ore body or vein; the opposite of a crosscut.

float - Loose rock or isolated masses of ore detached from the original formation.

flotation - A process of separating minerals in an ore by floating them off in a chemical solution.

flowsheet - The sequence of operations by which ore is treated in a milling process.

flume - An inclined channel, usually made of wood and often supported by a trestle, for transporting water to be utilized for generating electricity.

footwall - The rock or wall of rock on the underside of a vein or ore structure (as opposed to the hangingwall on the upperside).

free milling - Ores from which the gold can be recovered by concentrating methods without resorting to chemical treatment.

galena - Lead ore, sulphur and lead.

gravity tramway (tram) - A railway used for transporting men, materials or ore. Cars can be drawn by horse, steam, locomotive or hoist (also known as an inclined tramway or surface tramway).

grizzly - A grating placed over the top of an ore chute to stop the larger pieces of ore.

gross value - The speculated value of ore in the ground, determined by applying the assay of gold and the current market price.

grubstake - Supplies or funds advanced to a prospector in return for a share of the profits.

hangingwall - The rock or rock wall on the upper side of a vein or ore body (as opposed to the footwall on the underside).

high grade - Rich ore; the selective mining of the best ore in a deposit.

level - The horizontal passages on a working elevation in a mine. Levels are established at regular intervals, generally 100 to 200 feet apart.

lode - A mineral deposit in solid rock; a vein of ore.

magnetite - Magnetic iron ore.

mill - A plant in which ore is crushed and treated for the recovery of valuable metals or a concentration of minerals; a machine for fine grinding ores as a preparation for treatment.

milling ore - Ore that is of sufficient value to be treated by the milling process.

mineral - A naturally occurring crystalline substance with definite chemical properties and composition, e.g. gold, silver, copper.

open cut - A surface working where ore is being mined.

open pit mining - Lode mining that is carried out from the surface and not from underground tunneling.

ore - A mineral material that can be mined at a profit.

ore chute - A vertical shaft through which ore is dropped and delivered to an ore car.

placer - A deposit of sand or gravel containing eroded particles of valuable minerals.

placer mining - Mining a placer area by washing to extract its mineral content.

prospect - A mining property whose value has not been proved by exploration.

pulp - Ground ore in a solution.

quartz - A common rock-forming mineral with which gold is frequently associated.

recovery - The percentage of valuable metal in an ore that is recovered by metallurgical treatment.

rolls - A type of ore crusher commonly used in copper mills.

salting - Introducing particles of metal into a deposit with the inten to defraud by bettering the assay results.

sample - A small portion of rock or mineral deposit taken usually for the purpose of assaying.

shaft - A vertical or slanted passage used to open and service a mine. It is usually equipped with a hoist for raising and lowering a cage for transporting men and materials to the lower levels of the mine.

smelt - Thermal operation in which metal is separated from impurities with which it may be combined.

stamp mill - A crushing device in which heavy iron stamps fall repeatedly, like hammers, upon pieces of ore.

stope - A working in a mine from which ore is being or has been extracted.

strike - The course of a vein or rock formation measured on a level surface.

surface mining - Placer mining.

tailings - Ore rejected from a mill after the recoverable valuable minerals have been extracted.

tunnel - A horizontal underground passage that is open to the surface at both ends.

vein - A crack, fissure, or fault in a rock filled by minerals.

(Adapted from Stone and Stone 1980)

Timber! The Logging Industry

Introduction

The first incentive for the timber industry in Washington came from the booming towns of California after the 1849 gold strike. Investors in Washington lost no time in beginning to cut the abundance of timber that grew close to the protected coastline ports. Sawmills began to spring up everywhere along the coast, and in 1853, Henry Yesler of Seattle erected the first steam sawmill within the present state (Jordan 1966). The lumber industry in Puget Sound thrived. Export expanded far beyond the U.S. coastline to the Orient within a few years of beginning.

The industry began to advance eastward into the vast virgin timber of the western Cascades as the lowland timber disappeared. There were no roads into the backcountry, and the first loggers arrived by foot. Rivers were the only route by which the cut logs could be transported to the mills and to port. At first timber was cut selectively along the waterways, and skillfully felled to be wedged or jacked into the water. When the water was low, the logs were placed in such position that high water would pick them up and float them downstream (Eckman 1937:22). Logging camps were small, consisting of four or five men who moved frequently as more and more land was cut over. Temporary shelters were little more than lean-tos and shake huts (Eckman 1937).



Figure 4.27 Steam power was used to yard and load logs after about 1890. This was used in combination with railroad transportation after the turn of the century.

More innovative ways of transporting the logs had to be implemented as the industry moved farther inland. In response to the problem, skid road logging became popular around 1870 (Eckman 1937:24).

> The skid road...consisted of small peeled fir logs, flattened on top and bedded firmly in the ground, about eight feet apart, just as railroad ties are now laid to support the rails. To reduce friction, a key...made of maple was inserted in each log. After this key had been greased the logs could be pulled to the river or the storage piles with comparative ease... Usually it required four yoke (eight oxen) shod with iron shoes, to pull one log (Eckman 1937:24-25).

Larger crews were necessary for a skid road operation. A typical monthly payroll for a logging operation of this type in 1887 included "...men who swab and lubricate the skids with dogfish oil...$30... Swampers, barkers and hook tenders, $40; skidders, who must keep the road in repair, $50; log cutters, $60; teamster, who must shoe and take care of three to eight yoke of oxen, $60 to $125; cooks $40 to $100; head sawyer, $6 per day; other sawmill hands, $30" (Whitfield 1926:698). Logs were worth $7.50 per thousand. With the new innovations, mills of the Puget Sound region were kept operating full time to keep up with the supply and demand.

The oxen and greased ways gave way to steam power in the early 1890s, as the transportation of timber both in the woods and to the mills, steadily improved (Eckman 1937:77). Between 1890 and 1915, a number of railroads were constructed up the major drainages and into the remote highlands for the primary purpose of transporting logs (Table 4.2). Branch railroads that tied into mainline tracks were preferred to river driving, because of the many costly losses suffered to winter floods and frequent log jams in the rivers:

> At first, some companies installed standard gauge railroads made of maple rails covered with scrap iron, which...were soon replaced by steel rails. Oxen pulled the logs to the loading spurs, but they were superseded by steam donkey engines. Thus, another change came to the logging industry. Powerful low-geared locomotives pulled long strings of logging cars up steep inclines where the first locomotives and oxen could not go. Instead of skid roads and river driving, men now talked about 'skylines', 'haulbacks', 'donkey engines' and 'chokers' -- terms associated with the new method of harvesting timber. Heavy steel cables were extended from the sets near the tracks to various points high on the mountain sides, and by a system of blocks, operated by powerful donkey engines, logs could be pulled in from the higher elevations to the logging cars (Eckman 1937:27).

Railroads were costly, and with this new method of logging came a change in practices. The loggers of the northwest could no longer afford to be "placer loggers," choosing only to cut the highest quality trees (Eckman 1937). The heavy expenses of railroad logging resulted in the cutting of large areas, leaving seed trees and seed blocks to reforest the cut over area after burning the accumulation of slash. It was not until logging trucks and bulldozers were introduced to the industry that it became possible to modify cutting practices and confine cutting in patches of units from 20 acres to 100 acres (Bruckart 1980). Cutting units are generally restricted to 60 acres today (National Forest Management Act 1976:36 CFR 219).

Table 4.2 Logging railroads in the vicinity and within the Mt. Baker-Snoqualmie National Forest (approximately 1890-1945).

RAILROAD	LOCATION	DATES	OTHER
WHATCOM County			
Glacier R.R.	Glacier	1922 - 23	4 miles became
Allen & Nolte Lg. Co.	Glacier	1923 - 26	
Big Four Lg. Co.	Whatcom County	1907 - 1909	2 miles
Central Lg. Co.	Whatcom County	1909 - 1916	3 miles
Hogg-Houghton Lg. Co.	Glacier	1923 - 1931	3 miles
A.W. Knight & Co.	Maple Falls	1917 - 1921	4 miles
Oregon & Wa. Lg. Co.	Glacier	1910	-
Glacier L. Co.	Glacier	1922 - 1925	1 mile (became Warnick L. Co.)
Wilsons & McRae Lg. Co.	Maple Falls	1924 - 1926	9 miles
SKAGIT County			
Baker R. & Shuksan R.R.	Concrete	1908 - 1918	3 miles
Leavitt & Leathers Inc.	Marblemount	1938 - 1940	9 miles
Cowden L. Co.	Sauk	1920 - 1923	2 miles
Star Lg. Co.	Hartford	1907 - 1923	5 miles. Subsidiary of Lochsloy Timber Co. in Everett
McNeill-O'Hearne Co.	Concrete	1921 - 1926	4 miles
Dempsey L. Co.	Hamilton	1907 - 1929	30 miles (6 miles in 1910)
J.M. Parker Lg. Co.	Hartford	1908 - 9	1 mile
Erickson & Furnham	Rockport	1927 -	?
Scott Bros. Lg. Co.	Concrete	1923	1 mile
Lyman Pass R.R.	Hamilton	1916 -	? (related to Hamilton L. Co.)
Hamilton Lg. Co.	Hamilton	1907 - 1923	?
English-Dempsey	Hamilton	1906 - 1930	26 miles (Puget Sound & Baker River R.R. 1906-present) became
Lyman Timber Co.	Hamilton	1930 - 1937	26 miles became
Soundview Pulp Co.	Hamilton	1937 - 1951	26 miles (Hamilton & Baker River R.R. dates uncertain) became
Scott Paper Co.	Hamilton	1951 -	26 miles
Rucker M. Co.	Hartford	1905 - 1909	-
S.E. Wright Lg. Co.	Hartford	1907 - 1909	9 miles } these 3
Hartford Mfg. Co.	Hartford	1907 - 1909	1 mile } became
Cavanaugh Timber Co.	Hartford	1909 - 1918	10 miles } these 2 then
Tulalip Co.	Hartford	1917 - 1919	5 miles } became
Rucker Bros. Co.	Hartford	1905 - 1929	11 miles became
Puget Sound Pulp & Timber Co.	Bellingham	1929 - 1952	40 miles
Lyman Timber Co.	Hamilton	1905 - 1937	15 miles (6 miles in 1910) became
Soundview Pulp Co.	Hamilton	1937 - 1951	6 miles

RAILROAD	LOCATION	DATES	OTHER
SKAGIT County (Con't)			
Wallace L. & Mfg. Co.	Sultan	1907 - 1936	12 miles (in 1910, 3 miles in Startup)
Washington L. & Spar Co.	Darrington	1921 - 1927	4 miles
Washington T. & L. Co.	Darrington	1906 - 1913	5 miles
Washington Veneer Co.	Darrington	1941 - 1952	50 miles
SNOHOMISH County			
Canyon L. Co.	Robe	1905 - 1912	3 miles
Courtney L. Co.	Robe	1940	3 miles
Eagle Falls Lg. Co.	Index	1925 - 6	5 miles
Edlund Lg. Co.	Gold Bar	1938 - 1940	23 miles
Gold Bar L. Co.	Gold Bar	1905 - 1917 In 1910	10 miles 4 miles
Snohomish, Skykomish & Spokane Ry.	Hartford	1891 - 1892	6 miles became
Everett & MC R.R.	Hartford	1892 - 1900	57 miles became
Monte Cristo Ry. Co.	Hartford	1900 - 1915	42 miles became
Hartford Eastern Ry.	Hartford	1915 - 1933	42 miles
Hilo L. Co.	Robe	1926 - 1929	2 miles
Hynes Lg. Co.	Robe	1929 - 1931	2 miles
Puget Sound, Skykomish & Eastern R.R.	Index	1910 - 1913 (?)	2 miles became
Index-Galena L. Co.	Index	1910 - 1928	14 miles
Johnson-Dean L. Co.	Robe	1908 - 1918	12 miles
Andron Lg. Co.	Darrington	1928 -	5 miles
Big Fir Lg. Co.	Darrington	1917 - 1927	2 miles
Danaher L. Co.	Darrington	1910 - 1923	18 miles
Davidson Lg. Co.	Darrington	1942	1 mile
Jamison L. & Shingle Co.	Darrington	1923 -	14 miles
Klement & Kennedy	Darrington	1921 - 1936	6 miles
Fortson Lg. Co.	Darrington	1913 - 1921	2 miles
Lamson Lg. Co.	Darrington	1923 - 1933	4 miles
Miller Lg. Co.	Sultan	1923 - 1940	25 miles
Robe L. Co.	Robe	1931 - 1938	3 miles
Sauk River L. Co.	Darrington	1924 - 1952	35 miles
Sound Timber Co.	Darrington	1916 - 1942	38 miles
Sultan Ry. & Timber Co.	Sultan	1902 - 1941	20 miles (12 miles in 1910)
Trout Ck. Lg. Co.	Index	1923 - 1926	7 miles
Turlo L. Co.	Robe	1930 - 1938	3 miles
United States L. Co.	Darrington	1907 - 1913	4 miles (3 miles in 1910)
Wallace Falls Timber Co.	Gold Bar	1921 - 1941	20 miles

RAILROAD	LOCATION	DATES	OTHER
KING County			
Page L. Co.	Eagle Gorge	1901 - 1922	9 miles became (6 miles in 1910)
Buffelen L. Mfg. Co.	Eagle Gorge	(1934)	-
Cedar Lk. Lg. Co.	Cedar Falls	1913 - 1919	6 miles
Skykomish L. Co.	Skykomish	1906 - 1917	7 miles became
Columbia Valley L. Co.	Skykomish	1917 - 1919	4 miles
Union Mill & T. Co.	Baring	1932 - 3	-
Wheeler-Osgood Co.	North Bend	1923	9 miles (in Wickersham in earlier years)
Buckley Lg. Co.	Eagle Gorge	1919 - 1947	22 miles became
Eagle Gorge Lg. Co.	Eagle Gorge	1947 - 1955	8 miles
Forbes Timber Co.	Nagrom	1918 - 1929	3 miles
Green River L. Co.	Baldi	1918 - 1928	6 miles
High Point M. Co.	Fall City	1918 - 1928	6 miles
Howe-McGibbon T. Co.	Nagrom	1926 - 1933	4 miles
Lucas L. Co.	Eagle Gorge	1910 -	3 miles
A. McCann	North Bend	1910	2 miles
White River L. Co.	Enumclaw	1902 - 1949	100 miles (7 miles in 1910?) became
Weyerhaeuser	Enumclaw	1949 - 1953	100 miles
Morgan Bros. L. Co.	Nagrom	1904 - 1924	6 miles
North Bend & Eastern R.R.	North Bend	1910 - 1915	9 miles became
North Bend L. Co.	North Bend	1906 - 1923	9 miles became
North Bend T. Co.	North Bend	1923 - 1944	32 miles
Kerry Mill Co.	Cedar Falls	1897 - 1908	8 miles became
Northwest L. Co.	Cedar Falls	1908 - 1929	15 miles
Seattle Southeastern Ry.	Cedar Falls	1906 - 1913	14 miles became
Pacific States L. Co.	Cedar Falls	1905 - 1939	46 miles (Selleck)
W.C. Wicks	North Bend	1902 -	-
F.W. Wonn	Nagrom	1926 - 7	1 mile
Nippon L. Co.	Skykomish	1918 - 1920	3 miles became
Alpine L. Co.	Skykomish	1920 - 1928	4 miles (became Security T. Co. in Everett)
Snoqualmie Falls L. Co.	Snoqualmie	1917 - 1942	100 miles (now Weyerhaeuser
Snoqualmie Lg. Co.	-	1913	4 miles
Snoqualmie Mill Co.	North Bend	1890 -	-
South Fork L. Co.	North Bend (Tanner)	1908 - 1913	2 miles
Weeks & Co.	North Bend	1907 - 1913?	8 miles
Weyerhaeuser Lg. Co.	Hobart	(1910)	3-1/2 miles
Bloedel-Donovan L. Mills	Skykomish	(1934)	
Wood & Iverson Inc.	Hobart	(1934)	-

RAILROAD	LOCATION	DATES	OTHER
PIERCE County			
Defiance L. Co.	Buckley	1906 - 1919	8 miles
Doud Bros. L. Co.	Buckley	1903 - 1908	3 miles
McDougall & Jackson	Buckley	1901 - 1909	- became
D. McDougall	Buckley	1913	1 mile
White & Columbia Rivers R.R. Co.	Buckley	1893 - 1896	- (from prior Co. in Orting) became
Natchess Pass R.R. Co.	Buckley	1896 - 1909	11 miles
Valley Mill Co.	Buckley	1909 - 1913	3 miles
Buckley Lg. Co.	Buckley	(1934)	-

The advent of the trans-Cascade railroads had an important affect on the development of the timber industry. Communities and towns were established along the routes and at the termini of the railroads that serviced the mountain country. Darrington, which started as a community of miners and loggers, is typical of these towns (Clevinger 1955:172). Employment at both the sawmills and the logging camps was intermittent with frequent periods of unemployment, however, by 1925 logging and milling employed over 6,000 workers in the forest industries along the railways extending into the mountains (Clevinger 1955:177).

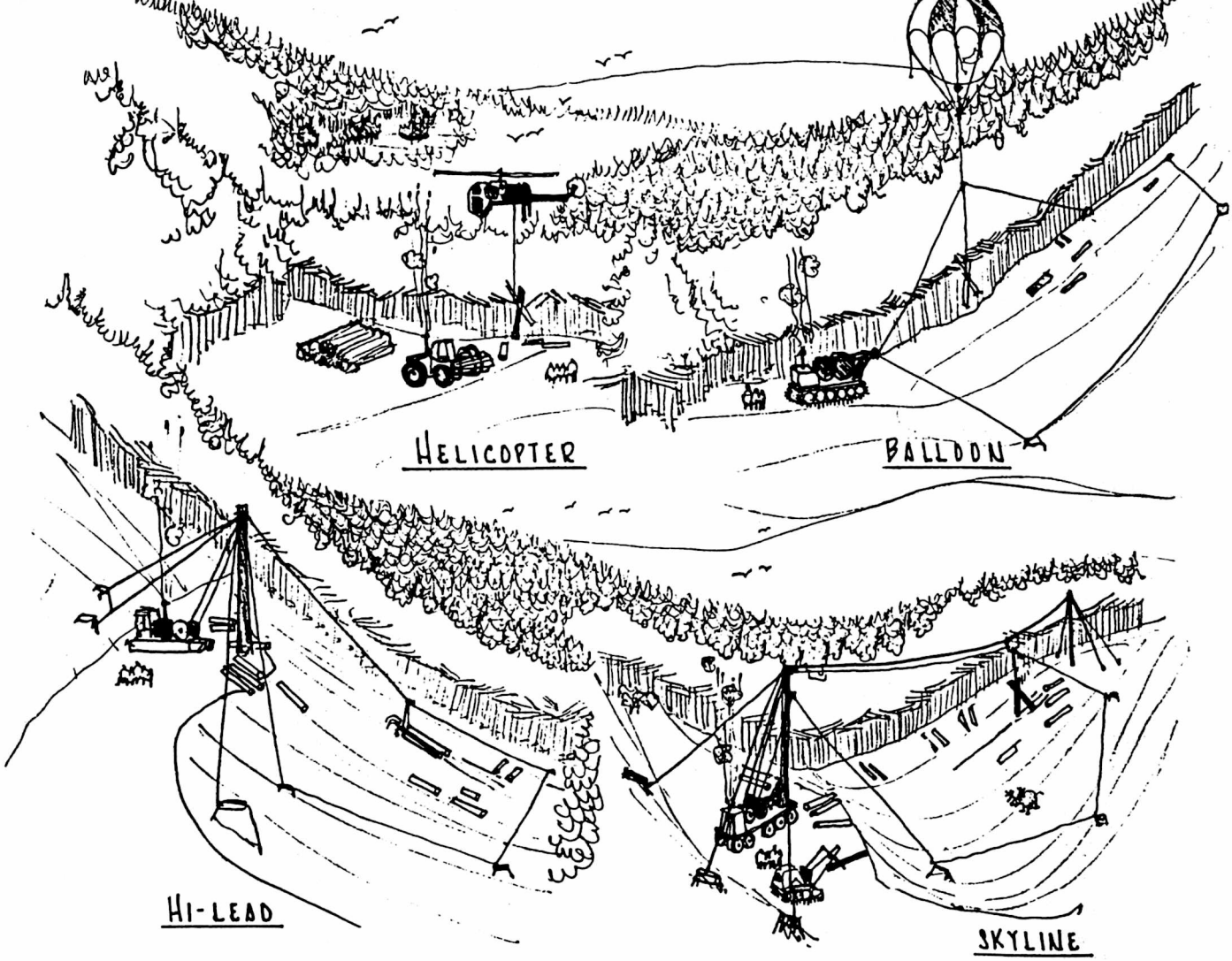
The Seattle and International completed a mainline between Seattle and the Canadian border in 1900 (purchased by the Northern Pacific in 1901), with several spurs branching eastward into the mountains. Three major companies of the Snoqualmie Valley, the Snoqualmie Falls Lumber Company, North Bend Timber Company, and Preston Mill Company were established on a spur. In addition, a branch line was constructed up the Skagit River to service such towns as Lyman, Hamilton, Concrete and Rockport (Clevinger 1955).

Within a few years of the completion of the Great Northern Railroad through Stevens Pass, logging and milling operations were established along the route. They included the Index-Galena Lumber Company at Index, Bloedel-Donovan at Skykomish, Reiter Lumber Company at Baring and the Wallace Falls Lumber Company at Gold Bar. A branch line of the Northern Pacific extended up the Stillaguamish River from Arlington, and hauled timber from several operations in the upper Stillaguamish and Sauk River country (Clevinger 1955). The Northern Pacific mainline passed directly through the rich timber forests of the Green River Valley where towns such as Lester, Nagrom and Baldi were established.

World War I resulted in an increase in the logging activity in the spring of 1917. The demand for wood, particularly for aircraft lumber, exceeded the supply capabilities, making it necessary to put soldiers in the logging camps. They were called the Spruce Production Division, and several were assigned to the area around Darrington. "While lacking experience, they were young and eager to learn and soon became competent loggers" (Bruckart 1980:21). Snoqualmie Falls and North Bend Lumber Companies operating in the Snoqualmie Valley were also each assigned a division of these logger-soldiers (Marts 1944). This boost to the industry saw the passing of railroads to the use of logging trucks, which had become the common method of transport by the 1930s (Jordan 1966).

The Depression of the 1930s had an obvious impact on the logging industry, and several small operations were closed during those years. World War II was a blessing of sorts for those companies that survived, as the demand again rose to new proportions. Everything from equipment, to transportation, to milling to marketing was improved.

During the war years and following, there was an increase in the number of small logging enterprises in the Cascades. These independent loggers, called "gyppo loggers," could afford to purchase small tracts of timber in the high country that the large operators could not profitably extract. They were able to successfully bid on damaged timber on state or National Forest lands, and to log old cut-over areas to remove marketable snags, windfall, etc. (Clevinger 1955). The era of big, semi-permanent company camps gave way to the more independent, contract loggers that operate throughout the National Forests today.



LOGGING METHODS in the PACIFIC NORTHWEST

LOGGING SYSTEM	SLOPES	SOIL CONSIDERATIONS OR CAPABILITIES	TYPE OF CUTTING	NORMAL YARDING DISTANCES	ADVANTAGES	DISADVANTAGES
Tractor and Wheeled Skidders	Gentle. Logs downhill or on the level most efficiently.	Soil must be capable of accepting compaction stirring & physical disruption. Seldom used on Mt. Baker because of these limitations.	Partial cutting, thinnings, intermediate or clearcutting.	Less than 1,200 feet downhill, 500 feet uphill.	Cheap: small crew, fast production, less equipment. Can move in and out for less volume. Investment approximately $80,000.	Water channeling and concentration in downhill logging. More roads needed than cable systems.
Hi-lead Cable System	Gentle to Steep. Uphill logging most efficient. Concave or bowl-shaped slopes best.	Must be capable of accepting some physical damage as logs drag full length. Logs tend to "plow".	Clearcutting. Unsuited to partial cutting.	Less than 1,200 feet	Cheaper than skyline, etc. Simpler than skylines to operate. Usually faster than skylines. Investment approximately $120,000.	Denudes entire area - small (residuals) mostly uprooted or damaged. More truck roads needed than skyline systems, some soil disturbance unavoidable.
Skyline Cable Systems	Gentle to Steep. Bowl-shaped to concave slopes most efficient.	Soil considerations less critical as logs fly, or only back end drags. No "plowing"; logs must be partially suspended.	Clearcutting or partial cutting. Especially adaptable to thinning with small, light equipment.	Usually less than 4,000 feet. Most often, less than 2,500 feet.	Long yarding distances possible. Soil disturbance minimum for cable systems. Safer than Hi-lead. Fewer truck roads than Hi-lead or tractor.	Usually more expensive to own and operate. Requires larger volumes to amortize fixed costs. Requires more engineering and expertise to successfully operate. Investment approximately $250,000.
Balloon Systems	Gentle to Steep. Convex (humped) slopes best. Downhill logging most efficient.	Minimum damage to soils in logging area. Large landing may disturb up to 2 acres of soil.	Clearcutting only at present time.	Less than 3,000 feet at present time.	Logs best on convex slopes which are unsuited to other cable systems. Fewer roads than Hi-lead or tractor.	Snow, wind and ice may limit payloads or damage balloon. High initial investment, nearly $500,000.
Helicopter Systems	Virtually independent of terrain, but sidehill or uphill best.	Minimum damage to soils in logging area. Large landing may disturb up to 2 acres of soil.	Clearcutting, overstory removal, partial cutting in trees less than 150 feet tall.	Less than 5,000 feet.	Few roads needed, can log otherwise inaccessible areas - very fast. Safest system known for ground crews.	Fog, wind may limit flying. Limited access for future activities. Extreme investment, up to 2-1/2 million dollars. Expensive logging, about 6 times more costly than Hi-lead.

Figure 4.28 Modern logging methods in the Pacific Northwest.

Logging the Drainages of the Cascade Mountains

As the timber industry was marching steadily inland, the Northern Pacific Railroad was aggressively trying to turn some of its land grants into cash. The timber lands did not attract much attention until 1900, when Weyerhaeuser Timber Company concluded the largest single land transfer in American history (Raney and Raney 1973). They purchased 900,000 acres at $6 an acre:

> ...at the time many thought the investment exceedingly speculative. When the directors held their first meeting in the rambling, vine covered, comfortable old Tacoma Hotel overlooking Commencement Bay, some of the eleven men had apprehensive thoughts. They knew that lumbering in the Puget Sound regions was still in a primitive stage... White fir and hemlock, abundant in the Sound area, were then commercially worthless, and even Douglas-fir was still used in the east as a structural timber alone. The Panama Canal was only a dream, and ocean freights via Cape Horn seemed cruelly high. The fire hazard in the forests was great--every autumn brought its fires; and when Weyerhaeuser quoted a sage lumberman as saying, "If half the timber burns, the other half will be twice as valuable," he seemed whistling to keep up his courage. Over the years, coastal lumber mills had seldom paid well. Three million had now been paid on the nail, in hard cash--and when would some of it begin to come back? (Hidy et al. 1963:212).

At the time of the purchase, Weyerhaeuser did not know what timber the tracts held. Some had been cruised years earlier by the railroad, but Weyerhaeuser did not have any cruisers available. Their first look was depressing: the land had much less merchantable timber than they expected to see. In 1910, the assessment of this land included an average of approximately 50,000 board feet per acre (Meany 1936; Raney and Raney 1973).

Year by year, the cutting advanced closer and closer to the National Forest boundaries. Around the 1920s, most of the sales of National Forest timber were made to operators who were cutting on private land bordering the Forest. One of the biggest was the Sauk River Lumber Company, to whom some 235 million board feet was sold on 5,610 acres of National Forest in 1922 (Cameron 1977:16). Big companies like Sauk River Lumber continued to expand for the next quarter of a century; others were small and operated in the area only a short time. The industry, subject to weather and financial setbacks, developed at a slightly different pace and with varying degrees of sophistication within the major river valleys of the National Forest.

Upper Nooksack Drainage

Logging began in the upper part of the Nooksack drainage around the first decade of the twentieth century. The industry did not make a significant impact on the steeply incised valleys above Glacier until about 1940, after the lower country had been fairly thoroughly cut over. A few companies were in operation earlier; the Balcom-Vanderhoof Company was one of the pioneers in the area on holdings just west of Glacier (DeBorde 1981; Schmierer 1983). In 1909, the Bellingham Bay and British Columbia Railroad was extended to the town of Glacier, and railroad logging soon peaked in the valley.

Around 1920, the Allen and McRae Logging Company of Glacier built four miles of track to connect with the mainline railroad (Adams 1962; DeBorde 1981; Schmierler 1983). In 1921, Allen and McRae became Allen and Nolte, which in 1926 became the Heaten-Olson Logging Company. All of these operated around the vicinity of Glacier, with activities revolving around the same railroad spur.

The effects of the advancing timber industry were felt up the Middle Fork of the Nooksack also, although to a somewhat lesser degree. The McCoy Logging Company logged along a railroad system that extended 13 miles up the Nooksack from Welcome. Logging took place in the vicinity of Wallace Creek, where a large camp existed between 1917 and 1922 (DeBorde 1981; Schmierer 1983). An abandoned locomotive and remains of the Wallace Creek camp were visible for a quarter of a century after the company moved out of the area, but most of the debris was cleaned up during a salvage operation in 1964 (Schmierer 1983).

The Skagit River Drainage

Before 1880, logging activity on the Skagit River above Mt. Vernon was limited due to several log jams that blocked the main transportation corridor. A few hearty souls had settled above Mt. Vernon, B.D. Minkler among them. Minkler is credited with building the first sawmill in Skagit County, in 1878, in the vicinity of Lyman (Interstate Publishing 1906:119). In 1878, as soon as the log jams were cleared enough to provide for the passage of steamboat traffic, logging progressed steadily eastward toward the Cascade region. However, most of the sawmills on the upper portion of the river were not constructed until after 1900.

In 1886, Mortimer Cook built a shingle mill on the river at Sedro Woolley (Interstate Publishing 1906:140). Before long, the shingle mill industry had gained a fairly fast hold on the local economy. An 1893 article in the Seattle Times indicates that by that time there were several shingle mills in operation on the Skagit, and they were being constructed so fast that few people could keep track of the number. Jordan states:

> If you lived on the Upper Skagit all you had to do was pile the bundles of shingles on a raft and pole down the river to Sterling, Avon or Mt. Vernon looking for customers. If a cash buyer couldn't be found you could trade them for supplies as they were sort of frontier legal tender, and then hike back up the river with your pack (1966).

The shingle mill and lumber industry continued to expand through the turn of the century. In 1898, 1200 men worked in the logging and shingle bolt camps, supplying 29 shingle mills and 14 lumber mills (Interstate Publishing 1906). There were mills at Sauk, Rockport, Concrete, Hamilton and Birdsview in the upper valley. The Butler Lumber Mill logged and milled near Sedro Woolley. Many of the local camps and mills purchased supplies at Sedro Woolley, and loggers and millhands alike flocked to this center for the annual Fourth of July celebrations and the Loggerodeo (Willis 1975).

Stillaguamish River and Sauk River Drainages

The first logging camp above the forks of the Stillaguamish River was established in 1886 (Whitfield 1926); however, logging did not reach the upper Stillaguamish drainage until around the turn of the century. In 1901, the railroad was extended to Darrington, and equipment for the first sawmills in

the area was brought in by train. A mill was established in Squire Creek and the Darrington Lumber Company (later the U.S. Lumber Company) built a mill at Darrington.

The Sound Timber Company and the Danneher Company moved into the upper Stillaguamish Valley near Whitehorse around 1916. A railroad spur was built north from Darrington across the Sauk River to Sauk Prairie, and both companies logged in this vicinity for several years.

The Danneher Company (later sold and renamed Andron) finished logging their holdings near Sauk Prairie sometime before 1930. It was one of the first large companies to leave the valley. Sound Timber sold to Washington Veneer in 1944; it was subsequently bought by Georgia Pacific. When the cutting was done, around 1969, Georgia Pacific left (Poehlman 1979:142-143).

Several small companies operated around the same time. The Hazel Mill Company was logging a sale on French Creek, a tributary of the North Fork of the Stillaguamish, around 1910 (Bruckart 1980). Other companies included the "Washington Spar and Lumber Co. (located on the way to Clear Creek at what is called Punkintown); McNeeley and Anderson (near Whitehorse, 1916); McCaughey and Leatherdale (logging 200 acres on Squire Creek with mill nearby, 1923); Klement and Kennedy (logging on Whitehorse west of Morse Creek with a mill at Fortson, 1925)" (Poehlman 1979:143).

The shingle bolts that were being cut along the Sauk went down river to the shingle mill at Hamilton on the Skagit River, but after 1907, Gile's mill at Darrington (later the Bloxam Mill) received most of the bolts. A boom was built across the river and a bolt flume directed the bolts to an artificial log pond. The shingle bolt drives were apparently quite a sight to see. Nels Bruseth left us with this remembrance of the operation:

> Indians with canoes went up the river as far as Bedal's and started moving the bolts down. With proper water conditions they might take a week to Darrington, but sometimes the water might drop quite suddenly and leave the bolts high and dry. Then two weeks might be needed... The first time I saw one of these drives was in 1916. It was a thrilling sight to see the canoes poled up the rocky rapids at Dubor Creek. Saw one drive of 1,600 cord come down. Most of the cedar for bolts was cut on private lands up the river, but some was cut on Forest lands and from log jams in the river (Bruseth 1943).

In 1922, the Sauk River Lumber Company bid on the purchase of a large volume of National Forest timber on the Sauk River between the Clear Creek Ranger Station and the Bedal homestead and post office, about 13 miles east of the station.

> In addition to the National Forest timber, there was about 3,000 acres of private timber, lying largely in the bottom...(consisting largely) of abandoned homesteads, whose owners had sold them to a timber holding company... In the spring of 1923 work was started, building a modern logging railroad from Darrington east up the Sauk River drainage. The railroad reached the Whitechuck and beyond, and logging was started. This was a real high ball outfit and it was not long before full train loads of logs were moving to Darrington, there to be picked up by the Northern Pacific and moved to Puget Sound log dump near Everett (Bruckart 1980).

The Sauk River Lumber Company operated the "largest and most modern portable logging camp" (Poehlman 1979:143) in the greater Puget Sound region. The entire camp was built on flat cars so it could be moved along the extensive system of rails as logging progressed. It consisted of 26 bunkhouses (each equipped to house eight men), kitchens with dining facilities, an office, light plant, filing room and blacksmith shop, and other necessary shops and storerooms (Poehlman 1979:143). Over the thirty years that the Sauk River Lumber Company operated in the area, they moved the camp a total of six times:

> The camp was first moved to a place near the old covered bridge at the mouth of the White Chuck River in 1923; to Mary Smith's on the Sauk in 1925 or '26; to Dan's Creek in 1929; to Bedal in 1936; back to White Chuck in 1943; and back to Darrington in 1952 or '53. Back at the starting point, many of the buildings were bought by local people and moved to permanent sites where, singly or connected together, they are still used for lodging (Poehlman 1979:144).

The Skykomish River Drainage

Logging began in the Skykomish valley around 1860, at which time the logging boom was just beginning near Monroe. Cutting progressed up the Skykomish and Sultan Rivers. As improved logging methods were introduced, mills appeared throughout the area, including those at Alpine, Skykomish, Grotto, Baring, Index, Gold Bar and Sultan (Eckman 1937).

The Skykomish Lumber Company was organized in 1898 by Peter Larson, John F. Stevens and George Farr, all of whom were associated with major railroad companies. Larson was also a partner in the successful Bloedel-Donovan Lumber Mills of Bellingham Bay. J. H. Bloedel and J. J. Donovan acquired the Skykomish Lumber company from the estate of Peter Larson early in the winter of 1917. The purchase included 133,690,000 feet of standing timber (Clark 1949b). The newly acquired subdivision of Bloedel-Donovan started logging up the Beckler River, and established a large camp just south of Fourth of July Creek. A railroad was constructed up the river with a branch leading off to the east along the Rapid River. Camp 9 was situated at the mouth of the Rapid River (Bloedel-Donovan 1944). Bloedel-Donovan sold their Skykomish mill around the end of World War II, and shortly after, the trend of large company logging gave way to independent enterprises in the valley.

The mill at Alpine (named Nippon until 1903) flourished for two decades at the crest of the Cascades adjacent to the Great Northern railroad. Carl and Hugh Clemens owned the timber and built a town around the logging, milling and shake production of the Nippon Lumber Company. During the maximum summer season, the population of Alpine reached 200 persons. As the cutting progressed, another small camp with additional housing was built below the first. There were no roads; the only transportation was via the train. It was a company town; the men and their families did not pay rent and liberal credit was extended at the company store, the only emporium in town (Warren 1984). The town survived from about 1910 to 1928, the year the mill closed down. Once abandoned, the structures were all burned down by the Forest Service and "being built entirely of wood, it soon turned to ashes" (Warren 1984).

A small mill was established in 1904 at the town of Index. From this, the Index-Galena Logging Company was formed in 1907. By 1922, the company operated

approximately 14 miles of logging railroad along both sides of the North Fork of the river (Burgstahler n.d.). It operated until 1928, when impacts of the Depression felt throughout the timber industry resulted in a closure of the mill.

A shingle industry was lucrative, for a time, in the upper Skykomish Valley as well. Several mills were constructed, but few lasted more than seven or ten years. Much of the cedar cut from near Skykomish went to the Bloedel-Donovan mill at Skykomish which, along with the Startup mill at Sultan, continued to cut into the 1930s. By that time, at least nine mills that had once operated between Monroe and Alpine, had disappeared (Eckman 1937:32).

The Snoqualmie River Drainage

Logging operations around Tokul Creek and Fall City date back to 1872. Watson Allen built a water-powered sawmill at the mouth of Tokul Creek in 1873, and Ansel Hulbert was using ox teams to haul timber about one half a mile below Fall City in the early 1880s. Prior to the coming of the railroads to the valley, logs were driven down the river to the mills and market. In 1883, a newspaper article reported that logs could be driven down the Snoqualmie, over the 287 foot drop at Snoqualmie Falls, and arrive at the mill "without a blemish" (Whitfield 1926:693). However, it was the advent of the railroads in the valley that really started the timber industry moving.

W. C. Weeks operated a shingle mill at North Bend around 1890. He began logging near Cedar Falls in 1902, with many of his men living at North Bend (Bagley 1929:787). In 1905, Weeks joined R. Webb Vinnedge and incorporated the North Bend Lumber Company (West Coast Lumberman 1944:71). They began this new venture with two sections of land purchased from Weyerhaeuser. A railroad system was tied into the Northern Pacific at North Bend, and when the Chicago, Milwaukee and St. Paul western extension was completed, the North Bend Lumber Company also built a spur from Edgewick to Cedar Falls to make the connection. The North Bend Company went into operation as a contractor building bridges and mainline roadbed, as well as supplying the whole railroad project with construction materials (West Coast Lumberman 1944:68). The company's logging camps were apparently atypical for the time:

> All the camps of this company were connected by phone. The accommodations are very different from the average lumber camp. The men are supplied with wire spring beds and mattress, and the old fashioned large bunk house has given way to the smaller one, accommodating only a few men. The company owns a gasoline track speeder which greatly facilitates travel from town to the camps (Citizens Publishing 1906:7).

The majority of North Bend Lumber's milling was done at the town of Edgewick, founded at the original location of their "Camp 4" at the mouth of Boxley Creek (Hill 1970:126). This site was destroyed on Christmas Eve 1918, when the City of Seattle's Cedar Lake Dam broke. The mills were not rebuilt, and from that time forward, Boxley Creek became known as Christmas Creek.

Logging peaked in the Snoqualmie Valley around 1905-1910. In 1908, the North Bend Lumber Company reached its maximum production, with 170 men in camps and mills, and eight miles of railroad with two locomotives and six donkey engines. They had expanded to two sawmills with planing mills. At the same

time, the South Fork Lumber Company was surfacing with some healthy competition. They had built three miles of railroad up the South Fork, and with a crew of 125 men, produced the same daily capacity as their competitors, at least 75,000 feet per day (Bagley 1929:787-788). During the peak, it seemed like nothing could stand in the way of progress. This was expressed by the "spare nothing" mentality of the larger operators:

> Three miles upriver from North Bend is the immense mill of L.B. Tanner [South Fork Lumber Co.]. No expense was spared in the building of this plant to make it thoroughly up to date in every particular. Here is where a timber 120 feet long and eight feet square can be sawed and timber 32 inches square and any length can be dressed and loaded onto cars with perfect ease. The capacity is 100,000 feet per day and 120 men are employed in mill and woods, the monthly payroll being over 5,000 dollars. Lath and shingle mills are now being built. They are now installing a railroad to connect with some of the company's timber, located farther up the river (Citizens Publishing 1906:8).

Camps and equipment were moved around and temporarily set up where there was timber to cut. In the winter of 1919, the District Ranger reported on two logging operations in his district:

> The North Bend Lumber Company operating a camp at Rockdale expects to finish the work on this area in about two weeks and will then proceed to move away their equipment... The Skagit Boom and Logging Company, which had been operating for the past two years near Bandera, a Station of the C.M. & S.P. Railway, finished logging a short time ago. The company has a small amount of timber on the hill above the railroad track, but it is doubtful whether they will come back for this timber. This company logged some timber along the Highway during the past summer (Snoqualmie National Forest 1920).

In the 1920s, a slack period for logging in the state found North Bend Lumber's equipment and donkey engines at work building a section of the Sunset Highway (West Coast Lumberman 1944). The corporate name of the company changed to North Bend Timber in 1923, and in 1928 they were joined by the Wheeler Osgood Corporation as a significant stockholder. At that time, logging operations were launched up the Middle Fork, extending as far as Goldmeyer Hot Springs. Keeping pace with improvements in logging equipment, the company converted their steam equipment to internal combustion and replaced the logging railroad with logging trucks (West Coast Lumberman 1944:110). In 1944, the North Bend Timber Company sold to the St. Regis Corporation.

Several other companies operated in the Snoqualmie drainage, including the Snoqualmie Falls Lumber Company, which controlled timber holdings up the North Fork. This company was the outgrowth of the consolidation of several smaller timber companies, one of which was the Weyerhaeuser Timber Company. It is now operated again under the Weyerhaeuser name.

The Green River Drainage

When the Northern Pacific Railroad was under construction in the Green River Valley in the 1880s, a huge volume of timber was removed from the adjacent slopes - so much, in fact, that at one point the crews literally had to stop work for lack of construction materials. The railroad required nearly a mile of solid log cribbing, three quarters of a mile of snowsheds, and 31 trestles of nearly 100 feet in length, before the ties and rails could be laid (Peter 1981). When completed, the railroad provided the necessary transportation for commercial logging to gain a foothold in the valley.

The logging companies working in the Green River Valley in the period around 1910 ran typical railroad operations, with from three and eight miles of track each. Several small camps lined the route of the Northern Pacific Railroad and constructed spurs to connect to the mainline. Between 1900 and 1920, camps included those at Eagle Gorge, Page Mill, Baldi, Humphrey, Maywood, Nagrom, Hot Springs, Lester and Weston, to name a few. Many of the companies operated from more than one camp; Stone and Weston, for example, operated at various times from Forcamp, Lemolo, Lester, Nagrom, Baldi, Stampede and Kennedy (Carter 1978:57).

E. G. Morgan ran one of the larger mills in the drainage. In the early 1900s, Morgan Lumber Company began work at its mill near the mouth of Smay Creek, and named it Nagrom, which was Morgan spelled backwards. They operated with as many as 200 men, and similar to other logging operations at the time, employed a number of Japanese laborers. In 1923, Nagrom housed 170 men, 40 of whom were Japanese. Mill plans found from this era indicate that camp housing was segregated (Sutton 1978:85).

Other companies, such as the Green River Lumber Company at Baldi and Buffelen's Page Mill, competed with Nagrom for production around 1900-1910. By the late 1920s, however, logging had slowed considerably. With the onset of the Depression, the population at Baldi decreased to 20 from over 100, and in 1931, 62 men were left at Buffelen's. A year later, Buffelen's operation was down to 14 men (Sutton 1978:86).

The White River Drainage

Beginning with a small sawmill at Ellenson, near Enumclaw, the White River Lumber Company, under the ownership of the Charles Hanson family (father and three sons) and Lou Olson, controlled much of the logging operations in the White River Valley from about 1896 on. In 1906, the company purchased a wood-burning Climax locomotive, marking the beginning of logging railroads in the lower valley. A stretch of track was laid up Boise Creek, however, it was not connected to the Enumclaw tracks. The 25-ton engine was moved up to Boise Creek 50 feet at a time; a 50 foot stretch of track was laid down and the engine moved forward under its own steam, then the ties behind were lifted and carried around to the front and relaid (Timberman 1946:37).

It was several years before logging progressed into the upper valley. The increased demand for lumber during the war years began to have a real effect on the timber sale activities in the Forest around 1938. The White River Lumber Mill, which had operated only three eight-hour shifts per week during the Depression, began to heighten its activities in anticipation of the strengthening economy. A railroad system was built up the White River as far

as Twin Creeks. Nevan McCullough's description of the first sale in the area provides insight into the logging activities at the time, as well as the brightened outlook for the future:

> In 1943, the first commercial sale in the White River Working Circle was made. Located on the valley floor of Huckleberry Creek, it covered two distinct types of timber. A heavy stand of 300-year-old Douglas fir extended about two miles up the creek. Beyond that point, Douglas fir about 800 years old and a stand of uneven-age hemlock and silver fir covered the site. The sale was for about 14 million feet, B.M., to be removed on a selection basis... Marking rules were set to take the highest quality logs... The road requirements were loosely written and, in effect, would permit almost the minimum that a logger could operate over... Sealed bids were called for. U.S. Plywood was the highest of three bidders at slightly over $13.00 per M., a figure about 75% above the appraised price. The bid was a flat price for the Douglas in both units... The Ranger District was enlarged to handle the job. Ross Files was trained as a scaler, and was broken in on some of the best quality logs that ever grew. He was stationed to re-load from trucks to railroad cars at White River Lumber Company's railhead near Twin Creeks. Jim Lourie came to cruise timber for future sales near the end of the war... (1970).

White River Company's mill underwent major improvements between 1925 and 1931. The company's merger with Weyerhaeuser in 1931 resulted in additional expansion and improvements. Everything was modernized "to make it the most complete of any lumber manufacturing plant" (Timberman 1946:37).

The Carbon River Drainage

In 1912, Manley Moore began logging operations on the Forest in the Carbon River drainage along Tolmie Creek. Logs were transported by railroad from the cutting area to the mill about two miles above Fairfax (Carter 1978:51). The railroad along the Carbon River, with branches leading up the smaller drainages, was used by several small companies and independent loggers in the area who sold their timber to the mill at Fairfax. Logging by incline railroad to remove timber from the steeper slopes became popular in the Carbon River area in the late teens and early 20s (Figure 4.29). Manley Moore constructed several inclines in the area. This method proved costly, and because of limited production, the inclines were nearly all phased out by the 1930s (McCullough 1973). The cutting was done by 1933, and Manley Moore went out of business (Everts and McCullough 1946).

In 1923, the Buckley Logging Company began operations along South Prairie Creek. A railroad system was gradually expanded along the creek valley. Throughout the years until World War II, the company moved its operations southward and eastward in the general vicinity of the creek. Logs were yarded and skidded down the steep hillsides and loaded onto railroad cars to be taken to the mill at Buckley.



Figure 4.29 Manley Moore Logging Railroad in the Carbon River area, looking up the incline, ca 1920-1930.

The St. Paul and Tacoma Lumber Company reached the Forest boundary along the Puyallup River in 1938, and along the Mowich River in 1943. Cutting also progressed up Evans, Voight (the location of Camp 2, rebuilt in 1943 after a fire), Rushingwater and Deer Creeks (Everts and McCullough 1946). Railroads were built to reach the various drainages. As logging was completed, the company removed the tracks, and sometimes the ties, leaving only a trail system. This resulted in a fire protection problem on the National Forest lands (Everts and McCullough 1946:116). Reporting on the logging practices within the Puyallup area in 1946, A.B. Everts and Nevan McCullough observed:

> The government owns, generally, every other section within the boundary. The rest of the land and timber is owned either by the St. Paul and Tacoma Lumber Company or the Northern Pacific Railroad on which the lumber company either has or undoubtedly will have cutting rights. This checkerboard ownership pattern has complicated the formation of logging plans and the following of approved, or at least adequate, silviculture practices. Especially is this true of earlier operations. All the owners are at fault. In recent years more thoughtful planning in regard to silviculture and fire protection is evident in Timber Sale Agreements. But the damage has been done. In three or four years the company will complete operations in this area and move elsewhere. Behind them they will leave a vast inaccessible cutover area, much of which is too far removed from a seed source to even hope for regeneration naturally, all of which present a terrific problem in fire protection... (1946).

With the increased use of logging trucks, making more and more timber lands available, this problem was alleviated. The Forest road system ties in with several routes originally blazed by railroad logging companies.

The U.S. Forest Reserves: Forest Administration

In 1891, Congress passed the General Land Law Revision Act, which included a provision authorizing the president to withdraw forest reserves from the unreserved public domain. President Benjamin Harris designated over 13 million acres as Forest Reserves in seven western states and Alaska. This included two and a quarter million acres set aside for the Pacific Forest Reserve in Washington in 1893. This meant that these lands were essentially closed to settlement and resource use - timber cutting, mining, farming and grazing - in an effort to protect the valuable but vulnerable resources from wanton exploitation (Steen 1976). In 1897, frustrated by an apparent disregard for the law shown by the western populace, President Grover Cleveland signed a proclamation establishing 13 new western reserves. Over 21 million acres were designated, including eight million acres in Washington state. The two largest were the Washington Forest Reserve in the northern Cascade Mountains, and the Mount Rainier Forest Reserve, which included the 1893 Pacific Forest Reserve, in the southern Cascades (Cameron 1977; Steen 1976).

The citizens of Washington were outraged. They objected strongly to the idea of setting aside "over 21 million acres for public parks" and felt that unless the proclamation was modified "it will paralyze the mining, lumbering and commercial interests of Montana and Idaho, and particularly of Washington" (Snohomish Eye 1897). A compromise was reached. Under the Organic Act of June 4, 1897, mining, agricultural developments and the use of timber, were allowed on lands which could be proved suitable for these purposes.

President William McKinley assigned special agent Gifford Pinchot to the task of examining the reserves shortly after they were established. He was to gather the data upon which to base a plan of administration:

> In this capacity he [Pinchot] visited Washington State, evaluating and photographing both the timber and grazing lands and the communities dependent upon them. During August, he crossed the mountains at Cascade Pass, then traveled down to the Skagit River. After leaving his traveling companion in Seattle... Pinchot returned alone to the mountains near the town of Monte Cristo, examined the land through the haze of burning forest fires, and climbed Columbia Peak. This was probably the first examination of this vast region -- as big as the state of Connecticut -- by a trained forester (Cameron 1977:5).

The Forest Reserves were administered by the Division of Forestry, Department of the Interior until 1905, when they were transferred to the Department of Agriculture. The principles and philosophy of service for the Forest Reserves were established in a letter from Secretary of Agriculture James Wilson to Gifford Pinchot, dated February 1, 1905 (Figure 4.30). "That letter," Pinchot wrote later, "it goes without saying I had brought to the Secretary for his signature" (Cliff 1971).

In the summer of 1908, Pinchot assigned a staff member to each of the District offices. District Six was established in Portland. (The term District was changed to Region in 1930 to avoid confusion with the Ranger Districts.) On June 18, 1908, the Washington National Forest was divided into two Forests; the northern portion from the international boundary to the Skagit River retained the original name, while the Snoqualmie National Forest was formed between the Skagit and the Green Rivers. The Rainier National Forest included the area south of the Green River, almost to Mt. St. Helens. Across the Cascades, the Naches and Tieton drainages were also part of the Rainier. The southern portion of the original Rainier Reserve became the Columbia National Forest, renamed the Gifford-Pinchot in 1949 (Cameron 1977:6).

The Washington National Forest was renamed the Mt. Baker in 1924. The former name fostered the misconception that the Forest was actually much larger than it really was. The Forest Service probably had a little help in their decision from the promoters of the Mt. Baker Lodge at the time (Miles 1984:140). On October 13, 1933, the most northern district on the Snoqualmie Forest, the Darrington District, was transferred to the Mt. Baker, and on January 1, 1936, the Monte Cristo District was formed from the southern portion of the Darrington District. At that time, the Mt. Baker National Forest consisted of six districts: Glacier (headquartered at the Glacier Ranger Station); Baker River (headquartered at the Koma Kulshan Ranger Station); Skagit (with headquarters at the Backus Ranger Station); Suiattle-Finney (headquartered at the Sauk Ranger Station); Darrington (with headquarters at the Darrington Ranger Station); and Monte Cristo (with headquarters at the Verlot Ranger Station (Field 1950:6). The Forest Supervisor's Office was in Bellingham, Washington.

The Snoqualmie National Forest started out with five districts, but by 1910 the Green and Snoqualmie River drainages were combined, making a total of four by 1910. They were Darrington, Silverton (later Monte Cristo), Skykomish and Lester (later North Bend). Headquarters were at the respective towns. The White River, Mineral, Naches and Tieton districts were transferred to the Snoqualmie National Forest when the Rainier National Forest was dissolved in 1933. That was the same year that Darrington (by that time combined with Silverton) became a part of the Mt. Baker.

With establishment of the North Cascades National Park in 1968, the Forest Service lost 301,000 acres, over 107,000 acres to the Recreational Areas in the Skagit District alone. In 1973, the decision was made to merge the Mt. Baker with the Snoqualmie National Forest. The Snoqualmie also gave up the administration of the Naches and Tieton Districts to the Wenatchee National Forest at that time. The reorganization was completed in 1974. The Supervisor's Office for the new Mt. Baker-Snoqualmie National Forest was located in Seattle. The current ranger districts are: Mt. Baker (formed from the Baker River and Glacier Districts in 1983), Darrington (a result of joining the Darrington and Monte Cristo Districts in 1983), Skykomish, North Bend and White River.

In the beginning years of the Forest Service, Ranger District headquarters were often situated in the woods, convenient to the field, but decidedly inconvenient to roads, supplies and medical facilities. Winters might have found the Rangers working out of their homes in town, or out of the supervisor's office, until the snow level receded enough to make their field

Department of Agriculture.
Office of the Secretary.
Washington, D.C.

The Forester,

February 1, 1905

Forest Service.

Sir:

The President has attached his signature to the following act:

"An Act Providing for the transfer of forest reserves from the Department of the Interior to the Department of Argiculture.

"Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of the Department of Agriculture shall, from and after the passage of this Act, execute or cause to be executed all laws affecting public lands theretofore or hereafter reserved under the provisions of section twentyfour of the Act entitled 'An Act' to repeal the timber-culture laws, and for other purposes, approved March third, eighteen hundred and ninety-one, and Acts supplemental to and amendatory thereof, after such lands have been so reserved, expecting such laws as affect the surveying, prospecting, locating, appropriating, entering, relinquishing, reconveying, certifying, or patenting of any of such lands.

"Sec. 2. That pulp wood or wood pulp manufactured from timber in the district of Alaska may be exported therefrom.

"Sec. 3. That forest supervisors and rangers shall be selected, when practicable, from qualified citizens of the States of Territories in which the said reserves, respectively, are situated.

"Sec. 4. That rights of way for the construction and maintenance of dams, reservoirs, water plants, ditches, flumes, pipes, tunnels, and canals, within and across the forest reserves of the United States, are hereby granted to citizens and corporations of the United States for municipal or mining purposes, and for the purposes of the milling and reduction of ores, during the period of their beneficial use, under such rules and regulations as may be prescribed by the Secretary of the Interior and subject to the laws of the State or Territory in which said reserves are respectively situated.

"Sec. 5. That all money received from the sale of any products or the use of any land or resources of said forest reserves shall be covered into the Treasury of the United States, and for a period of five years from the passage of this Act shall constitute a special fund available, until expended, as the Secretary of Agriculture may direct, for the protection, administration, improvement, and extension of Federal forest reserves.

"Approved, February 1, 1905."

By this Act the administration of the Federal forest reserves is transferred to this Department. Its provisions will be carried out through the Forest Service, under your immediate supervision. You have already tentatively negotiated the transfer with the Commissioner of the General Land Office, whose powers and duties thus transferred I assign to you. Until otherwise instructed, you will submit to me for approval all questions of organization, sales, permits, and privileges, except such as are entrusted by the present regulations to field officers on the ground.

All officers of the forest reserve service transferred will be subject to your instructions and will report directly to you. You will at once issue to them the necessary notice to this effect.

In order to facilitate the prompt transaction of business upon the forest reserves and to give effect to the general policy outlined below, you are instructed to recommend at the earliest practicable date whatever changes may be necessary in the rules and regulations governing the reserves, so that I may, in accordance with the provisions of the above Act, delegate to you and to forest reserve officers in the field, so much of my authority as may be essential to the prompt transaction of business, and to the administration of the reserves in accordance with local needs. Until such revision is made, the present rules and regulations will remain in force, except those relating to the receipt and transmittal of moneys, in which case Special Fiscal Agents of this Department will perform the duties heretofore rendered by the Receivers of Local Land Offices in accordance with existing laws and regulations. The Chief of Records, Bureau of Forestry, is hereby designated a Special Fiscal Agent, and you will direct him at once to execute and submit for my approval a bond for Twenty Thousand Dollars.

Figure 4.30 "The Pinchot Letter," February 1, 1905 (retyped for reproduction).

On December 17, 1904, the President signed the following order:

"In the exercise of the power vested in the President by section 1758 of the Revised Statutes and acts amendatory thereof:

"IT IS ORDERED, That all persons employed in the field and in the District of Columbia in the 'protection and administration of Forestry Reserves in or under the General Land Office of the Interior Department' be classified and the civil service act and rules applied thereto, and that no person be hereafter appointed, employed, promoted, or transferred in said service until he passes an examination in conformity therewith, unless specifically exempted thereunder. This order shall apply to all officers and employees, except persons employed merely as laborers, and persons whose appointments are confirmed by the Senate."

This order classifies the whole forest reserve Service, now transferred, and places it under the Civil Service Law.

In the administration of the forest reserves it must be clearly be one in the mind that all land is to be devoted to its most productive use for the permanent good of the whole people and not for the temporary benefit of individuals or companies. All the resources of forest reserves are for use, and this use must be brought about in a thoroughly prompt and businesslike manner, under such restrictions only as will insure the permanence of these resources. The vital importance of forest reserves to the great industries of the western states will be largely increased in the near future by the continued steady advance in settlement and development. The permanence of the resources of the reserves is therefore indispensable to continued prosperity, and the policy of this Department for their protection and use will invariably be guided by this fact, always bearing in mind that the conserative use of these resources in no way conflicts with their permanent value. You will see to it that the water, wood, and forage of the reserves are conserved and wisely used for the benefit of the home builder first of all; upon whom depends the best permanent use of lands and resources alike.

The continued prosperity of the agricultural, lumbering, mining and live-stock interests is directly dependent upon a permanent and accessible supply of water, wood, and forage, as well as upon the present and future use of these resources under businesslike regulations, enforced with promptness, effectiveness, and common sense. In the management of each reserve local questions will be decided upon local grounds; the dominant industry will be considered first, but with as little restriction to minor industries as may be possible; sudden changes in industrial conditions will be avoided by gradual adjustment after due notice; and where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.

These general principles will govern in the protection and use of the water supply, in the disposal of timber and wood, in the use of the range, and in all other matters connected with the management of the reserves. They can be successfully applied only when the administration of each reserve is left very largely in the hands of the local officers, under the eye of thoroughly trained and competent inspectors.

Very respectfully,

James Wilson

Secretary.

quarters available. For years, the Ranger was one of only three or four full time employees of each district, and was required to tackle virtually every task that needed doing. In October 1909, C. C. McGuire reported to the Supervisor's headquarters in Bellingham along with 15 other recruits to take the three-day test for becoming a forest ranger. He recalled the ordeal several years later:

> As memory serves me, the following tests were given: (1) from the foliage, identify ten species of trees grown on the Mt. Baker - give common and technical names - if you can spell the latter, more power to you. (2) Fall a tree ten or more inches in diameter with an axe. In giving this test a stake was driven in the ground about 20 feet from the tree. The victim was allowed to select the point where the stake was driven. All he had to do then was to fall the tree so that it would drive the stake further into the ground. His skill was determined by the nearness of the tree bole to the stake. Only three candidates out of the sixteen survived that test, one man actually driving the stake. Most trees went wide of the mark with some trees falling in the opposite direction. (3) Figure magnetic declinations on the four quadrants of the compass. In those days it seems no one thought of the idea of setting off the compass dial. (4) Run and pace a triangle, prepare the field notes and compute the acreage. (5) Demonstrate your ability to use a seven foot cross-cut saw. (6) Tell the boss man what ingredients and how much of each you would use in preparing a batch of biscuits. (7) How to build and put out a campfire (no accent on getting the last spark). (8) Pack a horse. This was a toughy - the pack consisted of two loosely tied sacks of oats, an axe, a mattock, a shovel and a cross-cut saw. Also, five days supply of grub for one man - all unpacked and a conglomeration of cooking equipment. Not only was your skill tested but you worked against time. Many would-be rangers fell by the wayside on this test... only the following four men survived the three day test namely, Ralph Hilligoss, Carl Bell, Grover Burch and C. C. McGuire (n.d.).

Homesteaders and Timber Claims

One of the first struggles that faced the new foresters was the problem of homesteaders on National Forest lands. The Homestead Act, passed by Congress in 1862 to encourage settlement of the west, provided for land held in the public domain to be transferred to individual ownership. Under the Act, a settler could acquire 160 acres of unoccupied public land by residing on and improving the land, and paying nominal fees (Raney and Raney 1973). There was much resentment when the establishment of the Forest Reserves barred additional homestead claims. In 1906, the Forest Homestead Act was passed, opening up Forest Reserve lands useful for agriculture.

Another law, the Timber and Stone Act of 1878, provided for the sale of public domain lands chiefly valuable for timber and stone at a minimum price of $2.50

per acre. The act applied to unoccupied and unimproved surveyed lands of non-agricultural character. Until 1908, the maximum paid for land purchased under this law was the minimum price, and many timber investors gained large tracts under this act. After the Forest Reserves were established, fraudulent homestead claims became a common way for investors to increase their holdings. They sought men willing to file a homestead entry and do the minimum amount to acquire title. After a patent was granted, the 160-acre claim was sold to the timberman. The standard price was $500 (McCullough 1970:28).

The Rangers were assigned the task of examining the existing unpatented claims to determine if they were bona fide. A description of each claim was written with the cleared area and the size of the cabin specified (Figure 4.31). If a reasonable amount of acreage was cultivated, the claim was considered to have been made in good faith. If not, the Forest Service would then take the evidence to the hearing before representatives of the Government Land Office, a branch of the Department of the Interior, and protest the issuance of a patent (Bruckart 1980:3).

In 1909, C.C. McGuire, who was a Forest Guard on the Finney District that year, was directed to examine the claims in his district. He reported that of over 50 claimants, only one appeared to have made an honest effort to comply with the homestead law. Typical of his findings was the C. E. Montgomery claim on Cumberland Creek:

> I examined this claim and found it laid on a mountain side wholly unsuited for agriculture, but was covered with 5,500,000 board feet of merchantable timber. While the homestead law did not require a definite portion of the land be placed under agriculture, it did require that the land should be the home of the claimant and that agriculture be pursued with due diligence. In this case the claimant resided in Bellingham where she taught school. Her residence was sketchy and amounted to less than two months per year. The cleared area under cultivation measured sixty-two feet by one hundred feet with a three-foot log lying the long way through the area. In addition there were seven stumps six to twelve inches in diameter. Not over two thirds of this plot could be cultivated. Miss Montgomery conducted her own case before the Register and Receiver of the General Land Office and proved herself a better lawyer than a homesteader, for she won the suit and was granted a patent. Then she had a white elephant on her hands. The area was so isolated that lumbermen were not interested and of course no one would think of buying the land for agricluture. After many years had past she finally sold the land back to the Forest Service for $800.00 (McGuire n.d.)

Some claimants alleged settlement prior to the inclusion of their claims in the National Forest. Unable to gain timber land any other way; people would also file fraudulent mining claims. C. H. Park, who later supervised the Mt. Baker Forest (1908-1926), completed a number of examinations on the Rainier National Forest. In his opinion, the Forest Service was very lenient, giving many homesteaders the benefit of the doubt:



U. S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE

PRESENTED BY	COPYRIGHT.	REPRODUCED.

LOCALITY. Rainier National Forest. Pierce Co. Washington

DATE. May 14, -08

SUBJECT. Showing slashing of White Pine, Douglas Fir, Hemlock, Cedar and Cabin on contested homestead claim. H.E. No. 2985 of Roswell P. Harding, Showing Claimants Cabin and improvements. Stand of timber estimated at 4,500,000 B.M. by Frank Kellogg. ~~SPECIES~~ Cancelled January 6, 1911, by Commissioner of General Land Office. Application for reinstatement denied Dec. 9, 1913, by Commissioner of General Land Office.

DIAM.

HEIGHT.

DENSITY.

AGE.

EXPOSURE. 8 Sec.

STOP. 64

LIGHT. Light clouds

HOUR. 9 A.M.

DIRECTION. E.

FIELD No. 82418

COL. No. 50

RELATIVE SITUATION. SW¼ Sec 22. T19N R10E. W.M. Bench on mountain side

HUMUS. Thick

ALTITUDE. 2900

SOIL. Very poor

TYPE. Upland

SLOPE. N.

GROUND COVER. Heavy.

STAND. Mixed

ROCK.

TAKEN BY C. H. Park

8—757 F

Ho 135

Figure 4.31 A typical timber claim had a rustic cabin, surrounded by merchantable timber. Often, a small potato patch was cultivated to impress the Forest Service examiners. C. H. Park, Supervisor of the Rainier National Forest, and later of the Mt. Baker National Forest, examined many fraudulent homestead claims before 1910.

> The government encourages every legitimate development of the resources of the whole forest but the attempted acquisition of valuable timber lands by any fraudulent claim will be fought by the Forest Service by every means in its power (Park 1908).

By about 1910, it appears that most of the initial examinations had been done and the Forest Rangers could move on to other duties.

Fighting Fire

> The first duty of a ranger is to protect his district from damage by fire. During the fire season, patrolling for fires must take precedence over all other work. The ranger is constantly on the move, from point to point, on the lookout for fires. He may, and often does, climb to high places that afford a good lookout station to see if any smoke is arising indicating a forest fire (Park 1908).

At the turn of the century, state of the art logging practices were a major cause for fires in the National Forests. Logs were yarded and loaded with steam donkeys fired with wood, a good, cheap and readily available fuel. Only the clear portion of the the trees were merchantable, so there was always a good deal of burnable material lying around a logging site. In the right weather, a fire was inevitable. The loggers would act quickly to remove their equipment while several thousand acres went up in smoke (McCullough 1970:73).

Railroads, both logging and common carriers, also contributed to the fire problems. Many were fueled with coal, and their locomotives started a great many fires along the tracks and adjacent to the right-of-way (c.f. Lundin and Tussler 1922). The omnipresent threat prompted one cartoonist to make light of the situation (Figure 4.32). The Forest, however, was virtually dependent on the railroads for the shipment of any large quantity of fire-fighting equipment to various access points along the line. The railroads also cooperated by supplying the Forest with tools and men, if the need arose.

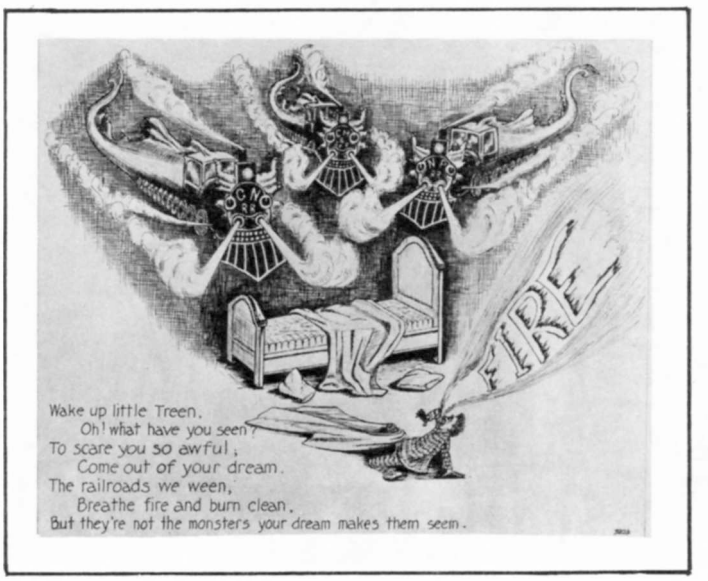


Figure 4.32 A cartoonist illustrated one of the important topics discussed at the Regional Supervisor's meeting: the omnipresent threat of fires along the railroad tracks, 1919 or 1920.

With the development of oil-burning engines, the problems related to the railroads diminished. But, the threat of lightning fires was always present and never predictable.

At one time or another since 1915, there have been at least 75 lookouts or lookout sites on the Mt. Baker-Snoqualmie National Forest. The first lookouts were of a style called D-5s [from California's District (Region) 5]. They were 12 x 12 foot cabins with an observation cupola on top. Cupolas were a common feature of lookouts built in the 1920s, although a few were built later. The 14 x 14 foot cabin with a gabled roof came next. They were very simple in construction with windows on all sides, and shutters that lowered down to cover them. This type, apparently not very popular, carried the nickname of "Grange Hall" (Spring and Fish 1981). About the same time, the early 1930s, the hip roof style became popular. It was designed for the snowy Region 6, and was called the D-6. The last style to be built, the flat top, was introduced in the late 1940s and was a popular construction through the 50s. The flat top (flat roof) building was often built on a tower. Not many of these were built, as lookouts were being phased out at that time.

The first lookouts on the Forest were located on Gold Mountain on the Darrington District, and Granite Mountain on what is now the North Bend District. Both were established in 1915. The Gold Mountain station, which consisted of nothing more than a "raghouse" (tent) was abandoned after one season and was moved the following year to Jumbo Mountain (Field 1950). Granite Mountain fared better. The first structure was a 12 x 12 foot shake cabin with windows on all sides (Figure 4.33). The total cost for construction was $400.00. It was replaced in 1924 by a D-5, and in 1955, a 20 foot tower was added.

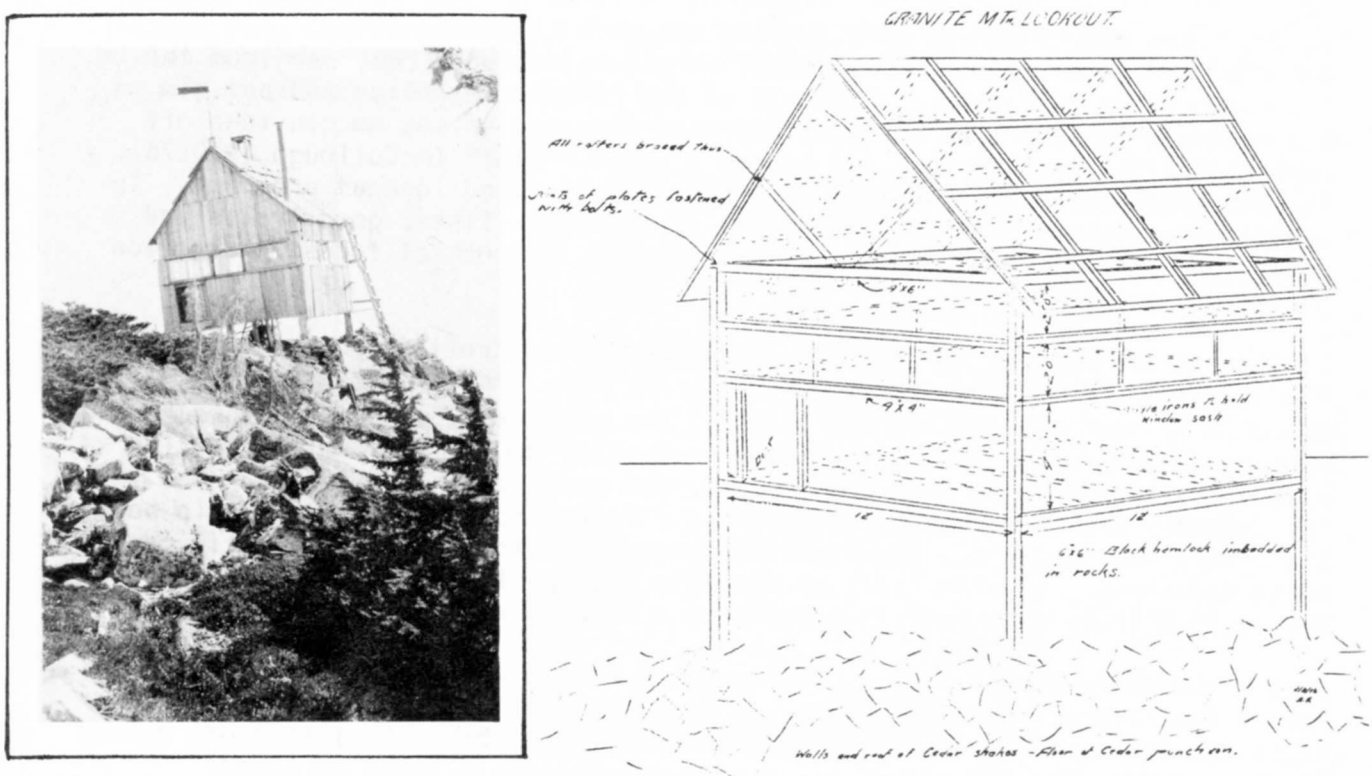


Figure 4.33 Granite Mountain Lookout, photographed in 1916.

The first actual lookout structure of record on the Mt. Baker was built on Sourdough Mountain in 1917, by Glee Davis (Field 1950; Englebright 1964). It was a 12 x 12 foot building with a 6 x 6 foot cupola. The siding and shingles were hand-split at the Davis home on the Skagit River and hauled up the trail - about a 50% grade - by pack horses:

> ... Then W. L. Stillwell helped me load my two horses and two government mules with the lumber and we went up that trail. It was quite a trip... We cut studding and joists out of some Alpine fir. The sun was so hot - we were nearly 6,000 feet in elevation - that the fir warped pretty badly... Malcolm (Campbell) then moved from his tent to the new building. And later, Mr. Osborne came up to try out his new invention, the Osborne Firefinder (Englebright 1964:6).

Two unanticipated series of disasters marked a change in the use of lookouts on the Forest. Firstly, in the summer of 1926, the Mt. Baker Forest suffered two major forest fires on its Skagit District, one of which was the Big Creek Fire. It had probably burned about four days before it was detected on July 4th. The first to respond was Ranger Tommy Thompson. With the help of 10 crewmen, he confined the fire within a few days. During the night, however, a shift in the wind caused a flare-up, and the fire was never contained after that, burning in spots until October of that year. A total of 43,000 acres were burned by the time the fall rains came (Cameron 1977; McGuire n.d.). The other fire on the Skagit District that year was at Bacon Creek, lower down the Skagit River. A total of 6,000 acres were burned. The Mt. Baker responded to the heavy losses that summer by implementing a program of manning more lookout stations.

In 1927, the second series of disasters struck. Lightning storms that touched every district on the Rainier National Forest initiated a response from the District Office in Portland: "Get rid of the Pothole Patrolman and put him on the mountain top where he can see, and when the need arises he can take off down hill with his fire pack and become a smoke chaser" (McCullough 1970:76). The Mt. Baker and the Snoqualmie thus began accelerated lookout programs. In addition to lookout stations, a network of telephone lines, good trails and roads, and adequate equipment were important in the work of forest protection and fire fighting.

During the Depression, part of President Roosevelt's relief program established the Civilian Conservation Corps (C.C.C.), National Industrial Recovery Act (N.I.R.A.), Emergency Relief Act (E.R.A.) and other work programs. Through the efforts of these men, several lookouts were built and rebuilt, miles of fire access trails and roads were constructed, and many fires were fought. The improvements and increased crews gave the fire protection program a whole new character: "No longer did the District Ranger have to do it all himself, or as Nevan McCullough recalled, ring up the Idle Hour pool hall in Enumclaw or Rube Nelson in Wilkenson to have them round up a crew" (Cameron 1977).

During the years that followed, the lookouts were placed in an exciting new role. The Aircraft Warning System was organized in 1942 to report aircraft sightings during the war. The logistics of keeping the lookout stations manned 24 hours a day on a year-round basis caused problems in terms of winter accessibility, and several were closed down the first winter. The Mt. Baker Forest reported:

> [1942] An aircraft warning service was established by the Army and with Forest Service cooperation a system of 24 observation posts were activated for 24 hour duty. Sixty additional employees were added to the Mt. Baker personnel to operate the warning system.
>
> [1943] Heavy snows in January and February hampered operation of the Aircraft Warning Service and observers on high lookout points, except the Copper Mountain (Glacier District) were moved to lower elevation posts (Field 1950:114-115).

Still, the National Forest's response to the program during that year was exemplary. The Army reported 100% accuracy in reporting flights that came within four miles of these posts. Nevan McCullough recalls that the three lookouts that served the A.W.S. on the White River District, South Prairie (O'Farrell), Suntop and Colquhoun, were staffed by husband and wife teams (1970).

Although a few new lookouts were built during the 1950s and 1960s, the use of lookouts was generally on the decline (Table 4.3). The construction costs were increasing, and they were not as efficient to operate as aerial surveillance with the improved transportation systems and other technological advances. In the 1930s, it may have cost $900 to $1,000 to build a lookout and $1,000 to staff and supply it. By 1950, a replacement of the Kelly Butte structure on the North Bend District cost $3,461; a few years later, it cost $7,608 to erect a 14 x 14 foot structure at Granite Mountain. In 1964, the construction of a 14 x 14 foot flat-top on a 70 foot tower at Heybrook (Skykomish District) came to $22,028 (Spring and Fish 1981).

A few other things had changed as well. Gone were the days of the isolated stations, accessible only by several miles of strenuous trail. The new lookouts could go home after a work shift or "sneak away to town for a beer" (Spring and Fish 1981:17). These buildings have been gradually disappearing since the late 60s (Figures 4.34; 4.35).



Figure 4.34 The Stampede Lookout was moved from the North Bend District to Camp Waskowitz, for use by Highline Public School District, in 1974 (photograph by Ken White).

Table 4.3 Known Lookout Points on the Mt. Baker-Snoqualmie National Forest (compiled by Dan Call, Mt. Baker-Snoqualmie National Forest, 1983)

MOUNT BAKER NATIONAL FOREST

NAME	BUILT	DESTROYED REMOVED	LEGAL	ELEVATION	TYPE
Anderson Butte BR	1936 1929	1964	37-09-23	5420'	14X14
Bacon Point SK	1936	1956	36-11-16		14X14
Baker Point BR aka Baker Lake	1935 1936	1956	38-09-34	1600'	25' tower
Barlow Point MC	30's manned by Barlow Guard as ELO--GS dates from ca. 1915	ca1965	30-11-31		14X14 house
Barometer Mountain	no building, phone nailed to tree		39-08-14	5770'	
Blackjack Ridge MC	1935 1934	ca1961 used by AWS	30-09-26	5156'	14X14 type C 40' tower
Blackoak DR	tent frame, taken to North Mtn, 1960	1960	31-11-07	2948'	
Cady Ridge (Skagit) SK	1934? aka Cady Point (NPS). Reported a fire, 1937	BF45?	37-17-06		10X10
Church Mountain GL	1928	1967	40-07-27	6245'	12X12 w/cupola
Circle Peak DR	1935 1931	1967	32-11-36	5860'	
Copper Mountain GL	1934 transferred to NPS 1969	-up-	40-10-35	6260'	ground house AWS
Crater Peak (newer) SK (NPS)	1938 rebuilt 1955, transferred to Okanogan 1969, dismantled 1973 one of these is probably 38-16-05 NW1/4	1973	37-16-05	8049'	14X14 grnd hse
Crater Peak (older) SK (NPS)	1932	1968	38-14-36	8125'	14X14 grnd hse
Dan Creek DR	no reference other than Spring and Fish (1981): used in 1940 & 41		32-10-27		
Darrington R.S.	established present site in 1945 as Sulattle Dist H.Q.		32-09-14	550'	
Desolation Peak SK	1932 transferred to NPS 1969	-up-	40-14-32	6085'	14X14 std
Devils Dome SK (NPS)	1934	1968	38-14-36	6982'	14X14 house 10X10
Dillard Point BR	1962	1981	37-08-23	2400'	14X14 flattop 40' tower
Dock Butte BR	1937 reported a fire from this location, 1931. no evidence of structure prior to 1937. Listed as a secondary location 1936.	1964	36-08-05	5210'	14X14 grnd hse
Easy Peak Ridge GL	1936 transferred to NPS 1969, burned by them 1973. May never have been used.	1973	39-11-06		
Excelsior Point GL	1936 May never have been used.	1968	40-08-20/ 29	5699'	10X10 house
Finney Peak BR	1933	1965	33-08-02	5090'	14X14 ground cabin

NAME	BUILT	DESTROYED REMOVED	LEGAL	ELEVATION	TYPE
Flower Dome DR	photo point only?		31-15-34	5778'	
French (Creek) Point DR	1934 tower only blown down in storm 10/34 French Creek G.S. est. 1906, abandoned 1930s	1959	32-08-16	1100'	14X14 Alladin type 36' tower
Gee Point ca. BR	1930 1935 on 1931 map of the Mt. Baker N.F.	1964	34-08-18	4974'	10X10 house
Glacier Creek Ridge DR	1934 1936	1957	30-14-06	5160'	tower type 14X14 type C on 40' tower
Goat Mountain GL	1935 1934 may never have been used.	1956	40-09-33	4115'	14X14 on 15' tower
Gold Mountain DR	1915 moved to Jumbo 1916, taken down fall 1915	1915	32-10-33		prabably no house
Green Mountain DR	1929 1933	1933 -up-	32-12-03 rebuilt 1950-snow damage	6300'	8X8 house
Hidden Lake Peak BR	1931 transferred to NPS, transferred back, under Special Use Permit	-up-	35-12-26	6850'	14X14 house
Huckleberry Mountain DR	1938 burned by vandals early 60s, standing 1961	60's	32-12-3&2 33-11-34	5836'	10X10 type D
Jack Mountain SK (NPS)	Shown on 1922 Washington National Forest map, no other reference				
Johnson Mountain MC	1938 may have been removed early 60s	1959	29-13-18	6680'	
Jumbo DR	1916	unknown	31-09-11		probably no house
Lookout Mountain GL	no building, phone nailed to tree.		39-07-32	5021'	
Lookout Mountain (old) BR (new)	1928 1962	 -up-	35-11-01 same	5719'	14X14 flattop 40' tower
Miners Ridge 1st DR 2nd 3rd	1929 1938 1953	???? 1953 -up-	31-15-7/8 same same	6210'	shingle house 20' tower aladdin 25' tower D-6 type
Mount Higgins DR	1926 1936 shown on 1922 Washington N.F. map	1965	33-08-32	4849'	12X12 w/cupola
Mount Josephine BR	probably a State L.O., no data found, appears on 1936 map		36-07-19		
Mount Pilchuck MC	1918 built by State with USFS cooperation, transferred to State, fall 1953	-up-?	30-08-29	5324'	12X12 w/cupola
North Fork Bench DR aka Bedal Point	1936 1937	1955 sold for salvage, Abe Reece bought it	30-11-10	1281'	14X14 on 20' tower
North Mountain DR	1966	-up-	33-09-26	3956'	14X14 flattop 40' tower
Park Butte BR	1936 under Special Use Permit to Skagit Alpine Club, Mount Vernon	-up-	37-07-11	4052'	ground house
Pugh Mountain DR	1921	1965	31-11-27	7150'	12X12 w/cupola

NAME	BUILT	DESTROYED REMOVED	LEGAL	ELEVATION	TYPE
Red Mountain Ridge GL	1935 1936?	 5/20/68 (burned)	30-12-28	5230'	14X14 house, type D
Rinker Point DR	1935	1956	34-09-33	3080'	14X14 tower/ cabin, catwalk
Roland Point SK (NPS)	1934	1959	38-14-19	1983'	35' tower
Round Mountain DR	photo point? confused with Tieton's Round Mountain		33-08-27	5300'	14x14/ 20' tower
Ruby Mountain SK (NPS)	photo point? ELO		37-14-13		
Sauk Mountain BR	1928 1957	1957 -up-	35-09-14 same	5510'	12X12 w/cupola 14X14 flattop
Sourdough Mountain SK(NPS)	1917 1933 transferred to NPS 1969	1933 -up-	38-13-33 same	5985'	12X12 w/6X6 cupola 14X14 ground
Sulphur Burn BR	1935 aka Sulphur Butte, Sulphur Point	1959	37-08-27	2262'	15' tower
Sulphur Point	(Darr.) referred to in Spring and Fish (1981), no evidence of use				
Texas Pond DR	1907 1st Lookout on Mt. Baker N.F. 1934	unknown unknown	33-09-01	1950'	platform 14x14 type D on tower
Three Fingers MC	1933 construction started 1930	-up-	31-09-18	6854'	
Veriot Point MC	1934 materials on order 8/34	unknown	30-08-12		
West Church GL	no building, phone nailed to tree.				
Welker Peak	listed as ELO 1928				
Wheeler Shoulder DR	photo point?		31-07-04		
Whitechuck Bench DR	1935 Sold salvage	1955	31-10-13		
Winchester Mountain GL	1935	-up-	40-09-16		14X14 ground house
	SNOQUALMIE NATIONAL FOREST				
American NA	1934 summit of Goat Peak aka Goat Peak, American Ridge	1968	17-13-30	6473'	14X14 ground house
Anvil Rock MR	SH36	1950	16-09-31	9584'	
Bald Mountain NA	1931 1955 1941 planned to replace w/14X 60' w/7X7 cage	AF55 AF69	17-15-15	5906'	38' steel twr
Bare Mountain NB	1934 33? 1973 aka North Fork-Bare Mountain		25-10-15		14X14 ground house
Bear Creek Mountain TI	1931 tent est. 1928	ca1955	12-12-17	7336'	14X14 ground house, grange hall

NAME	BUILT	DESTROYED REMOVED	LEGAL	ELEVATION	TYPE
Bearhead Mountain WR	1931	60s	18-08-29	6089'	14X14 ground house
Beckler Peak SKY	1925	ca1950? 1959 BF1960	26-12-20	5000'	35' log tower w/cage plus cabin on ground
Benchmark (Cady Pass) SKY	1929	ca1958 AF1955	28-12-12	5833'	12X14 w/cupola
Big Creek Cle Elumsburg	SH37 reported fire 1938	NS47	19-13-06		
Blue Slide TI	1942 moved from Darland	PL63	12-13-04	6785'	
	1961	AF69			flat 16x16 w/ 30' tower
Carbon Ridge DNR	60s	60s	18-07-17	4144'	50' tower
Cedar Point-see Lookout Mountain (watershed)					
Christoff-see Huckleberry Mountain					
Clearwest WR	1933	10/21/68	18-08-25	5643' 5696'	14X14 ground house
Clover Springs NA	1940		16-13-22	6351'	10X10 ground house
Colonnade MR	1930 shown with telephone and radio in 1936 NPS Fire Plan Map	SH47	16-07-24	6800'	
Colquhoun Peak WR	1931	1960	19-11-18	5715'	14X14 ground house AWS
Cougar Rock WR	up, w/radio 1955, planned 60, 63		21-09-34		
Crystal Point MR	NS34 shown on 1936 NPS Fire Planning Map, w/telephone and radio	NS47	16-10-02	6615'	
Darland Mountain TI	1925	unknown	12-13-21	6979'	14X14 D-6 house
	1935	1942			14X14 on 40' tower
	moved to Blue Slide, 1942 State tower here 1955				
Deschutes Peak see The Rockies					
Devils Slide NA	SH47 MAP		17-15-09	observation point only?	
Edgar Rock (ELO) NA	1933	SH47	17-14-26		10X10 ground house
Evergreen Mountain SKY	1934 1936?	-up-	27-17-16	5585'	14X14 ground house
Galena SKY	1933 moved to Maloney Mtn	1950	28-11-30		14X14 ground house
Glacier View MI	1934	60s BF68	15-07-05	4522' 5460'	14X14 ground house, D-6
Gobblers Knob MR	1933 shown on 1936 NPS Fire Planning Map w/telephone and radio	-up-	15-07-10	5500'	
Grass Mountain DNR	SH47 NS37	1975	20-08-21	4382'	110' tower 1958 to 50'

NAME	BUILT	DESTROYED REMOVED	LEGAL	ELEVATION	TYPE
Granite Mountain NB	8/4/1915	unknown	22-10-01		12X12 shake cabin w/ windows
	1924	unknown	same		14x14 D-5 ground house w/6x6 cupola
	1955	-up-	same		14x14 on 20' tower
Heybrook SKY	1936	unknown	27-10-21	1701'	14X14 on 40' tower
	1964	-up-	same		14X14 flattop 67' tower
High Rocks MI	1931	-up-	14-07-22	5687'	14X14 ground house D-6
Huckleberry DNR	1931 aka Huck	1965 Mineral R.D.	14-03-09 or State Div Forestry	3817'	14X14 ground house
Huckleberry Mountain WR aka Christoff	6/34 1935	1963	20-09-36	4764'	10X10 ground
Humphrey NB	1934	1973	20-09-09	2573'	14X14 on 20' tower
Jumpoff TI rebuilt	1921 1957	-up-	13-14-01	5745'	14X14 ground house
Kelly Butte NB	1924	unknown	19-10-02	5409'	12X12 w/6X6 cupola
	1951 rebuilt 1972	-up-	same		14x14 ground house
Little Bald Mountain NA	1936	1980	16-13-02	6108'	14X14 on 20' tower hip roof w/30' tower?
Little Mountain WATERSHED	1935	1969	22-09-21	2972'	100' wood tower w 7x7 cage
Lookout Mountain WATERSHED	31? AF34 aka Cedar Point	SH47 built 61-up?-	22-08-07	2162'	15X15 on 40' tower
Lookout Mountain MI	1932	1968	14-08-10	5433'	10' L-4
Maloney Mountain SKY	1952 aka Mount Malone, Maloney Ridge Now Electronics Site	1969	26-11-36	3364'	14X14 from Galena
Meadow Mountain NB	1933 35?	1972	21-11-19	5419'	12X14 ground house
Miners Ridge TI	1933	unknown	15-11-12	6082'	Moved to Rocky Point?
	unknown	1972 3?		6072'	14x14 on 40' tower; 10' twr
Mount Alx NA aka Alx Peak	1923	BF60 SH47	15-15-18	7772'	12X12 w/cupola
Mount Beljica (ELO) MI may have been only a phone nailed to a tree	SH37	PL65	15-07-17	5486' 5475'	no building
Mount Cleveland SKY	unknown	1924	25-11-08	5301'	raghouse
Mount Fremont MR	SH36 Shown on 1936 NPS Fire Planning Map, w/telephone and radio	-up-	17-09-21	7181'	
Mount Sawyer SK	30's	unknown	25-12-14	5501'	raghouse 10x PL 1941 never built?

NAME	BUILT	DESTROYED REMOVED	LEGAL	ELEVATION	TYPE
Mutton Mountain WR	SH37 Building remains seen, 1974	BF74	18-10-24	6142'	
Newaukum Rock MI	1933	SH34 BF68	14-03-31	3244'	14X14 ground house, D-6
Noble Nob WR	1934	1954 60?	18-10-13	6011'	14X14 ground house, L-4
Nordrum NB	1934	SH47	24-10-16	1500'	14X14 on 20' tower D-6 10' twr?
Norse Peak WR	1930 tent est. prior to bldg, maybe same season	1959-61	17-11-18	6856'	14X14 ground house
North Ridge Cle Elumsberg	SH37		19-13-13	5268'	40' tower?
O'Farrell see South Prairie					
Pleasant Valley DNR	1934	SH47	15-04-36	2159'	14X14 on 20' tower
Proffits Point SKY	Reported fire 1931	ca 1933	ca 1950 NS1947	26-12-28	
Pyramid Peak WR	1923 1949	1949 10/21/68	19-11-28 same	5715'	D-5 12x12 ground 14x14 ground house
Quartz Mountain NA	1938 reported fire 1931, 34,	1967	18-14-03	6289'	42' tower when built
Ravens Roost NA	1935 garage not burned until 10/17/68	1964	18-12-22	6198'	14X14 ground
Rocky Point TI	1941 second location on Miners Ridge?				from Miners Ridge
Round Mountain TI	1940 1930?	1976	13-12-09	5971'	14X14 on 25' tower 20'?
Sedge Ridge	Photo point w/guy wires in picture? 1934				
Shriner Peak MR	SH36 32? -up- Shown w/telepone and radio		15-10-03	5846'	
Snowshoe Butte NB	1934 abandon 5/10/62 disposal planned 1967	SH47	20-11-14	5135'	10X10 D-6 ground house maybe twr, too
South Prairie DNR	1934 renamed O'Farrell to avoid confusion w/ AWS station in South Prairie (town)	60s	18-07-08	3235'	14X14 on 20' log tower AWS
Stahl Mountain ELO MI	1934	SH47 BF68	15-04-35	3719'	10X10 ground house
Stampede Pass NB	1934	1974	21-11-15 21-12-34	3963'	14X14 on 40' tower D-6, AWS
Sunset MR	NS37 33?	1973	16-07-11	5537'	patrol cabin? w/cupola
Suntop WR	1932	-up-	18-10-18	5271'	14X14 ground house D-6, AWS
Suprise Mountain SK	1931 replacement w/14x14 on 40' tower planned 1941 or later	1959	25-13-21	6330'	14X14 ground house

NAME	BUILT	DESTROYED REMOVED	LEGAL	ELEVATION	TYPE
The Rocklew MI, DNR aka Deschutes	1922 Peak	AF47 BF6856?	14-03-36	4383' 4363'	14X14 ground house D-5 cupola
Timberwolf Mountain TI	1931	1975	15-13-25	6391'	14X14 ground house, grange hall
Tolmie Peak MR	SH36 1936 NPS map shows w/telepone and radio	-up-	17-07-14	5939'	2 story frame cabin
Tonga Ridge SKY Tonga Ridge/Mt. Sawyer	perhaps another name for Proffits Point shown on 1934 map		25-12-14	5495'	10x PL AF1941
Tumac Mountain TI	SH37 reported fires 1931	SH47	14-12-08	6340'	ground house possibly 10x10
West Fork (Tilton) MI	1934	SH47 BF68	13-04-12	2000'	14X14 on 20' tower
Windy Point SKY	30s		26-14-20	5386'	raghouse 10x PL 1941

LIST OF ABBREVIATIONS

MI=MINERAL R.D.
MR=MOUNT RAINIER NAT. PARK
NA=NACHES R.D.
NB=NORTH BEND R.D.
SKY=SKYKOMISH R.D.
TI=TIETON R.D.
WR=WHITE RIVER R.D.
ELO=EMERGENCY LOOKOUT
BR=BAKER RIVER
GL=GLACIER
SK=SKAGIT

NS=NOT SHOWN
SH=SHOWN
CA=CIRCA
BF=BEFORE
AF=AFTER
PL=PLANNED
AWS=AIRCRAFT WARNING SYSTEM
GS=GUARD STATION
DR=DARRINGTON
MC=MONTE CRISTO

THE FEBRUARY 18, 1941 PROTECTIVE IMPROVEMENTS INVENTORY IS THE SOURCE FOR MOST CONSTRUCTION DATES. "SH47" MEANS THAT A 'LOOKOUT' WAS SHOWN ON A FOREST MAP PUBLISHED IN 1947. IT DOES NOT NECESSARILY MEAN THERE WAS ANY SORT OF STRUCTURE THERE AT THAT TIME.

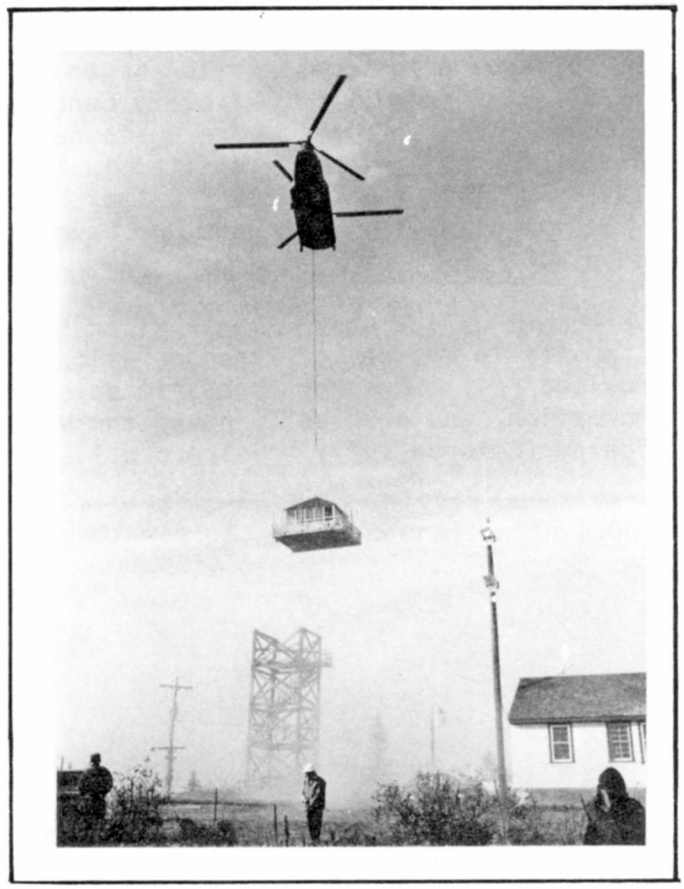


Figure 4.35 The lookout house was airlifted and placed on a new tower at Camp Waskowitz near North Bend, about 20 miles west of its original location (photograph by Ken White).

Water: A Valuable Resource

Hydroelectric Development on the Skagit River

Around 1904, the Skagit Power Company acquired the rights to develop power on the upper Skagit River. They announced their plans for the construction of five dams in 1908, but took no action to implement these plans. The Puget Sound Traction, Power and Light Company, a subsidiary of the Boston firms of Stone and Webster, purchased the development rights in 1912. However, through a failure to comply with the permit requirements, P.S.T.P.L.C. forfeited the development rights. Finally, the development rights were transferred to John D. Ross of Seattle City Light (Cameron 1977).

Seattle City Light was immediately faced with an obstacle: the site was virtually inaccessible. They began and completed the construction of a 22 mile railroad from Rockport to Diablo. In 1918, Seattle appropriated five million dollars to build the first power site, and by 1920, over 500 men were employed on the Skagit (Peterson 1980). The Gorge Dam at Newhalem was completed in 1921, and by 1924, the powerhouse was finished and in operation. The second dam to be constructed was Diablo; work began in 1927 and was completed in 1930. At the time it was constructed, Diablo Dam was the highest in the world. Several million feet of timber as well as the Ranger Station at Reflector Bar were flooded when the reservoir was filled. The timber was purchased by City Light for $3.00 per thousand board feet, based on the Forest Service cruise. Unfortunately, there was not a market for the timber, and City Light was forced to burn it (Cameron 1977:16; McGuire n.d.).

The next job was to build Ross Dam. Originally called the Ruby Creek Dam, Ross was completed in 1949, 13 years after construction began (Figure 4.36). It was in full operation by 1956, with four 90,000 kilowatt generators at work. Plans for a fourth dam, the Copper Creek project, were postponed due to potential harm to fish, and subsequently attention was shifted to the Gorge High Dam, which was completed in 1961. This represented the last major dam construction on the Skagit River. Recent plans to raise Ross Dam have finally been laid to rest, after a long debate.

The hydroelectric development of the upper Skagit River has made a significant impact on the Forest, mostly in the way of transportation improvements. Seattle City Light provided rail and water access to several thousand acres for timber harvest and recreation, and eventually paved the way for construction of the North Cascades Highway (Cameron 1977; McGuire n.d.).

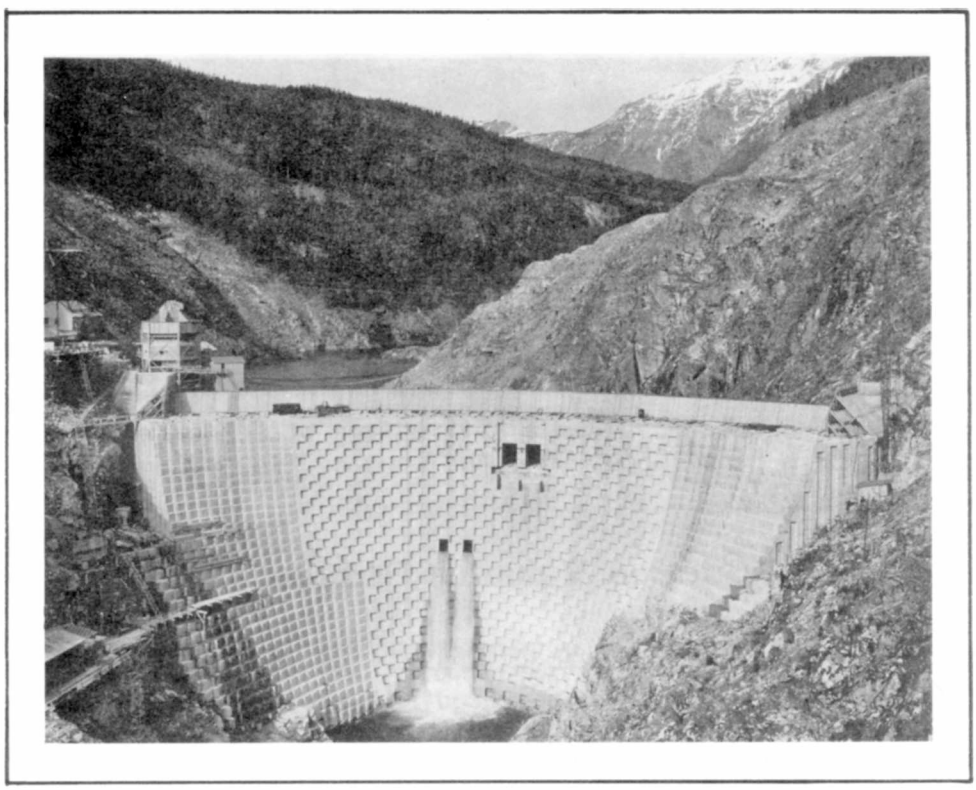


Figure 4.36 Ross Dam nearing completion, approximately 1949 (Seattle Municipal Light and Power System photograph).

Nooksack Falls Hydroelectric Project

The development of Nooksack Falls on the upper North Fork of the Nooksack River has a complex and somewhat shady history. The land on which the hydroelectric development was built was originally patented, beginning around 1902, as several lode mining claims. Ranger C. C. McGuire recalled the story several years later with a somewhat sarcastic tone:

> A patent was secured to the claim for mining purposes. Assessment work was done, but by fortunate chance the tunnel driven in search for gold was just in the right place to lay pipe from the top of the falls to the later location of the power house (n.d.).

More mining claims were filed at a later date, extending the holdings up the river, and work began on construction of the power plant. Puget Traction Company, a subsidiary of Stone and Webster, the Boston investment firm first interested in the Skagit River, acquired the title after it had been transferred several times. There has always been a question in the minds of some, as to whether Stone and Webster were involved in the scheme from the beginning in an effort to develop power at the site. However, when the claim was contested, fraudulent involvement on the part of that company could not be proven. The company name changed to Puget Power and Light in 1930, after it became primarily a power producer (Schmierer 1983:34).

Materials for the construction of the power site were hauled in by horses and steam donkeys from the Bellingham Bay and British Columbia Railroad terminus in Glacier. The power project was placed in operation in 1906. The mines were closed in 1916, but the community of Excelsior, that had been established for the construction and maintenance employees, remained. The town sported three houses, a school with one teacher (paid by the company), and a boarding house (it was called a "hotel," but was not open to the public). These were occupied until World War II; the buildings were finally removed in 1972. In October of 1979, the plant was placed on automatic operation. The turbines that once provided all the power to Whatcom County now carry only the town of Glacier. It is the second oldest and the smallest hydroelectric generating plant in Washington (DeBorde 1981:46; Schmierer 1983).

Stone and Webster also developed the power site of the Baker River, first with Lake Shannon in 1931, and then with the Upper Baker Dam in 1959 (Cameron 1977:16).

Cedar River Watershed

When the "Great Seattle Fire" of June 6, 1889, destroyed the business district of Seattle, the failure of a water supply was the impetus to change from a private to a city-owned water system. As early as 1880, the Cedar River had been suggested as the likely location for such a development (McWilliams 1955:53). The first land purchase under the ordinance that authorized the Cedar River Gravity Supply System was made on July 27, 1898, at what was to be the future site of the Landsburg intake. By this time, much of the land in that area had already been logged. For lands still in timber, the city followed a policy of acquiring the land only, with the timber and right to log it being retained by the original owners. This initiated the policy of land acquisition for the Cedar River Watershed that is still in force, with complete ownership of the watershed by the city as the final objective.

The City requested temporary withdrawal from entry, sale, settlement or other disposal of all lands within the watershed belonging to the U.S. Government. This request was enacted into law in 1911. The Act provided for the City to secure patent to these Federal lands upon payment of the appraised value of the timber plus $1.25 per acre for the land. The City then went to work establishing the boundaries of the watershed, and gained the continuous ownership of the boundary lands. However, it was soon realized that the cost of obtaining title to the entire watershed was prohibitive, and plans to acquire the rest of the land through this process were dropped.

June 20, 1945 was a "red letter date" for the Water Department (McWilliams 1955). On that day, Ordinance 74105 was passed providing for a logging agreement between the City of Seattle and several local logging companies. It contained a clause for the companies logging within the watershed to transfer land outside the watershed to the City. Seattle could then offer that land to the Federal Government for trade for lands of equal value within the watershed. The exchange between the City of Seattle and the Forest Service is a long-term process, and the Forest Service still owns over a township of the even numbered sections in the upper watershed.

The Green River Watershed

In 1910, the City of Tacoma obtained authorization to construct a gravity water supply system within the Green River watershed. To ensure water quality, the City entered into a cooperative agreement with the Department of Agriculture in 1914, designed to limit detrimental uses of the land within the watershed. This agreement was in effect until 1964 when it was determined to be in conflict with the Multiple Use and Sustained Yield Act of 1960. Since then, the City of Tacoma has actively consolidated their lands by acquiring privately held tracts within the watershed (Krafft 1985).

Recreation - Managing the Land for All the People

Recreation became an increasingly popular use of National Forests when the railroads and roads first began to provide for the prerequisite transportation. Organized groups such as the Mountaineers, Scouts and Y.M.C.A. encouraged people to join hiking, climbing and camping outings, and individuals enjoyed the fishing, hunting and berry picking opportunities. Denny Creek on the North Bend District, the first campground established on the Snoqualmie, opened in 1917 (Figure 4.37), followed by the Dalles and Silver Springs on the White River District and Troublesome Creek on the Skykomish District, in 1924. A 1917 recreation report for the Snoqualmie National Forest provides an up-to-date account of the growing interest in recreation:

> In the Darrington District the largest number of campers are found along the main Sauk trail between Clear Creek and Barlow Pass. The mouth of Clear Creek is the most popular camping grounds as it can be reached by automobile. In the Silverton District a large number of people camp along the South Fork of the Stillaguamish River between Robe and Monte Cristo. This valley is reached by the Hartford and Eastern Railroad which runs from Hartford on the Northern Pacific R.R. to Monte Cristo and during the summer is operated east of Robe primarily for tourists, campers, fishermen and hunters. This railroad will undoubtedly build up a larger traffic in the future and the Service may get some cooperation from it, in building short stretches of scenic trails, improving camping grounds, etc. In this same ranger district the Sultan Basin is a popular camping ground and is reached by wagon road and trail leading up the Sultan River from Sultan, Wash.

In the Skykomish district there are three resorts that cater to tourists, one at Index, one at Berlin and one at Scenic. The hotel at Scenic is the only one within the Forest boundary. A large number of people camp in this district, the principal camping grounds being near Index and Berlin. Camping grounds should be developed at Lake Dorothy, Surprise Creek, Soda Springs and Soda Hot Springs. The Great Northern makes special tourist rates to different points in this district from Seattle and Everett, which attracts large numbers of campers during the summer. The Scenic Highway, now building, which will be completed within a few years, will open the district to auto travel and will bring large numbers of people into the district during the camping season.

The Lester Ranger District is at present the most important district from a recreational standpoint due to its accessibility. The Chicago, Milwaukee and Puget Sound, and the Northern Pacific Railways, and the Sunset Highway run through this district. The proposed camp ground development at Denny Creek is on the Sunset Highway. Large numbers of people camp along this road within the Forest (Snoqualmie National Forest 1917).



Figure 4.37 by 1918, Denny Creek Campground, on the Lester District of the Snoqualmie National Forest, was a popular stop-over along the Sunset Highway

Long before the Snoqualmie offered developed campgrounds, the Kloeber Hot Springs was attracting large numbers of people to the Green River valley. The Kloeber Hotel was built around 1899, and quickly became a favorite destination for the wealthier families of Seattle and Tacoma. It was a large, elaborate, Queen Anne style building, on land owned by the Northern Pacific. The hotel offered golf, tennis, billiards, pool and a bowling alley (Sutton 1978). Hot mineral water (a comfortable 132°) was piped across a bridge from the springs on the north side of the river to the hotel on the south side. A tavern adjacent to the hotel was noted for its figure of a dancing girl carved in a tree stump. The hotel burned down in 1910, but the carved figure was still visible in the 1950s (Carter 1978).

A hot springs about 28 miles from North Bend by trail was another favorite recreation location. The hot springs were apparently popular with prospectors in the area, who were the first to quarry out a bathtub (Seattle Times 1966). It was not until sometime later that Bill Morrow developed Goldmeyer Hot Springs into a recreation resort. In 1935, there were four springs at the resort, which included a main lodge and some cabins. The resort was powered by an eight foot pelton wheel. Wooden pipes were built and piped with hot mineral water that ranged from 114° to 127° Fahrenheit (Seattle Times 1966).

Mt. Baker Lodge

Two major resorts were built on the Mt. Baker Forest and opened in the 1920s - the Mt. Baker Lodge on the Glacier District, and Big Four Inn on the Silverton District. The Mt. Baker Development Company began its first tourist concession, using tents, in the summer of 1923. In 1924, a dining hall and bunkhouse, known as Heather Inn, were built. At Shuksan, several cabins (Figure 4.38) and an inn to accommodate 50 people were built (Miles 1984). By 1925, the plans were expanded to include a hotel, and on July 14, 1927, the Mt. Baker Lodge opened. It was a large and lavish building:

> L-shaped...two hundred and ten feet long and from fifty to one hundred and thirty feet wide with one hundred rooms and a huge dining hall that could seat three hundred. An observation tower rose seventy feet at one end; as many as fifty people could stand at the top and gaze around at the scenery (Miles 1984:140).

In 1927, an estimated 11,700 guests visited the Lodge. It quickly gained a reputation as a vacation spot, and an annex was built to accommodate still more guests (Schmierer 1983). However, the lodge only lasted five years; on August 15, 1931, a fire destroyed all but one wing. The annex, cabins and Heather Inn survived and continued to operate until 1943, when lack of business forced its closure. An addition to the Annex was built in 1939, and the resort operations moved into that building, which also became known as the Mt. Baker Lodge. It was a smaller, much less elaborate building with 22 rooms and a small lobby and coffee shop on the main floor (Heller 1980). During the 1930s, the resort made its mark in history as the site of two Hollywood productions: "The Call of the Wild" in 1935, starring Clark Gable, Jack Oakie and Loretta Young; and "The Barrier" in 1937, starring Jean Parker, Jimmy Ellison and Leo Carillo (Figure 4.41). For "The Barrier," the lodge was "remodeled" as Starks Saloon, and the Annex became the Flambeau Trading Post (Figure 4.42). (The Forest became famous again in 1979 when the "docu-drama," "High Ice," was filmed on Whitehorse Mountain outside of Darrington.)

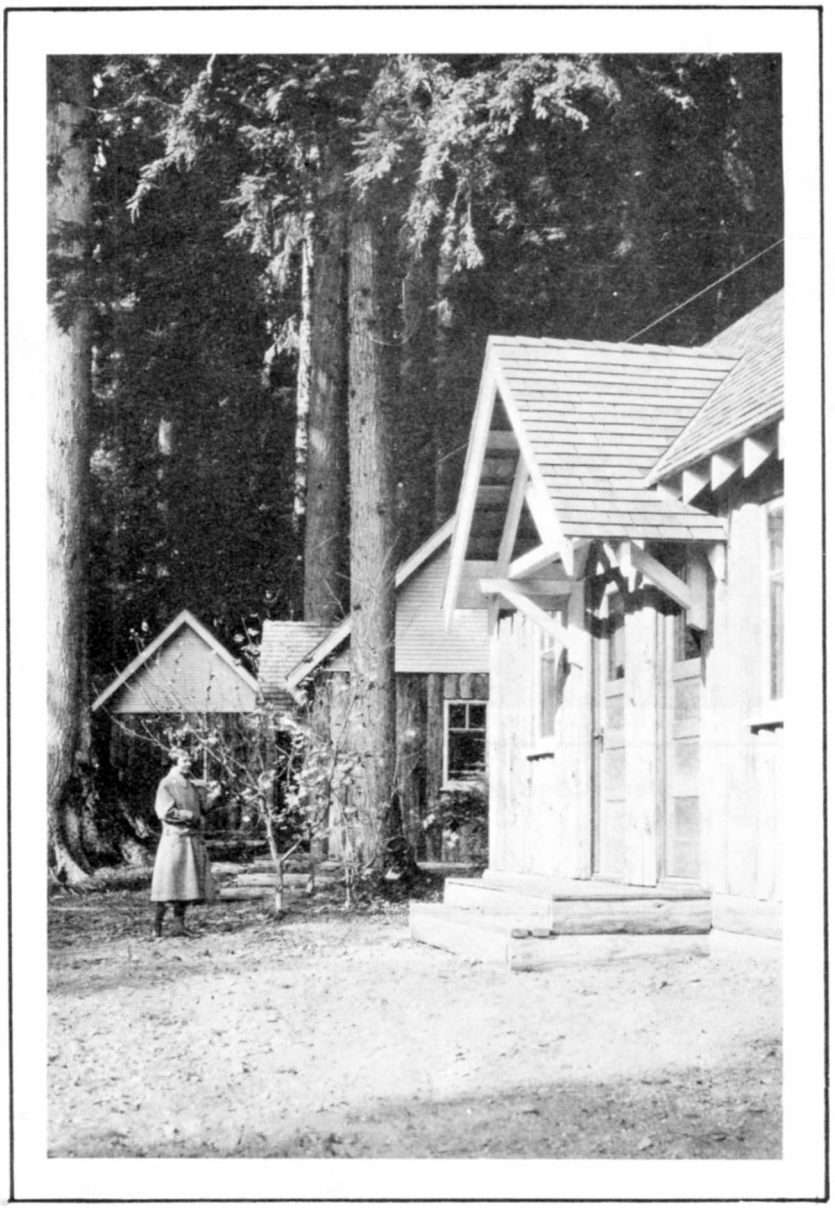


Figure 4.38 In 1925, several two-room cabins were built as Shuksan Woods by the Mt. Baker Development Company (photograph by Bert Huntoon).

After World War II, the Larabee Real Estate Company purchased the lodge, and operated it until 1952 when it was almost forced to close again. Local businesses came to the rescue. The struggling enterprise was bought by the newly formed Mt. Baker Recreation Company. The addition of ski lifts to attract more visitors was a timely and successful investment. The second lodge burned to the ground on August 21, 1984. Within a year, new employees quarters were constructed in its place. The Mt. Baker Ski area continued to expand after the first chairlift was installed in 1954 (Cameron 1977:18). Today, there are six chairlifts and four rope tows, which attract many visitors from Washington and British Columbia.

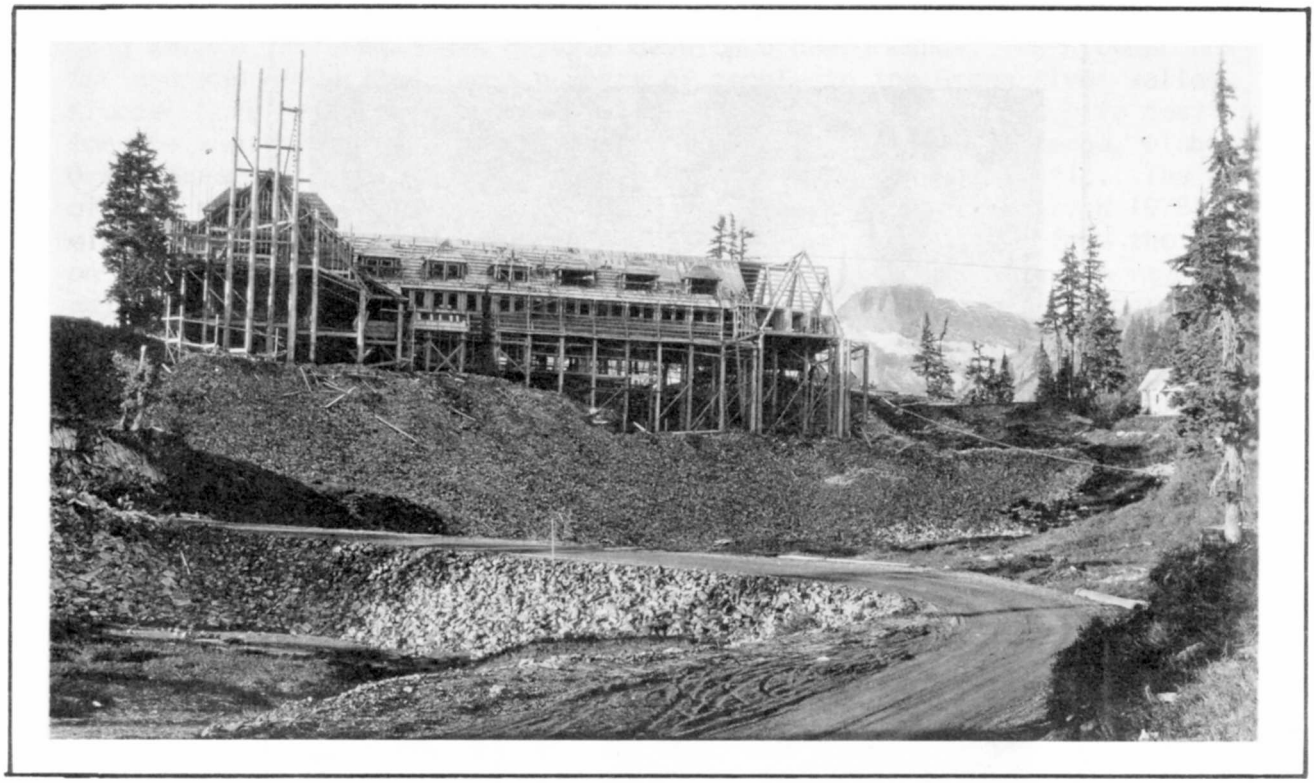


Figure 4.39 The Mt. Baker Lodge under construction, approximately 1926 (photograph by Bert Huntoon).

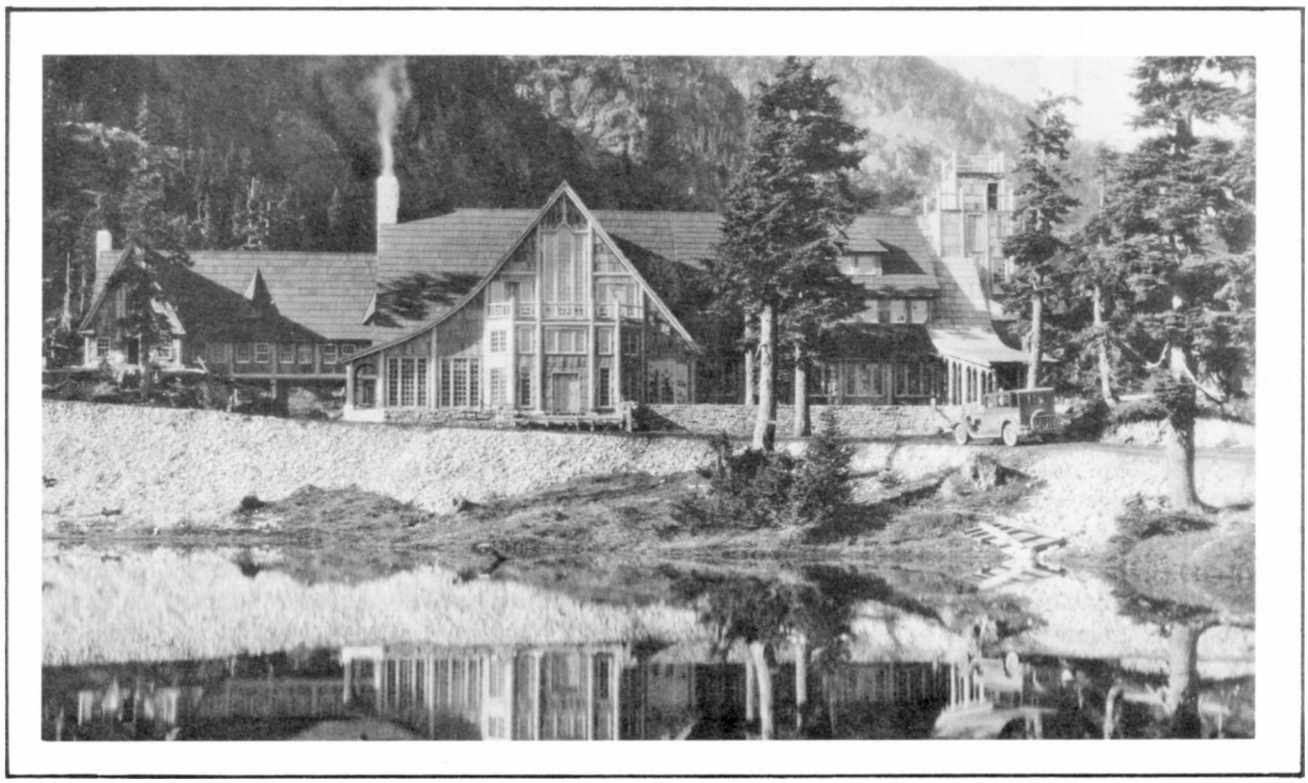


Figure 4.40 When completed, the Mt. Baker Lodge was a large and elaborate building, with 100 rooms and a huge dining hall (photograph by Bert Huntoon, 1927).

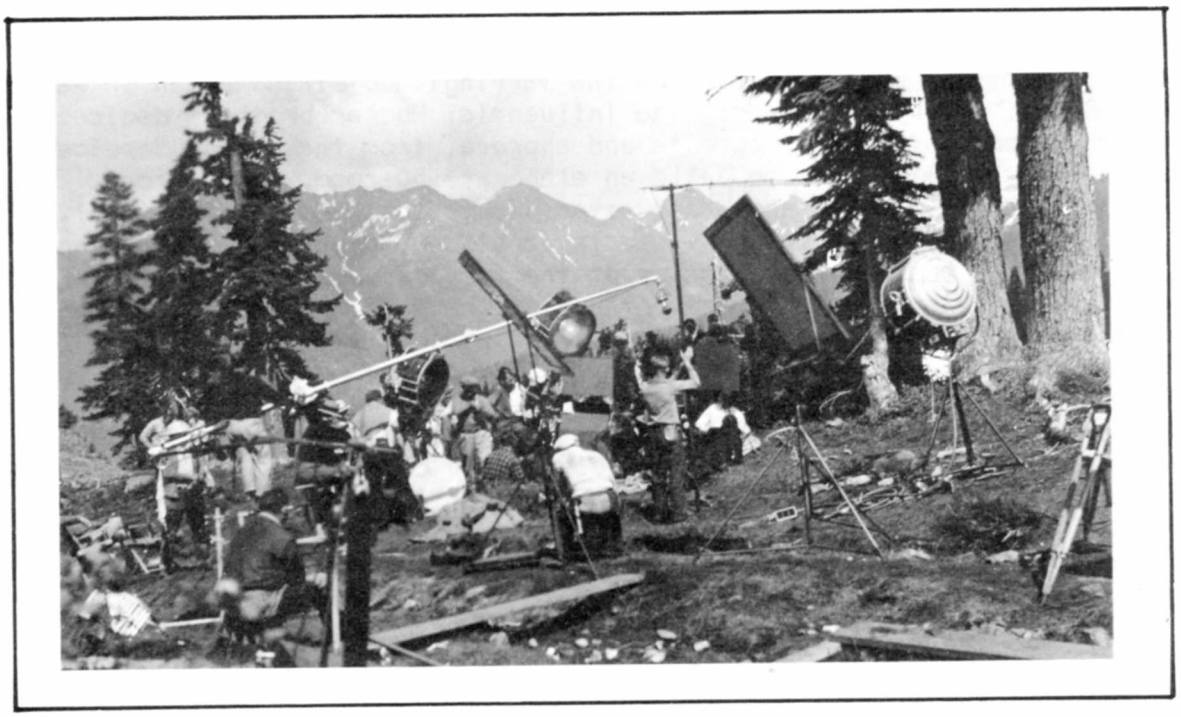


Figure 4.41 The movie "The Barrier" was filmed at the Mt. Baker Resort in 1937 (photograph by R. L. Fromme).

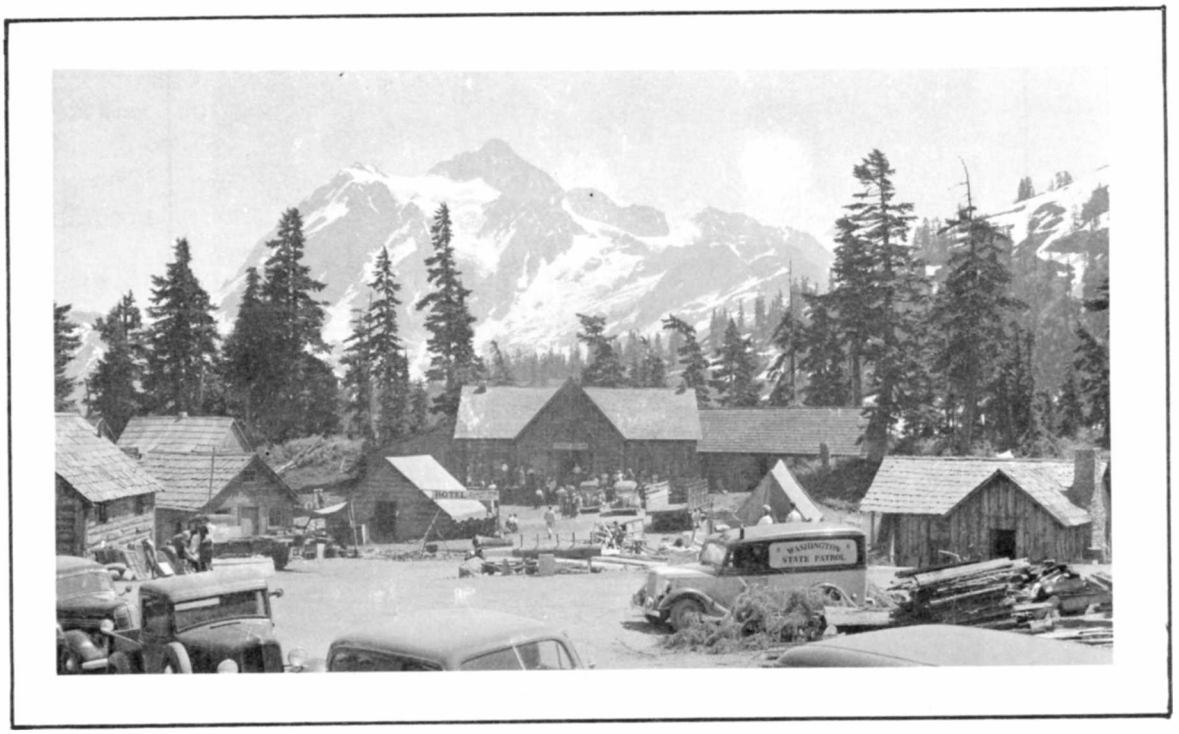


Figure 4.42 For the filming of "The Barrier," Heather Inn was remodeled as "Stark's Saloon," and several other elaborate scenes were created (photograph by R. L. Fromme).

Big Four Inn

Construction of the Big Four Hotel on the Darrington District began in May of 1920 by Bethel and Wyatt Rucker. The influential Rucker brothers decided to forego the inconveniences of permits and approval from the Forest Service, and went ahead with their plans to build an elaborate 50-room, three-story structure with a two-story annex and seven double cottages (Figure 4.43). They also added the amenities of tennis courts, a nine-hole golf course and an artificial lake, on the grassy meadow at the foot of Big Four Mountain. The only access to this picturesque resort was by the Hartford and Eastern Railway, but the inn flourished (Figure 4.44). Six thousand visitors were counted in 1924 (Field 1950). The inn was sold to the Puget Sound Pulp and Timber Company (later a part of the Scott Paper Company) in 1929, and in the face of the plummeting economy was resold several times. Investors made many unsuccessful attempts to run the resort. The U.S. Coast Guard occupied the site as a replacement center during World War II. In 1949, just as plans were being make to develop the site as a park, the inn burned to the ground, leaving the meadow to nature and an industrious colony of beavers (Cameron 1977:19).

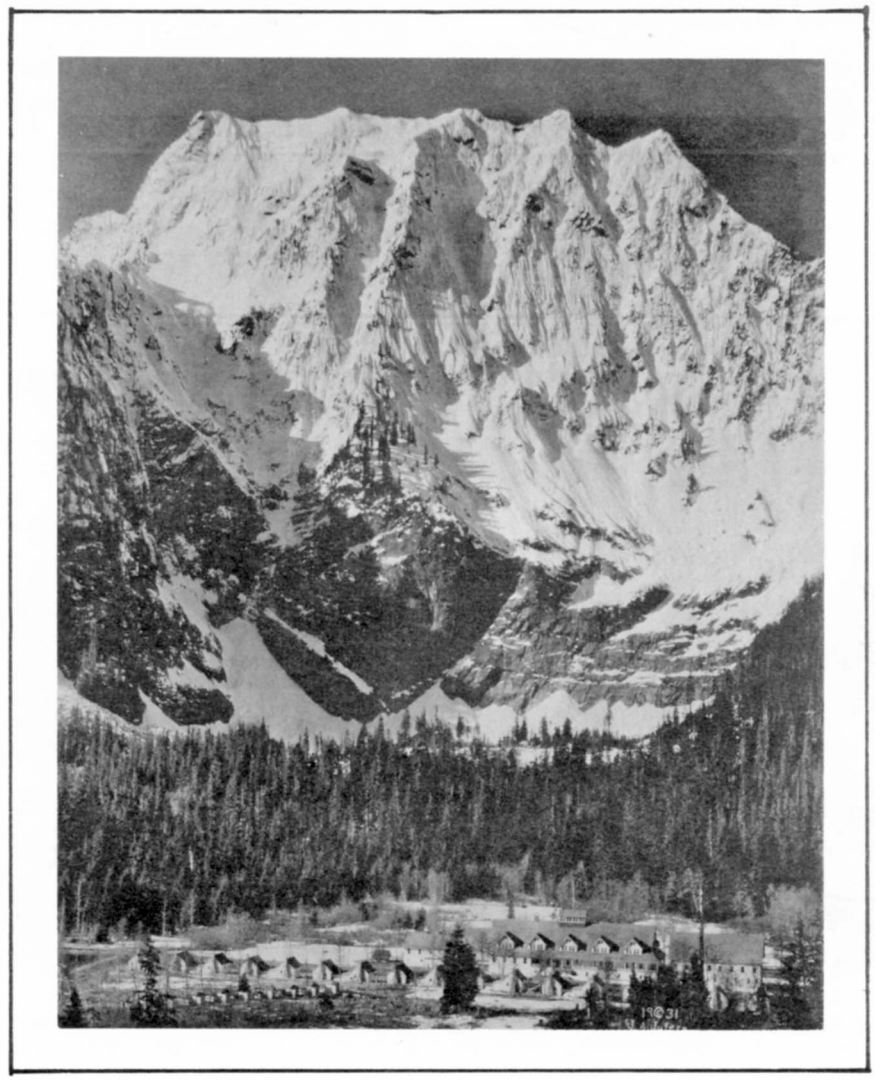


Figure 4.43 The Big Four Inn was built by the Rucker brothers in the early 1920s. It operated successfully until the Depression (photograph by J. A. Juleen, 1931).

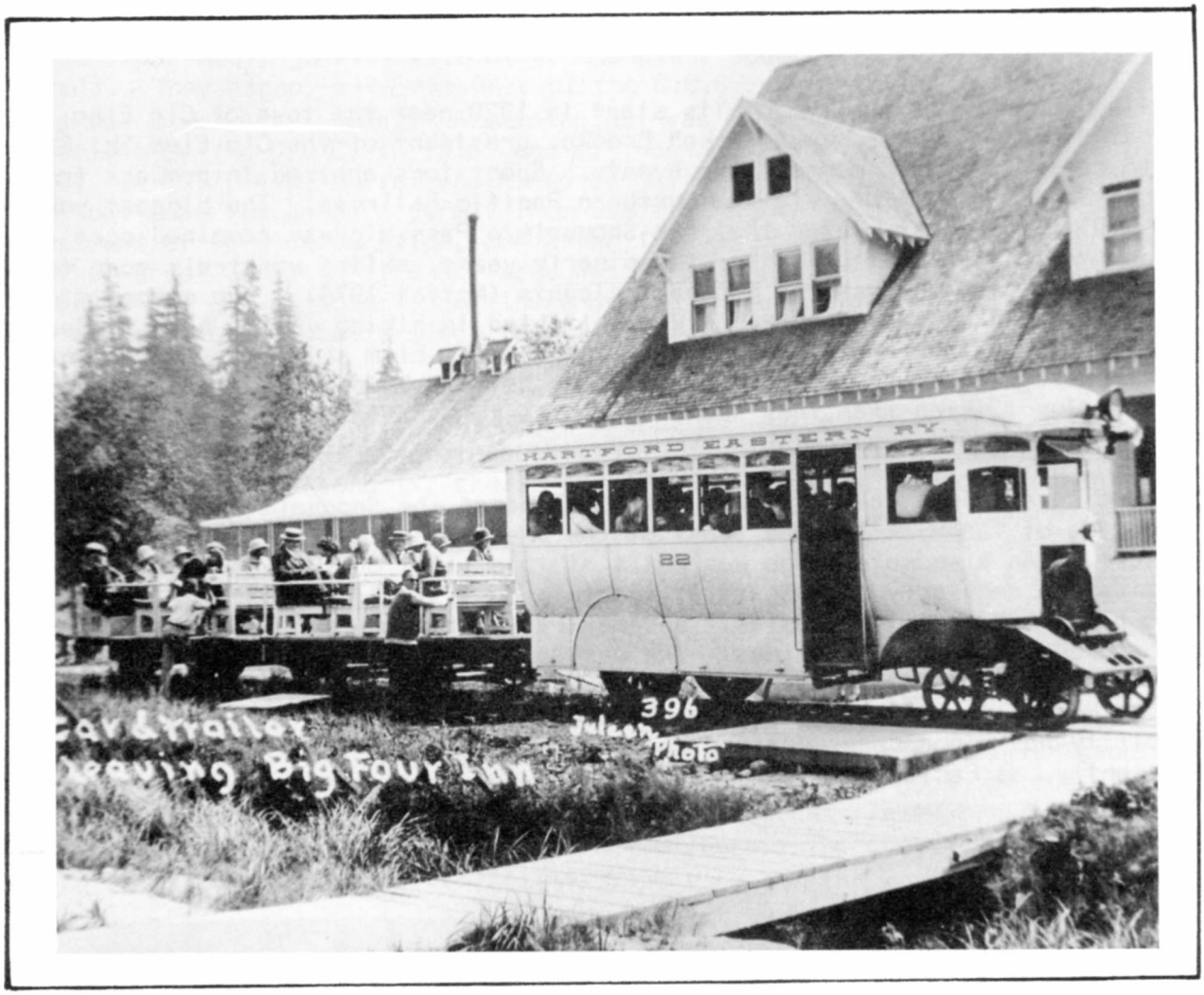


Figure 4.44 The Hartford and Eastern Railroad, originally the Monte Cristo Railroad, provided the only transportation to this exclusive resort.

Winter Sports

Snoqualmie Pass

The development of Snoqualmie Pass as a winter recreation area has had some unsteady moments in history, but today the Pass supports four developed ski areas and several small private facilities which draw people from both sides of the Cascades.

In 1913, the Mountaineers chose a site for their lodge; suitable for snowshoeing, snowballing and skiing:

> ...a site was located five hundred feet above the railroad tracks, one mile and a half from Rockdale, and two miles and a half from the Snoqualmie Pass... The Snoqualmie Pass road, just completed, is easily reached by a good horse trail (Bryant 1914:131).

A lodge was constructed of fir logs and cedar shakes and was known as "The Lodge." It burned down in 1944, and was replaced by the present Mountaineers Lodge in 1948 (Prater 1981:132). The Mountaineers built the Meany Lodge, near Martin at the east portal of the Stampede Tunnel, in 1928. The Northern Pacific shuttled skiers and climbers to Meany during its regular stop at Martin.

Skiing in the area really got its start in 1920 near the town of Cle Elum (Prater 1981). There, John "Syke" Bresko, president of the Cle Elum Ski Club, held races and other competitive events. Spectators arrived in numbers from Puget Sound and Yakima, via the Northern Pacific Railroad. The biggest year was 1931, the first winter that the Snoqualmie Pass Highway remained open all year (Prater 1981:131). During these early years, skiing was truly more for the spectators and less for the participants (Moffat 1978). The competitions were attended by many non-skiers who delighted in hiking up the hill to Beaver Lake to watch the "crazy Norwegians." At the Cle Elum ski jump, the Northern Pacific provided a tramway through a mine shaft to bring the spectators closer to the jump. Even then they had to walk twenty minutes to the hill (Prater 1981:130).

In the late 1930s, the Milwaukee Railroad opened the Snoqualmie Ski Bowl at the location of the Hyak Station, east of the present day Pacific West Mountain Resort. An elaborate lodge was built at this location (Figure 4.45). Ski trains ran regularly from Seattle; the trip cost $1.77, round trip, and took two hours. Many ski enthusiasts became involved in the ski schools at Hyak sponsored by the Seattle Times. The war years closed it down, but it opened for a short time afterwards under the name of the Milwaukee Ski Bowl. The lodge burned in 1949 and Milwaukee abandoned the project. This recreation facility has since been operated as the Hyak Ski Area, Mount Hyak, and presently, as Pacific West Mountain Resort.



Figure 4.45 The Snoqualmie Ski Bowl Lodge, owned and operated by the Milwaukie Railroad, 1939.

Development at the Snoqualmie Summit ski area began in 1933, when the Seattle Parks Department, jointly with other agencies, acquired a Forest Service permit. They began, with the help of the C.C.C., by clearing forty acres of land for a ski development. A warming hut was constructed, which received some additions by the C.C.C. in 1936, and further additions were made in 1944 and 1960. In 1937, Webb Moffat was hired by Ski Lifts, Incorporated, to operate an 800-foot rope tow under a permit from Seattle Parks. Mr. Moffat later became president of this corporation, and after 1940 he operated directly under permit to the Forest Service. The ski area was so popular that Puget Sound residents pooled their gas rations to get there during the war years. Snoqualmie Summit has operated continuously since that time.

Following World War II, there was a boom in winter sports activities in the Washington Cascades. Ski Acres began operation in the winter of 1948-49. It was a private development on land obtained from the Northern Pacific, just east of the summit. Ski schools, chairs and tows were gradually added, reaching a current total of seven chairlifts and five rope tows. The day use lodge was built the first year, and there have been a number of subsequent additions. Alpental was the late comer to the Pass, opening in 1967 (Moffat 1978).

Crystal Mountain

A group of people became interested in the development of the Silver Creek drainage on the White River District in 1949, and presented a proposal to the Forest Service in 1955. In July of 1958, the Crystal Mountain winter sports area was created. After a road was constructed, the work began on the recreation facilities, and the area opened for business in 1962. The chapel and the Crystal Inn were added within a few years. The area has continued to expand, now operating nine chairlifts.

Stevens Pass

On September 1, 1966, the administration of the Stevens Pass Ski Area was transferred from the Wenatchee National Forest to the Snoqualmie (Katzenberger and Katzenberger n.d.). However, the interest in the development of winter sports in that area goes back to the middle 1930s. In 1937, Don Adams and Bruce Kehr opened an 800-foot rope tow on the lower slopes of Big Chief Mountain. They charged $1.00 for all-day use, or eight rides for a quarter. The tow was powered by a Ford V-8 engine.

There was not even a road from the west side at the time. The east side customers, primarily the Wenatchee Ski Club, just did not bring in enough business to offset the costs. The first season, the total sales were about $80. But the word soon spread that skiers from Seattle could drive as far as Scenic, and then for twelve cents, catch the train through the tunnel to Berne. A local restaurant owner bought a bus to transport the skiers who came in on the train. During the winter of 1938-39, the weekend use escalated to 500 persons per day, and by 1939-40 the use figures had doubled. Before the ski area opened, the Forest Service had a warming hut at the pass, and in 1938, the C.C.C. constructed the first Forest Service lodge (Katzenberger and Katzenberger n.d.).

The arrival of World War II hastened completion of a road to connect the east and west sides of the Cascades through Stevens Pass. The ski area survived the war years; in fact, during the war, the Army and Navy ran recreation busses to the pass. Ski enthusiasts saw the addition of more and more rope tows until, at one time, there were 22 in operation. Chairlifts were added in 1947, 1956,

1960, 1964, 1968, 1973 and 1979 (two), with several lift extensions and other improvements (Katzenberger and Katzenberger n.d.). The fee increased at least as many times, from about $3.50 a day in the late 1950s to the current $18.00 per day during the peak of the season.

Post War to Present

By the end of the 1960s, the Mt. Baker Forest had two ski areas: Mt. Baker on the Glacier District and Mt. Pilchuck on the Monte Cristo District. Mt. Pilchuck was poorly located for winter sports development, and it was closed in the middle 70s. The Snoqualmie National Forest had seven ski areas: Stevens Pass on Skykomish, four on the North Bend District at Snoqualmie Pass, Crystal Mountain on the White River District, and White Pass on the Tieton District. After the Mt. Baker and Snoqualmie Forests merged in 1974, administration of the Tieton District, along with the ski area, was transferred to the Wenatchee National Forest.

Economic Depression: 1933 - 1942

The Civilian Conservation Corps had a short by very visible impact on the National Forests. Congress voted it into existence on March 31, 1933, and for the next nine years the C.C.C. contributed enormously to the Mt. Baker and Snoqualmie Forests. The Corps consisted of young men, between the ages of 15 and 24, many of whom had not had any previous work experiences - let alone in the woods. The Army was to feed, clothe and house them; the Forest Service selected projects, supervised the work and administered the camps (McCullough 1970; Throop 1979). The enrollees received $30 per month for their labor.

On the Mt. Baker, camps were established on the Darrington (transferred to the Mt. Baker in October of 1933), Glacier and Skagit Districts:

> [1933] In April Camp Darrington F-15, CCC was established at the Darrington Ranger Station. In June Camp Glacier F-12 was established at Boulder Creek 5 miles west of Glacier and Skagit Camp F-13 was set up on Bacon Creek, Skagit District. Each Camp had a compliment of five Army officers and enlisted men, and 200 CCC enrollees, included 45 LEMS (Local Experienced Men) (Field 1950:104).

North Bend and Skykomish also had camps, and a camp was established on the White River District for one season (Figure 4.46).

The work done by the C.C.C., plus those in the N.I.R.A. (National Industrial Recovery Act), the E.R.A. (Emergency Relief Act) and other Depression-era programs and work projects, was the greatest boost in manpower the Forest Service has ever had. New administrative compounds were built at Monte Cristo, Glacier and Darrington. Fire control finally became a manageable job with the increased manpower: "The clear summer skies of the thirties were a pleasing contrast to the smoke obscured skies of the twenties" (McCullough 1970:97). Other work projects included construction and reconstruction of several lookouts, establishment of roads and trails, and reforestation projects. The Baker Lake fish hatchery and water system were restored under a coopererative



Figure 4.46 Mess call at the Carbon-White River C.C.C. camp, Company 1631, July 12, 1933 (photograph by C. J. Conover).

project with the C.C.C. and the U.S. Bureau of Fisheries. Many campgrounds were constructed. A summary of the accomplishments of Lester Camp (#1745) at Friday Creek on the North Bend District is typical:

> Roads from Martin via Stampede Pass to Lester and down to Baldi and from the forks near Friday Creek to the Greenwater via Twin Camps. Also from Twin Camps nearly to Green Pass via Pyramid and spurs to the west and north around Kelly Butte. This was probably the most important work done, making this country accessible by road for the first time. A small "side camp" at Twin Camps was built for the work near there... 56 miles of telephone line was built along the roads. Snags were felled on 30 miles of fire breaks around Lester, 24 bridges were built including one across Sunday Creek at the old N.P. Railway bridge piers. Three lookout houses were built at Humphrey, Meadow Mtn. and Stampede. 14 other buildings were constructed, including the fire warehouse on the lot leased from the N.P. at Lester... The company moved to Speelyi Creek on October 16, 1934 and the camp was abandoned (Conover 1942).

The N.I.R.A. program was involved in the same kinds of projects as the C.C.C., but personnel were selected from all age groups of the unemployed population (McCullough 1970). Each Ranger District had the full responsibility of administering its own program, and the Forest Service provided the tools, materials and supervision for the program. The N.I.R.A. was soon replaced by the E.R.A. (same as the Works Progress Administration - W.P.A.). The number of men in the program varied with the severity of the Depression. Nevan McCullough recalled as many as 75 men in the program at one time on the White River District, most of whom were single, unemployed loggers, well suited to the kinds of work the Forest needed:

> The E.R.A. program served us well. We made rustic campground tables and fireplaces in the Dalles and Silver Springs campgrounds, built pole telephone line from Silver Creek to Enumclaw and many other projects that served the forest and its users for many years (1970:97).

On December 7, 1941, the tides of the economy turned and everybody - men and women alike - went to work for a nation at war. The C.C.C. was officially terminated in 1942, and the men discharged, many of them into a different kind of service. The experience of the C.C.C.'s was one that remained with these men for many years. Roy Wehrman, the former company clerk for Co. 1631 on the White River District, later wrote:

> Forty six years later I returned
> And saw the giant firs that flanked the path
> And knew I had been right to come again.
> (St. Louis Post-Dispatch 1982)

Afterword

The intricacies of the history of the western Washington Cascades are woven with the historical development of Puget Sound as a population center, the history of Washington Territory and subsequent statehood in 1889, and with the growth of the nation. At the time that the Indian treaties were being negotiated in 1854, some of the native inhabitants of the upriver territory of the western Cascades had never seen a white man, and marveled at his odd clothes, the colorful materials, and the shiny coins and beads that he offered in trade. Hundreds of names and places that touched the National Forest in some way had a role in its history, and each creek, project, town and person has a complete story of its own. Moreover, the Forest Service has a complex and intriguing history that is only lightly addressed in this overview.

The history of the land that became the Mt. Baker-Snoqualmie National Forest begins some time in the 1800s when the first reported non-natives passed through. It could have been in 1814 when Alexander Ross crossed the mountains at Cascades Pass; or in the 1830s when men from Hudson's Bay travelled through Naches Pass to establish a link between their forts on the east and west sides. In 1854, the President and the Secretary of War in Washington, D.C., authorized the railroad surveys. This marked the true beginning of exploration in the Cascades. The earliest miners probably reached the area in the 1860s, which was late in time relative to the settlement of the nation, but very early in terms of the settlement of Washington Territory. Miners came by the hundreds and although the "rush" was short-lived, mining was and continues to be a significant factor in the development of the Forest. The arrival of the Northern Pacific railroad through the mountains at Stampede Pass, and subsequent lines and spurs, forever opened the Cascades to further mining, logging, recreation, transportation and hydrological development, all current uses of National Forest lands.

The establishment of the Forest Reserves in 1898 was met with much resistance at first. But, despite the initial response, the National Forests were definitely here to stay. We now have 88 years of legislation behind the administration of the Forests, and change is continuous.

In the early years, Rangers were chosen from a group of applicants for their varied outdoor skills, including some that were related to the science of Forestry and some that were not. The Ranger was held responsible for everything in his District, and was expected to handle anything that come up - whatever, wherever, whenever! He often spent his entire career on one or two Districts. The Rangers watched over the Forest, their first duty being to protect it from fire. But, as forestry became a multi-million dollar business, intensive management and professional skills were required. The Forest began a program to inventory the timber of each "working circle" to determine how much timber could be harvested without endangering future supplies - the first attempts to accurately determine the "annual allowable cut" for a sustained yield.

At the same time, the philosophy of administration was changing. During the 1950s, the Forest Service gradually evolved from a custodial role over the nation's timber resources to a managerial role of the many resources of the

National Forest system. The Multiple Use and Sustained Yield Act of June 12, 1960, declared that the National Forests are to be administered for outdoor recreation, range, timber, watershed and wildlife and fish purposes. It gave Congressional confirmation of the Forest Service policy of developing and administering renewable surface resources of the National Forests for multiple use and sustained yield of their several products and services. The Act stressed that consideration be given to relative values of resources in a particular area and declared that the establishment and maintenance of areas of wilderness was consistent with the purpose and provisions of the Act.

Public demands began to lean heavily toward total conservation. The creation of new parks and wilderness areas by law, rather than by administrative decision was urged. The Wilderness Act of September 3, 1964 provided for the establishment of a National Preservation System. The previously designated Glacier Peak Wilderness Area became part of that system the same year.

The establishment of some sort of recreation area in the North Cascades had long been a favorite topic of several organized conservation groups. The North Cascades Conservation Council, Mountaineers and Sierra Club, in concert with the National Park Service, campaigned for the creation of two new parks, one around Mt. Baker and another centered on Glacier Peak. A team was appointed by the Secretaries of Agriculture and Interior to study this proposal in 1963. The final outcome was the creation of the North Cascades National Park (excluding Mt. Baker), the Ross Lake National Recreation Area, the Pasayten Wilderness Area east of Ross Lake (encompassing the remainder of the Forest's designated North Cascades Primitive Area), and an enlarged Glacier Peak Wilderness still under Forest Service administration (Cameron 1977:39). The Park complex, consisting of 526,650 acres, was officially established on October 2, 1968.

The Mt. Baker Forest lost its largest district, the Skagit District, and portions of the Baker River and Glacier Districts, to the National Park Service. As a result, a consolidation of the Mt. Baker and Snoqualmie Forests was proposed in 1973. The study team, under the direction of Forest Supervisors Don R. Campbell (Snoqualmie) and Alan R. Duhnkrack (Mt. Baker) recommended that the remaining Mt. Baker Forest be consolidated with the three west side Snoqualmie Districts (Skykomish, North Bend and White River), and that the two east side districts (Naches and Tieton) be transferred to the Wenatchee National Forest (Cameron 1977:40). The Supervisor's Office for the new large Forest would be in Seattle. The reorganization was approved on November 6, 1973 and completed in 1974. Since then, seven new Wildernesses have been added to the Forest: Alpine Lakes, designated in 1976 and enlarged in 1983 and 1984 (145,928 acres); and Mt. Baker (117,528 acres), Noisy-Diobsud (14,133 acres), Boulder River (48,674 acres), Henry M. Jackson (75,431 acres), Clearwater (14,258 acres) and Norse Peak (15,430 acres), all designated in 1984 (U.S.F.S. Mt. Baker-Snoqualmie National Forest 1985:64). Portions of two other wildernesses - Paysayten and Goat Rocks - are within the legal boundaries of the Forest, but are administered by the Okanogan, Wenatchee and Gifford Pinchot National Forests.

As concern for the environment increased, the National Environmental Protection Act was passed in 1969, requiring the development of environmental impact statements for Federal actions significantly affecting the quality of the environment. The Forest Service became interested in a way to plan for the

future about the time the Forest and Rangeland Renewable Resources Act was introduced in 1974. This Act identifies the direction the Forest Service programs should take in order to accomplish some long range goals. The Resources Planning Act of 1974 directed the Forest Service to develop Forest Plans. The Act was amended in 1976 and became known as the National Forest Management Act. N.F.M.A. directs each National Forest to prepare, with the aid of interdisciplinary teams and public participation, an integrated, comprehensive land management plan to be revised at least every 15 years. The Mt. Baker-Snoqualmie Forest Plan will identify the capability and suitability of the Forest to produce resources, and project to what degree it will be able to meet the demands of society for those resources.

> In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people, and not for the temporary benefit of individuals or companies...and where conflicting interests must be reconciled the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.
>
> James Wilson
> Secretary of Agriculture
> February 1, 1905

Annotated Bibliograqhy

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1958 This was railroading. Superior, Seattle.

Primarily too general for specific research, this book does contain some information on the Bellingham Bay and British Columbia Railroad.

Adams, K.
1962 Logging railroads of the West. Superior Publishing, Seattle

This book lists all the logging railroads and gives mileage and general locations of track.

Adkinson, Burton Wilbur
1939 The historical geography of the Snohomish River valley. Unpublished M.A. thesis, University of Washington.

Emphasis is on settlement and industry in the lower valley, however, there is a useful section on logging practices and the historical progression and growth of the timber industry.

Allen, G.F.
1909 Report on lands adjacent to the boundary of the east part of the Rainier National Forest, to the District Forester, November. Copy on file, Mt. Baker-Snoqualmie National Forest historical files, Seattle.

A brief description of the Forest lands along the east border, by township. Contains information on roads, trails, timber stand and fire protection.

1913 L-Rainier Stations. Map and special report to District Forester, Dec. 31. Copy on file, Mt. Baker-Snoqualmie National Forest historical files, Seattle.

Briefly summarizes each District and gives the location of the headquarters. Describes in detail the withdrawals of administrative sites; their locations, acreage and improvements (if any). Invaluable primary source of Forest history.

American Lumberman
1913 The making of 150 million feet of fir, cedar and spruce lumber yearly by the Bloedel-Donovan Lumber Mills. Reprinted from the American Lumberman July 19.

Historical/economical report on how the Bloedel-Donovan Co. was flourishing. Most of the information is specific to the Bellingham Bay operations - the Skykomish Mill had not yet been acquired.

American Society of Civil Engineers
1931 Papers of the eight mile Cascade Tunnel - Great Northern Railway symposium.

See Kerr, D.J. (1931); Mears, Frederick (1931); and Baxter, J.C. (1931).

Anderson, Eva
1977 Rails across the Cascades. World Publishing, Wenatchee.

Stevens Pass and the Great Northern Railroad. Many short stories, anecdotes, etc., about the completion of the Great Northern line across Stevens Pass. Many of the accounts are not referenced.

Andreassen, Walt, Phil Doherty and Howard Gibson
1940 Report of supplementary cabin submitted to White River Ranger District, Nov 6. On file, Mt. Baker-Snoqualmie National Forest historical files, Seattle.

This report includes a description of the supplementary cabin (Forest Service shelter?) on Suntop Ridge. Includes details on construction.

Apex Gold Mining Company
1922 An honest-to-goodness Gold Mine, to say nothing of arsenic. Apex Gold Mining Company, Seattle.

An advertisement-pamphlet prepared by the AGMC. An interesting update of the Apex Mine, probably an over-optimistic report of the financial advantages of investment in the company.

Arnold, Richard
1855 Lieutenant Richard Arnold's Report on the Military Road from Wallah-Wallah to Steilacoom. House Executive Document No. 1, 34th Congress, 1st session.

Avery, Mary W.
1965 A history of the evergreen state. University of Washington Press, Seattle.

This is a general history of Washington State, but application to the Forest is limited. Sections on transportation and on the Indian wars provide good general background.

Bagley, Clarence B.
1929 History of King County, Washington. S.J. Clarke Publishing, Seattle.

King county - general. This treatise on the history of King county covers several subjects and contains a great deal of information; a good section on the Snoqualmie Pass area. It is, however, difficult to use because it is not indexed.

Baxter, J.C.
1931 Construction plans and methods. In Papers of the Eight Mile Tunnel - Great Northern Railway Symposium. American Society of Civil Engineers Part III: 218-268.

Great Northern Railroad - Stevens Pass. The symposium constitutes the final professional record of the construction of the 7.79-mile Cascade tunnel. This paper describes the construction plans and problems.

Bancroft, Hubert H.
The works of Hubert Howe Bancroft: Vol. 31, history of Washington, Idaho and Montana 1845-1889. The History Company, San Francisco.

This book is primarily too general, but has some information on the Indian Wars. Contains a segment on the attack on Fort Nisqually.

Bergoffen, William W.
1976 100 years of federal forestry. U.S.D.A. Forest Service Agriculture Information Bulletin No. 402. G.P.O., Washington D.C.

An entertaining pictorial. This book was compiled from the U.S.D.A Forest Service historical photograph archives and does not include a text.

Bedal, Jean (Fish)
n.d.a Glimpses of the past. Unpublished ms. in possession of author. Copy on file, Mt. Baker-Snoqualmie National Forest historical files, Seattle.

Contains many brief accounts of settlement in the Darrington area. Also contains some Monte Cristo mining information. Briefly discusses the building of the "Sauk River and Monte Cristo Pioneer Road."

n.d.b William N. Bennett. Unpublished ms. in possession of author. Copy on file, Mt. Baker-Snoqualmie National Forest historical files, Seattle.

Contains bits of homesteading and transportation information as well as information on Indian history. Quite a lot on mining. Generally, related to William Bennett, a homesteader in the Sauk Valley.

Betts, William J.
1964 The day the mountain was conquered. Seattle Post Intelligencer Pictorial Review, June 21.

This article summarizes a brief history of Mt. Rainier - the first ascent and early exploration.

Bjarke, Nils
n.d. Naches Pass Trail. Xerox ms., Yakima Valley Regional Library, Yakima.

This account of the history of Naches Pass is not very useful. Recommend more accurate and comprehensive reports be consulted.

Bloedel-Donovan
1944 Special use map of Bloedel-Donovan logging and milling facilities. Mt. Baker-Snoqualmie National Forest historical files, Seattle.

1913 The making of 150 million feet of cedar and spruce yearly. Reprinted from the American Lumberman July 19.

The history of the successes of the Bloedel-Donovan lumber company. Fairly broad in scope, little information specific to the actual on-the-ground operations in the Skykomish area.

Blonk, Hu
1975 The past of the pass. Wenatchee World Sunday Nov. 23, pg. 13.

Stevens Pass and the Great Northern Railroad. Short anecdotes about the towns along State Highway 2, between Leavenworth and Everett. A few questionable "facts."

Bohn, Dave and Rodolfo Petschek
1984 The locomotive portraits: half a century of negatives by Darius and Tabitha May Kinsey. Chronicle, San Francisco.

This is primarily a book of photographs, with limited text. Several photos are from Skagit, Nooksack, Sauk, Skykomish and Snohomish River logging operations.

Bonney W.P.
1921 Naming Stampede Pass. Washington Historical Quarterly October, 12(4):272-278.

Stampede Pass area. Address by W.P. Bonney of the Washington State Historical Society at the Farmers picnic in Enumclaw, Washington, on Saturday August 6, 1921.

1927 History of Pierce County, Washington. Pioneer Historical Publishing Company Chicago.

This treatise on the history of Pierce County focuses on Tacoma. This book was compiled primarily from newspaper articles and is presented in chronological order, but is not cross-indexed. Contains a lot of information but is difficult to follow.

Brockman, C. Frank
1937 A history of Mt. Rainier National Park. Mt. Rainier National Park Nature Notes 15(2):45-102.

Primarily focuses on Mt. Rainier, but some of the history is applicable to the southern part of the Forest. Scope includes early exploration and settlement, and historic ascents of the mountain. Includes a bibliography.

Brooks, Allan
1930 Early big-game conditions in the Mt. Baker District, Washington. Murrelet 11:65-67.

This article basically poses the question of why big game is so scarce in the Mt. Baker area by 1930. Some information on Indian use of the game resource. Interesting, but of limited usefulness.

Broughton, W.A.
1942 Inventory of Mineral Properties in Snohomish County, Washington. Division of Geology Report of Investigations No. 6, Olympia

Bruckart, John
1980 Memoirs of John, "Ray" Bruckart, Sr., edited by Joseph E. Elliot. Presented to the Forest Service posthumously by John Ray Bruckart, Jr., Mrs. Larry P. Pater and Mrs. Joseph E. Elliott - The children of Ray and Fay Bruckart. Mt. Baker-Snoqualmie National Forest, Seattle.

Bruckart wrote of his experiences in the Forest Service. While on the Snoqualmie National Forest, Bruckart was assigned to both the Skykomish and Darrington Ranger Districts. His memoirs are particularly detailed with regard to logging operations and timber management.

Bruseth, Nels

n.d. Papers from University of Washington manuscripts collection

These papers include bits & pieces on many developments: logging, mining, etc. in the Darrington area.

1943 Darrington: story of inception of white - man civilization at the portage. Special edition of the Arlington Times, August 19. In Dubor Scrapbook No. 101:16-19. University of Washington Library.

Darrington area. A brief overview includes views on settlement, railroads, homesteading, miners and logging.

Bryant, Sidney V.

1914 The lodge. The Mountaineer 7:85-87.

This article provides a description of the Mountaineers lodge at Snoqualmie Pass, with some background information regarding the logistics of locating the site and funding the project.

Buller, Richard

1938 Story of Last Soldier Boy mine tells of the first search for Cascade Pass. Concrete Herald August 25.

Cascade Pass/Cascade River mining. This newspaper article re-tells the popular story of the Lost Soldier Boy mine, the accuracy of which is not historically documented.

Burgstahler, Ruth

n.d. Index: a historical perspective. Private printing.

Skykomish area. This 50 page narrative specific to the town of Index; it does not apply to a larger area.

Cameron, David

1977 History - Mt. Baker-Snoqualmie National Forest. Draft ms. on file, Mt. Baker-Snoqualmie National Forest, Seattle.

This is a well researched and well documented history. It is specific to the Forest Service; Forest administration and management are emphasized. The information is presented in a chronological format by historic periods.

1979 The Silverton nursery: an early experiment in Pacific Northwestern reforestation. Journal of Forest History 23(3):122-129.

An excellent and informative article about the Silverton nursery on the old Silverton Ranger District, Snoqualmie National Forest. Cameron presents the information from both a local and regional perspective. Includes photographs and references.

Carithers, Ward
1942 Ward Carithers, Department of Conservation & Development, memorandum to Sheldon L. Glover, Supervisor, Division of Mines and Mining. Olympia, October 29.

A report on the Dutch Miller Mining Property; a very informative update.

Carter, Susan
1978 Archaeological reconnaissance - Mt. Baker-Snoqualmie group of the selected Alpine Lakes Wilderness Exchange Lands. Mt. Baker Snoqualmie National Forest, Seattle.

1984 Draft National Register of Historic Places Determination of Eligibility Statement for the Naches Pass Trail. Prepared by the Wenatchee National Forest, Wenatchee.

Casey, Jim
1980a. The Wellington disaster. Everett Herald Feb. 27, pg. 10A.

Stevens Pass and the Great Northern Railroad. The story of Wellington retold; first of two articles.

1980b. The Wellington disaster. Everett Herald Feb 29, pg. 70.

Stevens Pass and the Great Northern Railroad. The story of Wellington retold; second of two articles.

Chapple, Oliver
1980 The Wellington avalanche. Seattle Times Sunday Pictorial, Mar. 2.

Stevens Pass and the Great Northern Railroad. A pictorial article, repeating the story of the Wellington disaster. Good photographs.

Chicago, Milwaukee St. Paul and Pacific
n.d. Structures and buildings, coast division. Records of the Chicago Milwaukee, St. Paul and Pacific Railroad. Copy on file, Mt. Baker Snoqualmie National Forest historical files, Seattle.

Historic records of the C.M.St.P & P include lists of buildings, maintenance, supplies, correspondence, auditors records, etc.

1916 Letter from the Assistant engineer to J.F. Richards, Superintendant, June 14. Records of the Chicago, Milwaukee, St. Paul and Pacific Railroad, Notes on file, Mt. Baker-Snoqualmie National Forest historical files, Seattle.

Citizens Publishing
1906 North Bend, Washington, its history resources and possibilities. Citizen's Publishing Company, North Bend.

Clark, Donald H.
1949a. Letter to Phil Brandner, Supervisor of the Mt. Baker Forest. Mt. Baker-Snoqualmie National Forest Historical files, Seattle.

1949b. Eighteen men & a horse. Metropolitan Press, Seattle.

The history of the Bloedel-Donovan Lumber Company. The book covers much more than what is applicable to the Mt. Baker-Snoqualmie National Forest, and is very useful for general history and historical perspective.

Clark, E.T.
1925 Map: operations of the Sauk R. Lumber Co. in sections 19, 20, 29 30 and 32 T31N R11E W.M. Map Center, University of Washington Library, Seattle.

Clark, Irving
1913 The Mountaineer lodge. The Mountaineer 6:85.

This article is an announcement of the plans of the mountaineers to build a lodge at Snoqualmie Pass.

Clevinger, Woodrow R.
1940 The Southern Appalachian highlanders in western Washington. Unpublished M.A. thesis, University of Washington.

This is an excellent source of information on how some of the mountain communities of the western Cascades were settled. Specific references are made to Darrington

1942 Southern Appalachian highlanders in western Washington. Pacific Northwest Quarterly, January.

An edited and shortened version of his M.A. thesis.

1955 The western Washington Cascades: a study of migration & mountain settlement. Ph.D. dissertation, University of Washington, Seattle.

An excellent study of settlement.

Cliff, Edward P.
1971 Letter to Regional Foresters, Directors and Area Directors regarding the Wilson-Pinchot Letter: 1680 Forest Service History April 28, 1971. On file, Mt. Baker-Snoqualmie National Forest, Seattle.

The Coast
1902 Mt. Baker mines The Coast March 3:51

An optimistic report about the richness of the Mt. Baker Mines.

1907 Mining in Whatcom County. The Coast September, 14:199-201.

An informative update of the mining in the County in 1907.

1908a Minor towns of Snohomish County. The Coast November, pg. 338-339.

Describes briefly the small towns, including mining towns of Galena, Gold Bar, Monte Cristo, etc.

1908b Lumbering industry, Snohomish County. The Coast November, pg. 290-292.

A brief article about the role of logging in the development and settlement of Snohomish County.

Coleman, Edmund T.
1932 Puget Sound, and the Northern Pacific Railroad. Reprinted in The Washington Historical Quarterly 23:243-260.

Originally written around 1875, this article describes Coleman's visit to examine the Cascade Mountain passes. Particularly applicable to Snoqualmie & Naches Pass. Little about the railroad.

Collison, Marvin K.
n.d. An investment in optimism: the formation of the Bellingham Securities Syndicate. In Pacific Northwest Themes, J.W. Scott, editor.

All aspects of business of the Bellingham Securities Syndicate, with information on Bellingham Bay & British Columbia Railroad.

Concrete Herald
1951 Fiftieth Anniversary Edition 1901-1951. Concrete Herald June 21, Concrete.

This newspaper provides an overview of 50 years of settlement and development on the upper Skagit. However, the information is general. This newspaper should not be used as a primary source.

Connelly, Dolly
1964 Mighty Joe Morovits: real-life Bunyan. The Mountaineer 57(4):75-83.

Stories of Joe Morovits, an early settler, miner, mountaineer and climber in the Mt. Baker area. Article gives a romantic account of this local personality.

Conover, C.J.
1939 Goldmeyer fire: supplemental report, Snoqualmie National Forest, October 9. Mt. Baker-Snoqualmie National Forest historical files, Seattle.

North Bend area. This is a summary of the cause and damage of the Goldmeyer fire, started August 17, 1939. The report includes photographs, which show the old logging railroad grade & a wood burning steam donkey.

1942 Memorandum - Snoqualmie historical information on the Lester CCC Camp F-23, July 30. Mt. Baker-Snoqualmie National Forest historical files, Seattle.

This memo, written for the historical files, has specific details about the Lester CCC Camp.

1947 When cattle walked across Snoqualmie Pass. Seattle Times Nov 13.

Conover recounts the use of Snoqualmie Pass from about 1869 to 1884, when the railroad took over the bulk of the cross-Cascade traffic. Also contains a few paragraphs on the men who were involved in the cattle-drive business.

1949 Building the road across Snoqualmie Pass. Seattle Times July 9.

A history article, chronicles the use of Snoqualmie Pass.

1961 Early Seattleites campaigned for mountain road. Seattle Times Sunday, August 6.

History of the use of Snoqualmie Pass - the construction appropriations for the road etc. Reprinted from 1949 article in the Seattle Times.

Corliss, Margaret McKibben
1972 Fall City in the valley of the moon. Margaret McKibben Corliss, Fall City, Washington.

Snoqualmie Valley, North Bend area. This is primarily a history of the town of Fall City written by a native of Fall City, although some of the information has broader application. It is most useful for biographical information of the early personalities and families of the valley.

Cox, Thomas R.
1974 Mills to markets: a history of the Pacific coast lumber industry to 1900. University of Washinton Press, Seattle.

This history provides a regional perspective, but focuses largely on the larger companies of the Pacific coast, thier politic, etc.

Crawford, Clayton
1915 The lodge. The Mountaineer 8:93-94

This article reports a successful first year for the mountaineers lodge at Snoqualmie Pass.

Chriswell, H.C.
1964 Historical sketch: Mt. Baker-Snoqualmie National Forest. The Mountaineer 57(4):41-53.

A brief historical sketch - from the period of Indian use up to and including the Forest Service history. The author uses many excerpts from the memoirs of C.C. McGuire.

Cunningham, Ross
1947 Cascade Tunnel: how much would it be worth to you? Seattle Times June 1, pg. 3.

This article describes the proposed route of an automobile tunnel under Snoqualmie Pass, to shorten the length of the road. This plan was never implemented.

Daily Pacific Tribune
1857 An indignant Chinaman Daily Pacific Tribune Sept. 30, pg. 3, col. 1.

An article on the complaints of Chinamen towards the Northern Pacific Railroad labor practices.

1875 Mineral Discoveries. Daily Pacific Tribune Sept. 30, pg.3, col.1.

North Bend area. J.W. Borst reports on mineral specimens he has gathered 30 miles east of Seattle. Brief article.

Daniels, Joseph
1913 Coal fields of Pierce County, Washington. Washington Geological Survey Bulletin No. 10. Olympia.

This publication includes diagrams and maps of the geology of the Wilkeson coal fields.

1926 History of the pig iron manufacture of the Pacific Coast. Washington Historical Quarterly July, pg. 168-187.

Excerpts pertaining to ore deposits near Snoqualmie Pass.

Davis, Frank E.
1952 Cascade Pass pioneer writes about early day settlers. Concrete Herald October 16.

A recollection from Frank Davis, whose family arrived in the upper Skagit to homestead in 1890. Mostly focuses on the settlers along the river, but also contains some brief information on mines.

Davis, Jefferson
1853 Instructions to Brevet Captain G. B. McClellan. Report of the Secretary of War House Executive Document No 1, 33rd Congress, 1st Session.

Snoqualmie and Yakima Passes. Instructions regarding the survey of the Cascades for the location of a military road across Naches Pass.

DeBorde, Mary
1981 Glacier: a history. Report prepared for the Mt. Baker Snoqualmie National Forest. On file, Seattle.

DeBorde wrote a history that is fairly specific to what was the Glacier Ranger District. The history is presented by theme, and is easy to use, accurate and informative. Includes references.

Denny, Arthur A.
1856 Memorial of the Legislature of Washington Territory praying an appropriation for the military road across the Cascade Mountains. House of Representatives 34th Congress 1st Session.

Naches Pass. Speaker Arthur Denny requests the appropriation of $30,000 for the completion of the military road from Fort Steilacoom to Fort Walla Walla. Passed the house, passed the council.

1878 The Snoqualmie iron mountain. Handwritten manuscript, University o Washington microfilms No. 24, Seattle.

1965 Pioneer days on Puget Sound. Ye Galleon Press, Fairfield, Washington.

First published in 1888, this book primarily focuses on Puget Sound history. Many names of early settlers and businessmen that were locally well known are mentioned.

Dubois, W.F.
1906 Letter and report to Chas. E. Crane August 1, 1906. Copy on file, Mt. Baker-Snoqualmie National Forest historical files, Seattle.

A report of a visit in August 1906, to the Dutch Miller and Bahoster claims in the Burns (Snoqualmie) mining District. This report is complete with descriptions of the geology, mining developments and improvements.

Eckman, Leonard Clarence
1937 The geography of occupance in the Skykomish Valley. Unpublished M.S. thesis, University of Washington, Seattle.

This thesis covers mining, transportation, logging, settlement, etc. in the Skykomish Valley. Good reference, includes dates and gives a sense of chronological development. Also includes a section on the Great Northern Railroad.

Edson, J.M
1930 Wild animal population of the Mt. Baker National Forest. The Murrelet 11:14-19.

This article comments on the scarcity of wildlife on the Mt. Baker Forest, as a result of the intrusion of white man in the natural environment and the Forest Service management policies.

Edson, Lelah Jackson
1978 The fourth corner: highlights from the early northwest. Whatcom Museum of History and Art, Bellingham.

This history focuses on the northwest boundary of the state, mostly Whatcom County. Emphasis is on the development of Bellingham, and the orientation of industry to the coast. The brief section on early railroads has a slightly broader scope. Includes several biographies.

Elenbass, Bernice
1946 The Nooksack valley: a regional study. Unpublished thesis, Clark University, Worchester, Mass.

This thesis presents a general look at downriver settlement in the Nooksack valley. Contains some information pertaining to railroad lines up the valley.

Englebright, Lois W.
1964 Guardians of the Forest: a story of the fire look-outs on the Mt. Baker National Forest. Unpublished paper, Skagit Valley College. Copy on file, Mt. Baker-Snoqualmie National Forest, Seattle.

A synthesis of historical data available on the lookouts of the Mt. Baker Forest, written from much of the first hard experience of the author, and interviews with several knowledgeable individuals.

Engineering News
1891 Additional notes on the Cascade Tunnel. Engineering News October 17, 26(42).

Stampede Pass and the Northern Pacific Railroad. Particulars on the construction of the Stampede Tunnel.

1896 Untitled article. Engineering News January 30, 25(5):80.

Stampede Pass and the Northern Pacific Railroad. Announcing the completion of the project to substitute masonry for timber lining of the Stampede Tunnel.

1905 The switchback lines of the Great Northern and Northern Pacific Railways over the Cascade Range. Engineering News May 5, 43(18):296.

Stampede Pass and the Northern Pacific Railroad and Stevens Pass and the Great Northern Railroad. This article provides some background on the construction of the railroad switchbacks across Stevens and Stampede Passes. It describes technicalities, grades, etc.

1914 Tunnel and snowsheds in the Cascades: Great Northern Ry. Engineering News 71(23):1225-1230.

Stevens Pass and the Great Northern Railroad. This article is on the construction of the snowsheds between the Cascade Tunnel and Scenic. Includes photos, excellent drawings of tunnel construction, a map, and technical narrative.

1915a The Snoqualmie Tunnel, Chicago, Milwaukee and St. Paul Ry. Engineering News Feb. 18, 73(7):346-349.

This article gives all the engineering technical information regarding the construction of the Snoqualmie Pass Tunnel: length, grade, floor plan, construction schedule, etc. Excellent engineers drawings of the tunnel construction.

1915b Ventilation of Stampede Tunnel, Northern Pacific Ry. Engineering News March 18, 83(11):553.

The Northern Pacific Railroad announces the installation of a forced-ventilation plant in the Stampede Tunnel.

Engles, Harold

1977 Notes from conversation with Harold Engles, Forest Service retiree, by Bernie Smith, Darrington District Resource Assistant, Jan. 1977. Mt. Baker-Snoqualmie National Forest historical files, Seattle.

Information regarding the construction of early Forest Service buildings by the CCC.

1977 Notes from conversations with Harold Engles, Forest Service retiree, by Bernie Smith, Darrington District Resource Assistant, Jan. 15, 1977. Mt. Baker-Snoqualmie National Forest historical files, Seattle.

Notes on the history of trail up Windy Pass & other miscellaneous information.

Ennis, William C.

1913 Keeping the road clear. Milwaukee Railway System Employees Magazine April, pg. 10-13.

Snoqualmie Pass and the Chicago, Milwaukee and St. Paul Railroad. This article describes the operations of rotary plows to keep the train traffic coming through the pass in the winter.

Entwistle, William

1947 Logging in the early days. Sedro Woolley Courier Times August 7.

A brief history of logging in the Skagit Valley, as told by an old-timer.

Everts, A.B. and Nevan McCullough
1946 Protection plan, Puyallup working circle. Report on file, Mt. Baker-Snoqualmie National Forest, Seattle.

This report was prepared to discuss the fire protection agreement between the state and the U.S. Forest Service, and to make recommendations regarding the fire protection jurisdiction. It briefly discusses the current program of 1946, and gives some information about logging operations, Forest improvements etc., as they are related to fire protection.

Everett Herald
1976 Log railroads opened county. Everett Herald June 29.

Information on Logging railroads in Skagit County.

Field, Newton
1950 The Mt. Baker almanac: A book of historicl facts and figures. Unpublished ms., University of Washington, Suzzallo Library.

This is an invaluable source of information about the Mt. Baker National Forest. Includes chronicle of employees, improvements, etc. by year; a section on biographies; description of place names; and a detailed report of the administrative history of the Forest and each respective Ranger District.

Fishing and Hunting News
1964 Green River barriers crumbling. Fishing and Hunting News western Washington edition No. 49, December 12, Seattle.

This article was written in response to the cancellation of the 1914 agreement between the U.S. Forest Service and the city of Tacoma. It gives some background information and current perspective.

Fries, U.E. and Emil B. Fries
1949 From Copenhagen to Okanogan: autobiography of a pioneer. Caxton, Caldwell, Idaho.

Stampede Pass and the Northern Pacific Railroad. This book contains a chapter on Tunnel City, at the eastern portal of the Stampede Pass tunnel; mostly about camp life and the Chinese labormen.

Glover, Sheldon L.
1954 One hundred years of mining. Division of Mines and Geology Biennial Report No. 5:9-20. Olympia.

A good, accurate, but general synopsis of the first centennial of mining in Washington.

Gray, Henry L.
1969 The gold of Monte Cristo. Seattle.

Great Northern Railway
n.d. Last Year of the "switch-back" The Passenger Department of the Great Northern Railway, Great Northern Pocket Books No. 7. St Paul. Minn.

1952 Great Northern Railway condensed history. Public Relations Department, St. Paul, Minn.

Hall, George T.
1897 The Monte Cristo and Silverton districts. The Seattle Times December 18, pg. 19.

A good, full page, current status report of mining operations in these districts.

Harmon, Frank J.
1980 What should foresters wear: the Forest Service's seventy-five-year search for a uniform. Journal of Forest History October pg. 188-199.

This article describes the history of the official uniform and shield of the Forest Service. Includes photographs, references.

Haskell, Daniel C., editor
1948 On reconnaissance for the Great Northern: letters of C. F. B. Haskell, 1889-1891. Bulletin of the New York Public Library 52(2):55-69; 125-140.

Stevens Pass and the Great Northern Railroad. Publication of Letters written by Mr. Haskell between 1889 and 1891, during his reconnaissance for the Great Northern Railroad. The letter describing the trip on which Mr. Haskell located Stevens Pass is missing from the collection. The editor printed an extract from a manuscript in the files of the Great Northern Railway, prepared by John F. Stevens in its place.

Hawley, Robert Emmett
1945 Skgee Mus: or Pioneer days on the Nooksack. Miller and Sutherlen, Bellingham.

This book covers early settlement in Nooksack valley.

Headlee, F.M.
1908 Mineral resources of Snohomish County. The Coast November, pg. 295-296.

Heller, Ramon
1980 Mt. Baker Ski area: a pictorial history. Mt. Baker Recreation Company, Bellingham.

This is a history of the development of the recreation facilities of the Mt. Baker Resort. Includes photographs.

Henshaw, Fred F. + Glenn L. Parker
1913 Water power of the Cascade Range, part II - Cowlitz, Nisqually, Puyallup, White, Green, and Cedar drainage basins. U.S.G.S. Water Supply Paper 313.

Report of a survey of the above drainages to list potential for hydroelectric development. Includes references to turn-of-the-century power projects

Hidy, Ralph W., Frank E. Hill and Allan Nevins
1963 Timber and men: the Weyerhaeuser story. McMillian, New York.

Hildebrand, Lorraine Barker
1977 Straw hats, sandals and steel: the Chinese in Washington State. Washington State American Revolution Bicentennial Commission, Tacoma.

A fascinating account of the history of Chinese in Washington. Particularly useful with regard to the use of Chinese labor contracted by the Northern Pacific Railroad.

Hill, Ada S.
1970 A history of the Snoqualmie Valley. Private Printing, Ada S. Hill.

This book covers many subjects, but settlement is the main topic.

n.d. News clippings from the Snoqualmie Valley Record, May 13, 1944. In Scrapbook by Ada S. Hill, p. 168.

Newspaper articles about logging in the North Bend area. Contains specific references to the Bend Timber Company.

Hill James M.
1912 The mining districts of the western United States. U.S. Geological Survey Bulletin No. 507. Government Printing Office.

This bulletin lists the mining districts and the principle minerals by county. It give the names of other publications for additional information on the mining districts. General, but appears to be accurate.

Hobart, Charles W.
1891 The Stampede or Cascade tunnel on the Northern Pacific Railroad Engineering News Oct. 3, pg. 301-303.

Hodges, L.K.
1897 Mining in the Pacific Northwest. Seattle Post-Intelligencer, Seattle. Reproduced by Shorey Book Store, Seattle, 1967.

The most definitive source on early mining in the Northwest. First published as a series of articles in the Seattle Post Intelligencer, and put into book form by them in 1897. Includes maps.

Holland, Andy
1980 Switchbacks. The Mountaineers, Seattle.

Memoirs of Andy Holland, drawing from his experience of 15 years as a lookout and recreation guard on the Mt. Baker and Darrington Districts of the Mt. Baker National Forest. Chronicles his adventures, and includes several personal anecdotes.

Holt, A.G.
1915 The finished job. Milwaukee Railway System Employees Magazine February, pg. 9-11.

Snoqualmie Pass and the Chicago, Milwaukee and St. Paul Railroad. This article provides good technical information, as well as dates of the construction of the tunnel at Snoqualmie Pass.

Homes, Samuel J.
1929 Marblemount Bridge. Pamphlet file, University of Washington Suzzallo Library, Seattle.

Addresses the construction of a wagon road through Cascade Pass.

Hult, Ruby
1960 Northwest disaster: avalanche and fire. Binfords and Mort, Portland.

Stevens Pass and the Great Northern Railroad. The story of the Wellington disaster, fictionalized with quotes of what was said; probably an elaborated account. The book is not referenced, although it does contain a bibliography.

Hunt, Dora and Maxine Hyskoe
1943 Norse Peak - 1943. Mt. Baker-Snoqualmie National Forest Historical files, Seattle.

White River Ranger District. A brief report capturing the experiences of the two lookouts assigned to Norse Peak Lookout in the summer of 1943.

Hunt, Herbert and Floyd Kaylor
1917 Washington West of the Cascades. S.J. Clarke Publishing, Seattle.

General historical information on early lumber mills in western Washington. Describes the larger mills, most of which operated in the lower valleys in those days.

International Boundary Commission
1937 Joint report upon the survey and demarcation of the boundary between the United States and Canada. Government Printing Office.

This report includes a summary of the survey and demarcation of the entire informational boundary, description and kinds of monuments, etc. That portion that deals with the boundary west of the Cascades is applicable.

Interstate Publishing
1906 An illustrated history of Skagit and Snohomish Counties: their people, their commerce and their resources, with an outline of the early history of the State of Washington. Interstate Publishing, Chicago.

This treatise of the history of Skagit and Snohomish counties was compiled mostly from news paper articles. Each chapter treats approximately a 10 year period. It contains a great deal of information, much of which focuses on the down-river development, however there are portions on logging and mining applicable to Forest Service lands. Contains a large biographical section.

Jeffcott, Percival R.
1963 Chechaco and sourdough, or the Mt. Baker gold rush. Pioneer Printing, Bellingham.

A history of mining in the Mt. Baker area, laced with many names, dates and personal & biographical anecdotes.

Jordan, Ray
n.d.a Letter to Mr. Herbert E. Barth. On file, Mt. Baker-Snoqualmie National Forest.

This letter is in response to specific questions asked by Mr. Barth about settlement along the Skagit River.

n.d.b Wild rivers study: history of the Skagit basin. Ms. on file, Mt. Baker-Snoqualmie National Forest, Seattle.

A brief history, unreferenced.

1966 Logging in Skagit county: a 100-year stretch. Skagit Valley Herald, two part article January 31 and March 9.

This newspaper feature gives a brief overview of logging in the northern Puget Sound country. Provides some general historical background.

Katzenberger, Glen and Tina Katzenberger
n.d. Stevens Pass - now and then. Notebook of information compiled over several years, in possession of authors.

This is a scrapbook of information about Stevens Pass. It includes information on the railroad, the ski area development, and State Route 2 construction. Information presented chronologically by year.

Keillor, Linda
1978 Cascade tunnel marks fiftieth anniversary. Burlington Northern News 9(10):8-10.

An accurate recapitulation of the story of the New Cascade tunnel and subsequent improvements.

Kemmerich, Joe
1945 History of the Baker Lake fish hatchery. Mt. Baker-Snoqualmie National Forest historical files, Seattle.

This is an invaluable source regarding the fish hatchery, since there is not an abundance of information on the subject.

Kerr, D.J.
1931 Preliminary studies and results of improving Cascade crossing. In Papers of the Eight-Mile Cascade Tunnel-Great Northern Railway Symposium American Society of Civil Engineers Part I:185-193.

Stevens Pass and the Great Northern Railroad. The symposium constitutes the final professional record of the construction of the 7.79-mile Cascade tunnel. This paper presents the outline of the history, and discusses the reasons for the improvements made by the Great Northern Railway Company.

King, Max C.
1962 Trainmen called it "Stampede Hell." Seattle Times Sunday, September 2, pg. 12-13.

Stampede Pass and the Northern Pacific Railroad. A recounting of 50 years of progress of the Northern Pacific Railroad in the west, as told by two retired railroad men from Auburn, Washington.

Klement, Otto
1926 Assorted stories from The Mt. Vernon Herald.

Primarily a report of trips into the Cascades with the Indians. Contains some information on mining activity.

Krafft, Katheryn H.
1985 Historic American Building Survey documentation of the Lester Guard Station. Report prepared for the the Mt. Baker-Snoqualmie National Forest, Seattle.

Kresek, Ray
1984 Fire lookouts of the northwest. Ye Galleon Press, Fairfield, Washington.

The stories of fire lookouts, both the buildings and the people. A lot of good & accurate information is presented, although some of the details are inconsistent with Forest Service records.

Landes, H., and W. S. Thyng, et al.
1902 The metalliferous resources of Washington. Washington Geological Survey Annual Report for 1901.

This is a report on several mines in Washington.

Lashbrook, Mary Pease
1968 They called it Monte Cristo. Frontier Times June-July 1968, pgs. 20-22, 54-55.

A short, elaborated article on the history of Monte Cristo, the discovery, development and decline of the mines.

Leber, Ralph
1921 Snoqualmie lodge. The Mountaineer 14:72-73

This is a summary of the annual improvements completed on the Mountaineers Lodge, Snoqualmie Pass.

Lewarch, Dennis E.
1979 A summary cultural resources overview of the Cedar and Tolt River watersheds. Office of Public Archaeology Reconnaissance Report No. 24, Seattle.

Linsley, D.C.
1870 The notes of D.C. Linsley on his examination of the Cascade Mountains in 1870, May-June. Manuscripts division of the Minnesota Historical Society.

This copy of the handwritten journal of D.C. Linsley, May 25, to Aug 6, 1870, is an invaluable primary source of information, however, the edited version by Harry M. Majors (1981) is easier to use and obtain.

1981 A railroad survey of the Sauk and Wenatchee Rivers in 1870, edited by Harry M. Majors. In Northwest Discovery 2(4):202-266.

Sauk and Skagit Rivers and the Northern Pacific Railroad. An excellent ethnohistoric source for the Sauk and Skagit River drainage. Not much on the Northern Pacific, as the routes surveyed by Linsley were not chosen for the railroad. Majors provides informative notes on place names, locations etc.

Livingston, Vaugh E., Jr.
1971 Geology and mineral resources of King County, Washington. Division of mines and Geology Bulletin No 63, Olympia.

Longmire, David
1917 First immigrants to cross the Cascades. Washington Historical Quarterly 8:22-28.

An eyewitness account of the first immigrant crossing of Naches Pass. Includes a list of all the people who were part of the Longmire Party.

1921 Brief history of the Nachez Pass Trail. Yakima Valley Progress March, p. 4.

Lundin, John W.
1917 Data on Denny Creek Trail - T22N & 25N, R11E W.M. Snoqualmie National Forest. Mt. Baker-Snoqualmie National Forest historical files, Seattle.

This is a description of the Denny Creek trail, with maps.

1922 Range appraisal report: Lester Ranger District, Snoqualmie National Forest, December 12. Mt. Baker-Snoqualmie National Forest historical files, Seattle.

This report provides a description of the Lester Ranger District (later North Bend) with details of acreage, vegetation, improvements, etc.

Magnusson, Elva Cooper

1934 Naches Pass. Washington Historical Quarterly 25:171-181.

An article emphasizing the significance of Naches Pass in the history of Washington.

Majors, Harry M. and Richard C. McCollum

1977 Monte Cristo area: a complete outdoor guide. Northwest Press, Seattle.

This is primarily a recreation guide to the Monte Cristo area, however, it includes an excellent summary of the history of mining development at Monte Cristo.

Majors, Harry M., editor

1978 Mt. Baker: a chronicle of its historic eruptions and first ascent. Northwest Press, Seattle.

This book is presented in a chronological format, with quotes from various documents, journals and articles relevant to the history of Mt. Baker. It is well referenced, and serves as an excellent source of information as well as a general reference to assist in additional research.

1981 A railroad survey of the Sauk and Wenatchee Rivers in 1870, D.C. Linsley. Northwest Discovery 2(4):202-266.

Notes of Linsley's exploration of the north Cascades for the Northern Pacific Railroad. Describes his journey along the Skagit, Sauk, and North Fork of the Stillaguamish Rivers. Excellent annotation by Majors.

1984 Discovery of Mount Shuksan and the upper Nooksack River, June 1859. Northwest Discovery 5(21):1-84.

Majors compiled this series of historical sources relevant to the history of the upper Nooksack drainage. The primary source is from the U.S. Boundary Survey notes of Henry Custer, 1859, excerpts of which are included. This is a well edited, and well referenced source, useful for both general historical background of the area and as a foundation for additional research.

Martinsen, Wes
1966 The Monte Cristo story. Report on file, Mt. Baker-Snoqualmie National Forest, Seattle.

A short, eight page report about mining in the Monte Cristo area. Appears accurate, but is unreferenced.

Marts, Marion Ernest
1944 Geography of the Snoqualmie River Valley. Unpublished M.A. thesis, University of Washington.

Focuses on settlement and industry in the lower valley, with a significant portion dedicated to agriculture. Some of the information on the development of the logging industry is applicable.

McCullough, R. Nevan
1970 Interpretive study of the White River drainage. Unpublished ms., Mt. Baker-Snoqualmie National Forest, Seattle.

The careful attention to history is evident in this manuscript. This interpretive study includes several accounts of which McCullough had first-hand knowledge, but also includes some stories that have been told and retold through generations. It is most valuable when used with other sources.

1973 Notes in the historic photograph file, White River, logging and transportation. Mt. Baker-Snoqualmie National Forest historical files, Seattle.

The photographs provide excellent primary source material, however, many are not dated or identified. Nevan McCullough, District Ranger and local historian, went through the photographs of the White River District and wrote descriptions many years later.

McCollum, Richard C., editor
1981 Goat Lake trail: a hike through mining history. Northwest Discovery 2(5):270-314.

Monte Cristo area. This is a series of articles, compiled and edited by McClollum, about the Goat Lake mining area, near Monte Cristo. It includes excerpts from the original description of the mining group, written by L.K. Hodges, reporter for the Seattle Post Intelligencer, in 1897, as well as other, less well-known references. It is an excellent source and a good basis for additional research on the topic.

McDonald, Lucile

1953a The first crossing of Naches Pass. The Seattle Sunday Times Magazine Nov 1, pg. 2.

An article re-telling the story of the first immigrant crossing of Naches Pass, celebrating the centennial.

1953b How the pioneers crossed Naches Pass. The Seattle Sunday Times Magazine Nov. 8, pg. 11.

An article re-telling the story of the first immigrant crossing of Naches Pass, celebrating the centennial.

1963 Facts about Snoqualmie Pass wanted. Seattle Times Sunday Mar. 24, pg. 6

The Snoqualmie National Forest announces its interest in gathering historic data about the use of the land.

1965 Snoqualmie Pass road is 50 years old. Seattle Times Sunday, July 18, pg. 2.

McDonald retells the story of the Snoqualmie Pass Highway on the anniversary of its 50th year.

McGuire, C. C.

n.d. Memoirs of C. C. McGuire. Mt. Baker-Snoqualmie National Forest historical files, Seattle.

C. C. McGuire's memoirs are interesting and informative. He addresses several subjects from first-hand experiences on the Mt. Baker Forest.

McIntire, Gov. A.W.

1908 Mining tributary to Everett. The Coast October, pg. 235-237.

Discusses briefly the mining developments in the Cascades in terms of their relationship to the economic growth of the area.

McIntyre, Albert

1907 Copper deposits of Washington. American Mining Congress Proceedings Ninth Annual Session.

Monte Cristo and Skykomish River areas Information on the copperbelt of Snohomish county - includes Monte Cristo, Sunset and Copper Bell mines.

McIntyre, Robert N.
1952 Mather Memorial Parkway, a brief history. Report prepared for the Mt. Rainier National Park, September 12.

This interesting but brief history includes a copy of the 1931 Land Classification Order for the "designation for scenic and receation purposes of lands within the Rainier National Forest embracing the Naches Pass Highway."

McWilliams, Mary
1955 Seattle Water Department history: 1854 - 1954. Dogwood Press, Seattle.

This book is an excellent source on the history of the Seattle Water Department, including the Cedar River Watershed. It provides the background information for placing the Cedar River development in perspective, and also gives the ordinances (dates, etc.) under which the improvements, expansion and management policies were made.

Meany, Edmond S.
1912 Naches Pass. The Mountaineer 5:40-41.

The story of the immigrant crossing of Naches Pass in 1853.

1916 Mt. Rainier: a record of exploration. MacMillan, New York.

This book is primarily about Mt. Rainier, but some information can be learned about trails and early use of the surrounding area, specifically the Carbon River drainage.

1922 Van Ogle's memory of pioneer days: introduction by Edmond S. Meany Washington Historical Quarterly 13(4):269-281.

Naches Pass. Narrative provides another first-hand account of the first immigrant crossing of the Cascades at Naches Pass. Van Ogle's differs with some of the more popular accounts.

1950 History of the State of Washington. MacMillan, New York

A general history, covers early exploration and the Indian Wars.

1936 The history of the lumber industry in the Pacific Northwest. Ph.D. dissertation, Harvard University.

Mears, Frederick
1931 Surveys, construction methods, and a comparison of routes. In Papers of the Eight Mile Cascade Tunnel - Great Northern Railway symposium, American Society of Civil Engineers Part II: 194-217.

Stevens Pass and the Grest Northern Railroad. The symposium constitutes the final professional record of the construction of the 7.79-mile Cascade tunnel. This paper contains a description of the methods and instruments used, the construction standards, and compares the old and new routes.

Meeker, Ezra
1905 Pioneer Reminiscences of Puget Sound. Lowman and Hanford, Seattle.

Primarily useful for the significant account of the history of Naches Pass.

1916 The Busy life of eighty-five years of Ezra Meeker. Lowman and Hanford, Seattle.

Melrose, J. W.
1941 Report on mineralization of the area to be served by Middle Fork of Snoqualmie River Road, July 22, 1941. Division of Mines and Geology, Olympia.

Merry, Robert W.
1966 The ordeal of Naches Pass. Washington Highways, September.

The story of the first immigrant crossing of Naches Pass is briefly retold in this article. The article is not referenced; contains no new information.

Meschter, Daniel
1972 The mineral resources of the Alpine Lakes area, Washington. Mt. Baker-Snoqualmie National Forest, Seattle.

This is not a historical document, but gives a good geological summary and a report of the current activities for the vicinity of the Alpine Lakes.

Miles, John C.
1984 Koma Kulshan: the story of Mt. Baker. Mountaineers, Seattle.

An comprehensive history of the area; easy to read, accurate and informative. Includes several useful maps and photographs, and a bibliography.

Milton, C. and D. J. Milton
1959 Nickel-gold ore of the Mackinaw Mine, Snohomish Co, Washington. Division of Mines and Geology Reprint No. 4, Olympia.

Milwaukee Railway System
1914 The Snoqualmie tunnel. Employees Magazine September, pg. 11-15.

Chicago, Milwaukee and St. Paul Railroad announces the completion of the Snoqualmie Pass tunnel. This article includes some small photographs.

1915 Snoqualmie tunnel. Employees Magazine February, 2(11):5-8.

This article recounts the story of the construction of the Snoqualmie Pass tunnel with some good technical information.

Milwaukee Road Magazine
1973 The Milwaukee electrification - a proud era passes. Road Magazine 61(3):1-12.

Snoqualmie Pass and the Chicago, Milwaukee and St. Paul Railroad. The Milwaukee announces its plan to phase out its electrified operations on Feb 20, 1973 - 57 years, 2 months and 21 days after the mainline was first energized.

1974 Sign of the times: the story of the Milwaukee Road trademark. Road Magazine April, 62(2).

Chicago, Milwaukee and St. Paul Railroad tells the story of their trademark, merging of companies, and the adoption of the name Chicago, Milwaukee and Puget Sound Railway in 1909.

Moen, Wayne S.
1969 Mines, mineral deposits of Whatcom County. Division of Mines and Geology Bulletin No. 57, Olympia.

This is an excellent reference for the area.

1972 Letter to Walker M. Stephan from W. S. Moen, Geologist, Department of Natural Resources, Olympia, January 31, 1972. Copy on file, Mt. Baker-Snoqualmie National Forest, Seattle.

Letter in response to an inquiry about the Carmack lode in King County.

Moffat, Webb

1978 A brief history of skiing in the northwest. Puget Soundings, December.

This brief history focuses on the development of Snoqualmie Summit, where the author spent many years. It has some useful information including names and dates of development of ski areas around the state.

Mohawk - Hobbs Rubber Company

1926 Yellowstone Trail. Mohawk - Hobbs Grade and Surface Guide Akron, Ohio.

Snoqualmie Pass. A complete tourist guide, by mile, of the conditions of the Yellowstone road, and the accommodations and services available along the route.

Moore, Nancy

1978 Our hometown heritage: community histories Sultan, Startup, Gold Bar and Index. Monroe Chronicle May 10, p.3.

A brief article (one page) gives a paragraph on each community; very general treatment.

Morgan, Murray

1961 Bore, Bennett, bore! Cascades Dec, p.15. Pacific Northwest Bell, Seattle.

An account of the construction of the Stampede tunnel for the Northern Pacific Railroad.

Morley, Roberta Crisp

1970 Tree stumps and cattle trails. Washington Cattleman June pg. 16-20.

Snoqualmie, Green and White River valleys. A very general history of the Puget sound area (King Co.). Emphasis is placed on economic development, specifically the timber and cattle industries.

Muir, John

1918 Sheep trails. Houghton Mifflin Co., Boston.

Comments on Cascade tree types and on lumbering practices of the time. Information is most relevant to the area around the Snoqualmie River valley.

Murray, Keith A.
1965 Building a wagon road through the northern Cascade Mountains. Pacific Northwest Quarterly 56:49-56.

An article chronicling the events which led up to the construction of a road across the North Cascades. Includes descriptions of alternate routes considered, and a history of the Cascade Wagon Road.

Nelson, L.A.
n.d. Report on logging operations adjacent to Snoqualmie National Forest. Annual report. Mt. Baker-Snoqualmie National Forest, Seattle.

Northwest Boundary Commission
1869 Statement of disbursements on account of the Northwest Boundary Survey &c. House of Representatives, 40th Congress, 3rd session Exec. Doc. 86.

This is a detailed list of the expenses, including subsistence, tools, equipment, office rent, wages, etc. It is not directly applicable to Forest history.

Northern Pacific Railway
1887 Northern Pacific Railway Guide. W. C. Riley, St. Paul. On file, Museum of History and Industry, Seattle.

A tourist's guide to scenery, route, etc. of the Northern Pacific Railroad.

1946 A brief history of the Northern Pacific Railway. Northern Pacific Railway Engineering Department, St. Paul.

This short history (three pages) contains information of the entire railroad line; not much is specific to the western extension.

Northwest Magazine
1884a The Cascade passes. Northwest Magazine, March.

An update of the exploration of the Cascade passes for the Northern Pacific Railroad. At the time, reports were favoring Naches Pass as the best suited for the route.

1884b Seattle and the Cascade grant. Northwest Magazine, May.

The Seattle residents call for Congress to rescind the Land Grant after Northern Pacific changed its terminus to Tacoma.

1885 News from our cupola. Northwest Magazine, September.

News of the times, announcing the discovery of magnetic ore in the Snoqualmie Pass area.

1886a Nelson Bennett. Northwest Magazine, March.

Stampede Pass and the Northern Pacific Railroad. This consists of a one paragraph article on the award of the contract to build the Stampede Pass tunnel.

1886b The great Stampede tunnel. Northwest Magazine, October.

This article announces the plans of the Northern Pacific to build a tunnel under Stampede Pass.

1887 The Skagit River valley. Northwest Magazine, June

This is a publicity article for the Skagit River valley, to encourage settlement upriver. It talks about positive characteristics: agriculture, steamboat travel, etc.

1887 Snow-sheds in the Cascade Mountains. Northwest Magazine, April, pg. 59.

Stampede Pass and the Northern Pacific Railroad. The Northern Pacific announces their plans to construct about eight mile of snowsheds within a 20-mile stretch of track.

Oliphant, J. Orin

1947 The cattle trade through the Snoqualmie Pass. Pacific Northwest Quarterly 38:193-213.

This article provides a detailed description of the cattle trade. It is well researched and referenced.

Overmeyer, Philip Henry

1941 George B. McClellan and the Pacific Northwest. Pacific Northwest Quarterly 32:3-60.

This is a good description of George B. McClellan's involvement in the exploration of the Cascades, his routes and observances.

Park, C.H.
1908 Uncle Sam's battle against fake homesteaders. The Sunday American Reveille, Bellingham, Dec 27.

1927a Letter to Mr. Easton regarding Mt. Baker history, January 18, Bellingham. Mt. Baker Snoqualmie National Forest, Seattle.

This letter is in response to 25 specific questions regarding names, dates and locations important in the history of Mt. Baker. Mr. Easton was apparently gathering information for a book to be published by the Mt. Baker club, Bellingham.

1927b Notes on early history of the Mt. Baker National Forest. On file, Mt. Baker-Snoqualmie National Forest, Seattle.

These notes include names, dates and locations important in the history of the Mt. Baker National Forest. The Mt. Baker almanac, compiled by Newton Field in 1950, incorporates much of this information.

Patty, E.N.
1921 The metal mines of Washington. Washington Geological Survey Bulletin No. 23, Olympia.

This is an excellent source on mining, includes sections on history and geology. It covers several mining operations, but is by no means exhaustive.

Payne, James E.
1972 The history and recreational significance of the Naches Pass Trail. Mt. Baker-Snoqualmie National Forest, Seattle.

This report reiterates the popular story of the journey along the Naches Pass Trail by the Longmire Party in 1853. It also discusses some of the recent proposals, for the construction of a highway through the pass.

Penn Mining Co:
1906 Plan showing the property of the Penn Mining Co., Monte Cristo. Mt. Baker-Snoqualmie National Forest historical files, Seattle.

Peter, Joan
1981 Through the mountain in 1888. Ms. on file, Mt. Baker-Snoqualmie National Forest, Seattle.

Stampede Pass and the Northern Pacific Railroad. A thorough and accurate history of the Stampede Pass tunnel, written largely from primary source materials.

Peterson, Daniel E.
1980 The Skagit: an historical perspective. In Cultural resource overview and sample survey of the Skagit Wild and Scenic River by Blukis Onat et al., Institute of Cooperative Research, Seattle.

Pierce, Frank Richardson
1965 Down memory lane. Seattle Times Sunday, February 21, p.6.

A brief recount of the history of the Cedar River Masonry Dam, and a few other short stories. The accuracy of this information is questionable.

Pinchot, Gifford
1972 Breaking new ground. University of Washington Press, Seattle.

Poehlman, Elizabeth S.
1979 Darrington: mining town/timber town. Gold Hill, Kent, Washington.

This history is specific to Darrington, references to outside activities are few. Contains many personal anecdotes.

Popoff, Constantine
1949 Investigations of the Travertine deposit near Darrington. U. S. Bureau Mines, reports of investigation 4565.

Contains information about the Whitechuck claim.

Prater, Yvonne
1981 Snoqualmie Pass: from Indian trail to Interstate. Mountaineers, Seattle.

North Bend, Snoqualmie Pass area. An excellent source for information on the development of the Snoqualmie Pass area. Ms. Prater includes chapters on early exploration, the railroad and recreation. Her documentation tracing the Snoqualmie Pass wagon road to the opening of Interstate 90 is particularly useful.

Prosch, Thomas W.
1908 The military roads of Washington Territory. Washington Historical Quarterly 2:118-26.

This article recounts the survey of Naches Pass for a millitary road; government appropriations and recommendations. Covers McClellan's and Lt. Arnold's surveys.

The Puget Sound Weekly Courier

1880 Logging on the Skagit. Puget Sound Weekly Courier, September 17, pg. 1.

A brief account.

Railway Age Gazette

1914 Extensive Great Northern snow shed construction. Railway Age Gazette 56(16):902-906.

Stevens Pass and the Great Northern Railroad. A very complete and informative article on the construction of snow sheds between the Cascade Tunnel and the town of Scenic. Describes the sheds, includes a map, photographs and engineers' drawings.

1915 Lining the Snoqualmie tunnel. Railway Age Gazette, Jan. 22, pg. 152.

Snoqualmie Pass and the Chicago, Milwaukie and St. Paul Railroad. A description, with drawings, of the construction techniques used for the tunnel.

1917 Snow shed construction in the Cascades. Railway Age Gazette 63(24):1087-1091.

Stevens Pass and the Great Northern Railroad. An excellent article on the construction of snow sheds between the Cascade Tunnel and the town of Scenic: 6.7 miles of sheds completed. Describes types of sheds, includes photographs, engineers' drawings and a map showing locations.

Rakestraw, Lawrence

1953 Uncle Sam's Forest Reserves. Pacific Northwest Quarterly, October, p. 145-151.

A retrospective article about the establishment of the Forest Reserves in the western United States and the resistance with which the proclamation was met.

Raney, F. R. and C. W. Raney

1973 Steilacoom, Nisqually, Squaxin, Cowlitz, Puyallup and Stillaguamish tracts in Washington. Indian Claims Commission Testimony. Clearwater Publishing.

This report is particularly useful with regard to early land disposal statutes in Washington Territory and Washington State (pages 136-150).

Ranger, Dan, Jr.
1964 Pacific Coust Shay: strong man of the woods. Golden West, San Marino.

This book is an excellent photographic source for the Shay locomotives, and how they were used in the Pacific Northwest. It includes a chapter on the White River Lumber company. (A small error was noted; regarding the name of the owner of that company.)

Reed, J. Harvey
1912 Forty years a locomotive Engineer. J. Harvey Reed.

This book was self published and is difficult, if not impossible, to find now. Describes the famous Northern Pacific switchback across Stampede Pass, and other stories collected by the author.

Rich, Jean and Annabel Post
1943 Colquhoun Lookout - 1943. Report on file, Mt. Baker-Snoqualmie National Forest historical files, Seattle.

White River Ranger District. A brief report recapturing the experiences of the two lookouts assigned to Colquhoun Lookout in the summer of 1943.

Richards, Robert H, Charles Locke and John Bray
1925 A Text Book of Ore Dressing. McGraw Hill, New York.

An excellent reference for the machinery and processes involved in mining operations. Terms are also explained.

Roberts, Alan C.
1965 Mountain marathon. Copy on file, Mt. Baker-Snoqualmie National Forest historical files, Seattle.

The story of the 40-mile race up Mt. Baker, retold.

Roe, JoAnn
1980 The North Cascadians. Madrona, Seattle.

This history covers the North Cascades province inclusive of Skagit, Whatcom, Okanogan and Chelan Counties. The book covers mining and the hydro-electric development on the Skagit River; it also includes a useful chapter on the Cascade Wagon Road. The history is written with many personal anecdotes.

Rogers, A.B.
1887 Correspondence and journal on reconnaissance for the Great Northern Railway cross the Cascade Mountains. Original in the University of Washington manuscript collection, Suzzallo Library.

A report of exploration for the railroad, Rogers' account is particularly valuable for its information about the Skagit and Sauk River territory, early trails, contacts with Indians, etc.

Rouley, William D.
1985 U.S. Forest Service grazing and rangelands: a history. Texas A & M Press.

The history of grazing and range in the Forest Service. Laws, regulations and management principles are addressed on a National level. Limited application to the Mt. Baker-Snoqualmie National Forest.

Russell, Charles
1958 The train that ran on wooden rails: old tramway carried logs down to mill. The Seattle Post Intellingencer Sunday Pictorial Review, June 29, p. 8.

Primarily about the logging tramway, called the wooden Pacific, that was operated to the High Point Mill, Issaquah.

Scheuchzer, Charles
Camp Mason's colorful history. Newspaper clipping on file, Mt. Baker-Snoqualmie National Forest, Seattle.

A brief history of Camp Mason, a stop-over on the Snoqualmie Pass Road.

Schmierer, Alan C.
1983 Northing up the Nooksack. Pacific Northwest National Parks and Forests Association, Seattle.

This is a good reference for the history of the Glacier Ranger District. The author relied heavily on the manuscript by Mary DeBorde (1981) written for the Mt. Baker-Snoqualmie National Forest. This book includes a number of informative photographs, and expands on the original manuscript.

Seattle and International Railway

1898 Mt. Baker gold fields via Seattle and International Railway. Donald H. Clark papers, University of Washington manuscripts collection, Suzzallo Library, Seattle.

An advertisement pamphlet. Not much substantive information, but generally indicative of the get-rich quick attitude of the times. Describes how to get to the Mt. Baker gold mines, what to take and how to stake a claim. Includes photographs.

Seattle Gazette

1865 The Cascade Road again. Seattle Gazette July 29.

Snoqualmie Pass area. This article reports on the meeting of the Cascade Road committee, announcing their conclusion that Snoqualmie Pass was the most practicable route.

Seattle Post Intelligencer

1883 Newspaper article. Seattle Post Intelligencer May 4.

1896a Great bodies of ore: mining developments in Snohomish County. Seattle Post Intelligencer April 19, pg. 6.

Report on "four promising districts" - Monte Cristo, Stillaguamish, Silver Creek, and Troublesome.

1896b Mines of the Sultan Basin. Seattle Post Intelligencer Oct. 4, p. 18.

Report on the Little Chief, Hoodoo and other properties, including a description of the district. Xerox on file at the Mt. Baker-Snoqualmie National Forest, Seattle - very difficult to read.

1896c The Silverton District: large ore bodies. Seattle Post Intelligencer October 11, pg. 9.

A report on the work done along the Stillaguamish over a five year period: 1891-96. Includes the Hoodoo and Cleveland groups. Xerox copy on file at the Mt. Baker-Snoqualmie National Forest, Seattle - very difficult to read.

1896d The Goat Lakes mines, rich new district Seattle Post Intelligencer Oct. 18, p. 13.

Darrington area. This article announces the discovery of the Goat Lake mineral belt (Monte Cristo District). Xerox on file at the Mt. Baker Snoqualmie National Forest, Seattle - very difficult to read.

1899a Index: the mining center that will rival Butte. Seattle Post Intelligencer June 8, p. 8.

Report on developments at the Sunset, Copper Bell, Troublesome and Independent mines.

1899b Snohomish County mines. Seattle Post Intelligencer July 7.

Report of a new find of copper in a tunnel of the Index Mining Company. Also includes more reports on Independent, Troublesome, Silver Creek, Monte Cristo, etc.

1899c Snohomish County's mines. Seattle Post Intelligencer July 30, p.3.

1906 Dutch Miller Mines build longest aerial tram on coast. Seattle Post Intelligencer July 31, p. 7.

Report on the plans to construct an aerial tramway from Dutch Miller mine to the railroad at Foss River. Short, two paragraph article.

1912 Milwaukee Road buys Bellingham Railway System. Seattle Post Intelligencer March 13, pg. 1.

The appropration of Bellingham Bay and British Columbia Railroad between Bellingham and Glacier by the Chicago, Milwaukee and St. Paul Railway.

1937 Dreaming of city street over pass realized. Seattle Post Intelligencer August 25.

Snoqualmie Pass area. This article was printed on the day the all-paved Snoqualmie Pass Highway opened to automobile traffic.

Seattle Press Times

1887 Logging by railroad - complete list of the logging roads in Washington Territory. Seattle Press Times.

This article has some excellent information on logging companies and mileage of track belonging to each company. Xerox on file, Mt. Baker-Snoqualmie National Forest historical files, Seattle.

1892 Monte Cristo may be built across the range. Seattle Press Times Aug 10, p. 8.

This article addresses the proposed extension of Eastern and Monte Cristo Railroad to Okanogan.

1893 Skagit shingle mills. Seattle Press Times June 2, pg. 2, col. 2.

Includes a list of mills and production.

1893 To work the Hoodoo: English capital will operate the mines. Seattle Press Times April 8.

A report on the Stillaguamish and Sultan Mining Company operations, specifically, the Hoodoo Mine.

Seattle Times

1893 The world of labor. Seattle Times June 2, pg. 2, col 2.

This article provides information about the various logging companies from a financial perspective, listing the logging companies and their average daily capacity.

1893 Saw mills of the Skagit. Seattle Times May 22, pg 8, col 4.

This article lists the mills on the Skagit River and current production capacities.

1896a Mines and mining: Times correspondent writes from Skykomish. Seattle Times July 24, p. 5.

1896b Mines and mining: Times correspondent writes from Index. Seattle Times July 30, p.8.

Skykomish area. Report on the Money Creek, Miller River and Beckler River Districts.

1897a Pile of ore is Mt. Si. Seattle Times July 9, p. 5

This article announces the discovery of ore on Mt. Si, including the locations of claims, assays, etc.

1897b Gold fields of the Mt. Baker district. Seattle Times Dec 18, pg. 17.

This full page article discusses the excitement that built around the discovery of gold in the Mt. Baker District.

1901 Mining in the northwest: Carmack. Seattle Times Aug 24.

North Bend area. A report on the Carmack mines, taken from the Seattle mining record.

1946 On pioneer Naches Trail. Seattle Times Rotogravure, October 27. Seattle.

A five page article of photographs, many of which were taken from R. Nevan McCullough's collection. Includes brief descriptions with the photographs, but basically no text.

1951 Mine-to-market group plans seven road projects. Seattle Times July 24.

Proposal of $300,000.00 appropriation for the extension of roads to the North Fork of the Snoqualmie River and the Cascade River to reach mining claims; construction of road to Glacier anthracite area. Brief article.

1956 Miners work claims. Seattle Times December 30, p. 7.

North Bend area. Describes mine working on Lennox Creek, a tributary to the Taylor River.

1966 Goldmeyer Hot Springs, visiting a wilderness hot spot. Seattle Times Sunday Pictorial, Dec 11.

Goldmeyer Hot Springs in the vicinity of North Bend. Article consists mainly of photographs of the old resort.

1968 75-years ago, laying track in the Cascades. Seattle Times Sunday Pictorial, Aug. 4, pg. 22-24.

Stevens Pass and the Great Northern Railroad. Includes pictures taken the year the Cascade Tunnel was completed. Photographs presented to the Museum of History and Industry, Seattle.

1979 Monte Cristo relived. Seattle Times Sunday Pictorial, June 10, pg. 24-33.

This article recaptures the highlights of the historic town of Monte Cristo, and includes some excellent photographs.

Sherrill, Loretta

1976 Mining results were meager. Everett Herald June 29.

This article focuses on the Darrington area.

Shinkle, Florence

1982 The C.C.C. - a government program that worked. St. Louis Dispatch Sunday, April 4, p. 31.

Slavson, Morda
1971 One hundred years on the Cedar. Facsimile reproduction by Shorey Book Store, Seattle.

This book has detailed information about most of the mines and the towns that developed around the mining industry in the Cedar River drainage ca. 1850-1950. Discusses the towns of Franklin, New Castle, Cumberland, Selleck, Kerriston, etc.

Smalley, E.V.
1887 Completion of the Northern Pacific. Northwest Magazine 5(6):1-9.

A good article recounting the route of the Northern Pacific, the story of the Stampede Tunnel, etc.

Smith, Warren S.
1915 Petrology and economic geology of the Skykomish Basin. Washington School of Mines Quarterly 36:154-185.

This is mostly a report on the geology. Includes a section on the history of the Berlin Mining District (both Miller River and Money Creek sides). Also describes the mining properties of Cleopatra, Portland, Little Una, Corey, Dawson's, Seattle-Cascade, Mona and Grand Central mines.

Snohomish Eye
1897 Editorial, March 4, 1897.

Snoqualmie Community Development Program
1956 Our Snoqualmie community. The Snoqualmie Community Development Program.

Briefly covers Indians, mining, transportation, early medical practice, government, schools, churches, community organizations and Weyerhauser history in the town of Snoqualmie. Includes a small section of Denny's and Borst's mines.

Snoqualmie National Forest
1920 Snoqualmie National Forest newsletter, winter 1919-1920. On file, Mt. Baker-Snoqualmie National Forest historical files, Seattle.

This newsletter includes a short sentence or two about each district on the Forest. This provides some insight into specific operations and activities on the Forest at the time.

Snoqualmie Valley Historical Society
n.d. Notes on Snoqualmie forts from War Department records, by Peggy Corliss, Fall City. Copy on file, Mt. Baker-Snoqualmie National Forest.

Notes and quotes are useful for a historical summary, or to use as a basis for further literature research.

Snowden, Clinton A.
1909 History of Washington, Vol. 1-4. The Century History Company, New York.

A very general history, oriented toward Puget Sound industries. Contains little that would be applicable to Forest history.

Spaulding, Kenneth, editor
1956 The fur hunters of the Far West, by Alexander Ross. University of Oklahoma Press.

This book includes Ross's description of crossing the Cascades at Cascade Pass, in 1814.

Splawn, A. J.
1980 Kamiakin: last hero of the Yakimas. Caxton Printers, Caldwell, Idaho.

The story of the Yakima Indians, the Indian wars and the establishment of the Yakima Reservation.

Spring, Ira and Byron Fish
1981 Lookouts: firewatchers of the Cascades and Olympics. The Mountaineers, Seattle.

This book is a well researched and comprehensive overview of lookouts. The information is presented by forest, and is very easy to use. Many photographs are included, and a list of lookouts, by Forest and Ranger Districts is appended. Some of the information conflicts with the historical records of the Forest.

St. Louis Post-Dispatch
1982 The C.C.C.: a government program that worked. St. Louis Post Dispatch Sunday April 4, pg. 31.

A brief history of the C.C.C. program. This article captures the feelings of them men who were part of the C.C.C. Includes excerpts from an interview with Roy Wehrman, an enrollee at Camp 1631, White River District.

Steen, Harold K.
1976 The U.S. Forest Service: a history. University of Washington Press, Seattle.

This book is very broad in scope, presenting Forest Service history from a national perspective. Although it is well researched, there is no information specific to the Mt. Baker-Snoqualmie.

Stevens, John F.
1948 On reconnaissance for the Great Northern. Bulletin of the New York Public Library February, 52(2).

A report on the discovery of Stevens Pass. Includes interesting references to the lack of Indians seen in that territory at the time of the reconnaissance.

Stone, David and Brenda Stone
1980 Hard rock gold: the story of the great mines that were the heartbeat of Juneau. Juneau Centennial Committee, Juneau AK.

This book is very specific to the Juneau area, but contains a very useful glossary.

Stowe, Lyle
1978 Interview conducted by Susan Carter, July 17, 1978. Notes on file, Mt. Baker-Snoqualmie National Forest, Seattle.

Sutton, Robert K.
1978 Historic resources of the Green River watershed. In A cultural resource overview of the Green River watershed area, by Gerald Hedlend et. al. pg. 77-116. Washington Archaeological Research Center Project Report No. 59, Pullman.

Thomas, B.
1907 Report on the Dutch Miller Mine, King County, June 18, 1907. On file, Washington State Historical Society, Tacoma.

A thorough report on location, development, value of the Dutch Miller mine in the vicinity of North Bend.

Thompson, Erwin N.
1970 North Cascades N.P., Ross Lake N.R.A. and Lake Chelan N.R.A. history basic data. Office of History and Historic Architecture National Park Service, U.S.D.I.

The history written for the North Cascades National Park is undeniably tied to the history of the Mt. Baker-Snoqualmie Forest. The report addresses planning, preservation and interpretation of historic resources within the National Park. A bibliography, illustrations and several maps are included.

Throop, Gail
1979 Utterly visionary and chimerical: a federal response to the Depression. Unpublished M.A. thesis, Portland State University.

Throop's thesis presents an excellent background of the C.C.C. in the Pacific Northwest. The analysis of the architectural style which characterizes C.C.C. construction is invaluable in identification and evaluation of these historic structures. Includes a preliminary inventory of C.C.C. - constructed buildings on each Forest in the Pacific Northwest Region.

Timberman
1946 Fifty years at White River. Timberman September, 62(11):34-37.

This article provides a brief synopsis of the activities of the White River Lumber company.

Treen, Lewis A.
1909 Snoqualmie National Forest, report on proposed timber sale. Mt. Baker-Snoqualmie National Forest historical files, Seattle.

Monte Cristo area. Primarily descriptive, contains little useful information. Interesting to look at what these kinds of reports consisted of at the time.

1916a Snoqualmie improvements report, Part I - existing improvements. Mt. Baker-Snoqualmie National Forest historical files, Seattle.

Forest Service Administration, Snoqualmie National Forest. This is an invaluable source for details on roads, trails and trail shelters, ranger stations, bridges, telephone lines, and lookout (one) for 1916.

1916b Snoqualmie improvements report, Part II - proposed improvements. Mt. Baker-Snoqualmie National Forest historical files, Seattle.

Forest Service Administration. This report provides some perspectives on the patterns of use and anticipated trends of management, however, the document only addresses "proposed", improvements, not actual work completed.

Tremaine, David
1975 Indian and pioneer settlement of the Nooksack lowland, Washington, to 1890. Center for Pacific Northwest Studies Occasional Paper No. 4. Western Washington State College, Bellingham.

As the title suggests, this book focuses on the history of the lower Nooksack valley. May be used as a general source for history of the area. It includes a fairly large section on Nooksack and Lummi ethnohistory, and a bibliography.

Todd, Frances B.
1982 The trail through the woods - history of western Whatcom County, Washington. Gateway Press, Baltimore.

This history deals primarily with Maple Falls, although it does contain some information about logging, settlement and mining upriver. The main focus is on people; it contains detailed information on names and relations of the pioneer families.

U.S. Bureau of Mines and U.S. Geological Survey
1926 Mineral resources of the United States, annual report. U.S. Bureau of Mines and U.S. Geological Survey.

Reports of activities by year.

U.S. Bureau of Mines, and H. Zinder and Associates.
1963 Wilkenson area coal study. Report prepared under the supervision of the Bonneville Power Administration for the U.S. Area Redevelopment Administration, Washington D.C.

U.S. Forest Service
n.d. Travel guide, Glacier District. Mt. Baker-Snoqualmie National Forest historical files, Seattle.

A running travelogue, including references to cabins, claims and homesteads along various trails on Glacier District .

n.d. General notes, mile by mile log of the survey of the Cascade crest trail, July 15, 1935 to October 10, 1935. Mt. Baker-Snoqualmie National Forest historical files, Seattle.

A very descriptive account of the survey of the trail, includes cost estimates for construction. This report mentions wildlife, vegetation, water sources, etc., encountered along the trail.

n.d. Sauk River Lumber Co., contract. Mt. Baker-Snoqualmie National Forest historical files, Seattle.

This describes the logging communities, or the camps that the company had to supply.

n.d. Historical record for the Monte Cristo Ranger District 1946-1954 and 1979-1980. On file, Mt. Baker-Snoqualmie National Forest historical files, Seattle.

Annual reports from the Ranger District include information on improvements, fire, timber sales, recreation visitor days, etc.

n.d. Improvements, Ranger Stations. Mt. Baker-Snoqualmie National Forest historical files, Seattle.

This consists of copies of the information cards filled out for each Ranger Station on the Forest. The cards have such information as location, size of buildings, cost of construction, acres of pasturage, etc.

1908-1917 Field notes and correspondence on the Thomas Whitehouse homestead claim NW/4 Sec. 33 T21N R10E. Mt. Baker-Snoqualmie National Forest, Seattle.

Notes and correspondence consist of letters and documented results of a yearly field check on Whitehouse's trespass cabin and claim. The cabin and its contents are described.

1914-1930 Letters and memoranda on Special use permits. Mt. Baker-Snoqualmie National Forest historical files, Seattle.

Primarily consists of special use permits for logging operations in the Monte Cristo area.

1917 Report on uses of the Snoqualmie National Forest: campgrounds, Feb. 14. Mt. Baker-Snoqualmie National Forest historical files, Seattle.

1934 Report on site improvements for the proposed North Bend Ranger District headquarters, June 24. Mt. Baker-Snoqualmie National Forest historical files, Seattle.

A discussion of the proposal to move the North Bend District headquarters from Denny Creek to North Bend.

1950 Rainier National Forest, Washington: its purposes and resources. U.S.D.A. North Pacific Region, Portland. Mt. Baker-Snoqualmie National Forest historical files, Seattle.

This narrative prepared to be accompanied in a map folder by photographs, which are missing. It describes the timber, water, recreation and other resource opportunities of the Forest. The original copy has some pencil corrections by an unknown editor.

1961 The National Forest Reservation Commission, a report on progress in establishing National Forests, published on the occasion of the 50th anniversary of the Weeks Law.

Weeks Law deals with the acquisition of land for National Forest purposes. This report is primarily applicable to the eastern United States.

1975 Monte Cristo Historical Tour. Mt. Baker-Snoqualmie National Forest, Seattle.

A guide retracing the route taken by miners, loggers, homesteaders and railroad men eastward into the Cascade Mountains.

1985 Analysis of the management situation, land and resource management plan. Mt. Baker-Snoqualmie National Forest, Seattle.

var. Photographs. Cultural resources historical files, Mt. Baker-Snoqualmie National Forest, Seattle.

U.S. Park Service
1976 National Register of Historic Places Inventory - Nomination Form, for Stevens Pass Historic District. Xerox on file, Mt. Baker-Snoqualmie National Forest, Seattle.

U.S. Spruce Production Corporation
1919 History of Spruce Production Division. Kilham Stationary and Printing, Portland.

An excellent source of general information about the Spruce Production Division, with details relative to, logistics of operation, equipment and property. However, specifics of operations on the Mt. Baker-Snoqualmie are few.

Verd, Will
n.d. Mountain Loop Dedication set for October 18. Arlington Times.

This article discusses the ghost town of Monte Cristo, and contains a little information on the Monte Cristo Railroad.

Warren, James
1984 Town of Alpine now exists only in memory. Seattle Post Intelligencer Nov. 21.

A brief history of the logging town of Alpine, in the vicinity of Stevens Pass.

Washington Pioneer Project
1937 Narrative of James Longmire. As Told by the Pioneers 1:121-143.

An account of the Longmire Party's crossing of Naches Pass, prepared from personal interviews with James Longmire. The events and experiences are told as he remembered them many years later (date of interviews unknown).

Washington State Department of Public Works
1928 Railroad map of Washington. Department of Public Works, Olympia.

This map is fairly small scale, but depicts the locations of both common carriers and logging railroads in the State in 1928. It also includes stations and towns along these routes. Good to use for a general reference.

Washington State Road Commission
1896 Final report of the Board of State Road Commissioners of the State of Washington.

This report addresses the survey conducted for location of the Cascade Wagon Road.

The Washingtonian
1928 Sunset Mine stages a comeback. The Washingtonian November 8, pgs. 8, 33.

An article about the mining activity at the Sunset Copper Mine in the vicinity of Index.

Wenatchee Daily World
1910 Millions for Great Northern snow sheds. Wenatchee Daily World April 2, pg 1.

Stevens Pass and the Great Northern Railroad. This article announces the proposed construction of snow sheds shortly after the Wellington disaster.

1913a Five workman killed in slide at summit. Wenatchee Daily World January 8, pg 1.

Stevens Pass and the Great Northern Railroad. This article was written after several wooden snow sheds near Tye collapsed in a snow slide and killed five workmen. The concrete snow sheds were not damaged.

1913b 2000 men on Great Northern sheds. Wenatchee Daily World April 17, pg 5.

Stevens Pass and the Great Northern Railroad. This article announces the plans by Great Northern to construct 2-1/2 miles of snow sheds near Wellington.

1917 Great Northern Train runs wild through Cascade tunnel. Wenatchee Daily World Feb. 20, pg. 1.

Stevens Pass and the Great Northern Railroad. The story of a 36 car train wreck near Cascade Tunnel was front page news on this day.

West Coast Lumberman

1936 An unusual selective logging project. West Coast Lumberman October, 63(10):9-11.

An article on the methods employed by the Sauk River Lumber Company to implement the Forest Service's 20 percent cutting plan. The article is very specific to this plan, and does not contain much additional information.

1944 North Bend timber - 40 years of progress. West Coast Lumberman June, 71(6):68, 110.

Useful information on the North Bend Timber company, 1904-1944.

Western Construction News

1975 Article on the history of the Cascade tunnel. Western Construction July.

Stevens Pass and the Great Northern Railroad. This is a good synopsis of the construction of the Cascade tunnel.

Western Historical Publishing

1904 An illustrated history of Stevens, Ferry and Chelan Counties, State of Washington. Western Historical Publishing.

Contains pertinent information about Stevens Pass and the Great Northern Railroad; a brief summary of the history of the Cascade tunnel.

White, Victor H.

1970 Brakeman on the Great Northern. Frontier Times August - September, pg. 7-15, 53-54.

This brief biographical account was written about W.S. Dulmage, an employee of the Great Northern and eyewitness to the construction of the switchbacks as well as the tunnel across the Cascades at Stevens Pass. The author points out that some of the dates and details are inconsistent with other accounts.

Whitfield, William
1926 History of Snohomish County. Pioneer Historical Publishing, Seattle.

This is a general history of the entire county. It does not have much specific information applicable to the Mt. Baker-Snoqualmie with the exception of some information on railroads. It contains many references to locally well-known people.

Widrig, Charotte D.
1961 Homesteading on the upper Skagit was a rough but interesting life. Seattle Times Sunday, Dec. 24, p. 9.

A brief article, particularly focusing on the pioneer families, personal and biographical tales.

Wilcox, L. P.
1929 Anti-Chinese riots in Washington. Washington Historical Quarterly 20(3):204-212.

A good presentation of the situation that developed among the working class in Washington when the Northern Pacific brought several hundred Chinese to work on the lines.

Wilke, Rosemary
1973 A broad bold ledge of gold: historical facts, Monte Cristo, Washington. Facsimile reproduction of 1958 publication by Shorey Publications, Seattle.

This book contains specific details about the history of Monte Cristo, however, it is not referenced.

Wilkes, Charles
1845 Narrative of the United States Exploring Expedition 1838-1842. Lea and Blanchard, Philadelphia.

Willis, Margaret, editor
1973 Chechacos all, the pioneering of the Skagit. Skagit County Historical Series No 3, Mt. Vernon.

1975 Skagit settlers: trials and triumphs, 1890-1920. Skagit County Historical Series No 4, Mt. Vernon.

These two volumes present a history of Skagit county, compiled from contributions by several members of the Skagit County Historical Society. The history focuses a lot on settlements and people, and includes many excellent photographs which are well reference and separately indexed.

Wood, Charles and Dorothy Wood
1972 Milwaukee Road West. Superior, Seattle.

Snoqualmie Pass area. Wood and Wood present a complete and accurate history of the Chicago, Milwaukee and St. Paul Railroad, complemented by numerous photographs.

Wood, Charles R.
1968 The Northern Pacific: a pictorial history. Superior, Seattle.

Stampede Pass and the Northern Pacific Railroad. An excellent chronicle presented is through this pictorial history. This is a good reference book.

Woodhouse, Philip R.
1979 Monte Cristo. The Mountaineers, Seattle.

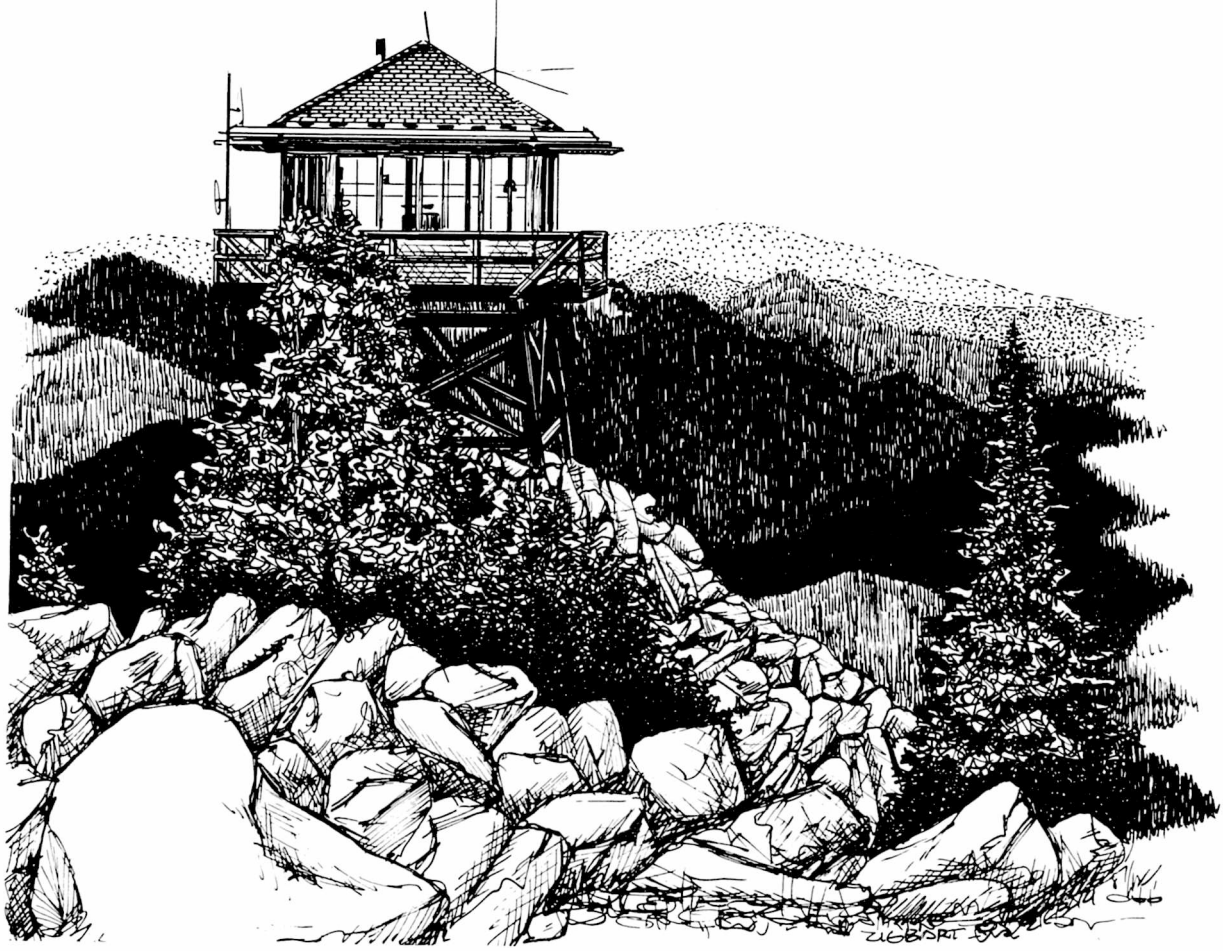
An excellent history of the mines and development of the town of Monte Cristo. Includes photographs and references.

Yonce, Frederick Jay
1969 Public land disposal in Washington. Unpublished Ph.D. dissertation, University of Washington, Seattle.

This document is particularly useful for information regarding the Legislation that influenced settlement in Washington.

V

MANAGEMENT



Program Assessment

Summary

The Cultural Resource Overview provides the context for the prehistoric, ethnographic, and historic resources on the Forest. The prehistory section describes recorded sites and places them within broader patterns of prehistory known from geographic areas adjacent to the Forest. The ethnographic section provides a model of past land and resource use. It also gives background on the history of the local Indian groups, many of whom still use the Forest for religious and cultural purposes. The historic themes developed in this document can be used to guide inventory and evaluation of historic sites. The major themes of Forest history include transportation development, mining, logging, Forest Service administration, recreation and water development. The Overview identifies areas which could be targeted for inventory and evaluation using a multiple resource approach like that used for the Stevens Pass Historic District, the Depression-Era administrative buildings and the Fire Lookouts. Specific examples will be mentioned in the Ranger District summaries.

The Overview Site List includes recorded sites, known sites which are not yet recorded, and reported, but yet unverified sites. This list can be consulted during literature searches conducted prior to field survey. The list can be electronically sorted by site name, location, site type, and theme. The site list will undoubtedly be the most dynamic portion of this document. As new sites are discovered, they will be added to the list. As sites are inventoried and evaluated, their status will change. The Overview Site List will serve as the master list of all known cultural resources on the Forest.

Ranger District Summaries

Mount Baker District

Mount Baker Ranger District is the second largest ranger district of the Forest (524,700 acres) and along with Darrington, it produces most of the harvested timber. Many prehistoric sites have been found along the Skagit River and its tributaries and recent discoveries have shown that sites are also found at higher elevations. Two sites have been found in the Baker River drainage and are mentioned in the preceding text. During the 1986 field season, after most of this overview was written, a site was found at Damfino Lakes on the High Divide Ridge between the North Fork Nooksack and Chilliwack watersheds. Surveys in the nearby North Cascade National Park in 1986 have identified several alpine/subalpine sites associated with a source of obsidian-like rock suitable for stone tool manufacture. This is the first source of volcanic glass associated with human use identified in the North Cascades of Washington State. It is likely that similar or related archaeological manifestations may be found on the Forest.

The Chilliwack, Nooksack, and Upper Skagit Indians have used the area historically, and traveled across the Cascades to the Okanogan country. Euro-American occupation centered upon mining, logging, and homesteading.

Potential historic districts include the Cascade Wagon Road, and the Mount Baker and Cascade Mining Districts.

Historic buildings which hold interpretive potential include the Glacier Public Service Center, the Austin Pass Warming Hut, community kitchens at Douglas Fir and Silver Fir Campgrounds and lookouts on Winchester Mountain, Park Butte and Hidden Lake Peak. The Glacier Public Service Center is listed on the National Register of Historic Places, and other buildings at the Glacier Ranger Station as well as Koma Kulshan Guard Station have been determined eligible as part of the Depression-Era thematic group. In 1987, the lookouts are to be nominated to the National Register as a thematic group. The lookouts on the Mt. Baker Ranger District are in very good condition, due to their routine maintenance by various user groups. Trail shelters at Silesia, Ridley, and Finney Creeks deserve evaluation and protection of their historic values in the near future.

Due to the intensive timber management program of the Mt. Baker District, it will be necessary to improve cultural resource survey efforts both before and after projects occur. Much of the area scheduled to be harvested is fairly remote, and largely unknown archaeologically. The District attracts a large number of visitors throughout the year and the interpretive potential of the District cultural resources should be developed.

Darrington District

Darrington is the largest ranger district on the Forest (561,900 acres) and along with Mount Baker, it produces the largest amount of harvested timber. Almost half of the District is wilderness, including Boulder River Wilderness, and parts of Glacier Peak and Henry M. Jackson Wildernesses. The Mountain Loop Highway, which winds its way along the Stillaguamish and Sauk River valleys, is the most heavily used recreation corridor on the Forest.

Although only a few prehistoric sites have been recorded on the Darrington District, they represent a number of different site types: a rockshelter, a petroglyph, and an isolated artifact in a riverine setting. Adjacent to the District, prehistoric sites have been found in lowland settings and on river terraces above the Stillaguamish and Pilchuck Rivers. Many more sites are expected to be found on the District as archaeological surveys proceed.

A number of locations are associated with ethnohistoric use by the Sauk-Suiattle and Stillaguamish Indians. There are 29 homestead allotments along the Suiattle River which were occupied by the Sauk-Suiattle Indians in the early part of this century. Other ethnohistoric site types identified include groves of stripped cedar trees. Historic period use is represented in the following potential historic districts: Sauk-Suiattle Native Allotments, and the Darrington, Silverton, and Monte Cristo Mining Districts.

Historic buildings which could serve as interpretive sites include some of the original and Depression-Era buildings at the Darrington Ranger Station, the Suiattle Guard Station, Kennedy Hot Springs Cabin, the French Creek Community Kitchen, and lookouts on Three Fingers Peak, Green Mountain, and Miners Ridge. The Darrington Ranger Station and Verlot Public Service Center (formerly the Monte Cristo Ranger Station) have been nominated to the National Register as part of the Depression-Era thematic group. The three lookouts are part of the lookout National Register nomination. Of these, Three Fingers Lookout is

maintained by a volunteer user group, and a similar arrangement is being considered for Green Mountain. The Verlot Public Service Center already serves as a visitor contact point and has great potential for further development of its interpretive displays. The Mackinaw, Suiattle, Sloan Creek and Buck Creek trail shelters deserve evaluation in the future.

Skykomish District

Although small in area (315,980 acres) Skykomish Ranger District contains a wealth of cultural resources. It is bisected by the Stevens Pass Historic District which contains many physical features displaying the development of the Great Northern Railroad. There is great potential for interpreting features of this historic district, including development of the railroad grade as a hiking trail and signing various locales accessible by the old Stevens Pass Highway. Because of its varied resources and uses, it will be important to develop a management plan for the Stevens Pass Historic District in the near future. The Ranger District has other areas that warrant consideration as historic districts such as the Sultan, Index, and Miller River Mining Districts.

A few prehistoric sites have been found on terraces above the Skykomish and Sultan Rivers outside the forest boundary, but until recently, no sites had been found on the Ranger District. In November of 1986, archaeologists from Eastern Washington University tested a prehistoric site in the vicinity of Skykomish. This rockshelter appears to have been occupied as a hunting camp during the late prehistoric period. Further work will shed light on the early inhabitants of the area.

The District has a strong timber program and it will be important to inventory the mining districts, many of which are located in areas scheduled for harvest. The district shares the heavily used Alpine Lakes Wilderness with the North Bend Ranger District. This area is expected to contain archaeological sites associated with lakes and travel routes. Increasing recreational use lends a greater urgency to the inventory and evaluation of prehistoric and historic sites in the Alpine Lakes.

Historic buildings suitable for interpretation include the Stevens Pass Guard Station and Evergreen Mountain Lookout (both nominated to the National Register). The Lookout is in urgent need of maintenance and stabilization. Trail shelters at Lake Janice and in Necklace Valley require evaluation.

North Bend District

North Bend Ranger District is characterized by a number of unique features. It contains two large municipal watersheds serving the cites of Seattle and Tacoma. It is the Ranger District located closest to the Seattle urban area, so it attracts high public use. Much of its total 181,650 acres is in inter-mixed ownership, which complicates management of all resources. The North Bend and Skykomish Districts jointly administer the Alpine Lakes Wilderness, which has high potential for cultural resources as well as heavy recreation use.

Recent archaeological surveys in the vicinity of Eagle Gorge and Chester Morse Lake demonstrate extensive prehistoric use in the vicinity of the North Bend District. There is even some evidence of permanent, year-around prehistoric settlements in this area. Excavations of sites in the drainage of the Snoqualmie River provide some context for prehistoric occupation and use. Lithic scatters have been found in the uplands, on ridges, along lakeshores, and associated with mountain passes. It is expected that many prehistoric sites will be found on the district, especially associated with alpine lakes and in the vicinity of the Pacific Crest. The District was used historically by the Snoqualmie Indians who ranged widely across the Cascade Mountains.

Due to its pattern of inter-mixed ownership, there has been proportionately greater road development and ground disturbance on this and the White River Ranger District as compared to the three northern districts. Because of heavy timber harvest on private lands, trees on adjacent Forest lands often blow down. Many opportunities for archaeological investigations are expected on this District with its various resource management challenges.

The North Bend Ranger District has strong historic associations with the growth and development of Seattle and Tacoma. Early transportation systems such as the Northern Pacific and the Chicago, Milwaukee and St. Paul Railroads were built through Stampede Pass and Snoqualmie Pass, respectively. Other potential historic districts include the Snoqualmie Pass Wagon Road, and the Buena Vista, Snoqualmie, and Cedar River Mining Districts.

The North Bend Ranger Station is listed on the National Register. It is an excellent site for interpretive development as is the Snoqualmie Pass Guard Station. The Lower Tuscohatchie Lake shelter may be eligible to the National Register. The Denny Creek campground already contains a good interpretive trail which deserves some rehabilitation.

White River District

The White River Ranger District contains 125,440 acres, much of which is in inter-mixed ownership. Like North Bend, the increased level of ground disturbance provides for greater visibility of the ground surface and increased potential for the discovery of archaeological sites. The White River Ranger District appears to have the highest density of archaeological sites yet found on the Forest. There are approximately 20 sites located on the Enumclaw Plateau in the valley of the White River that indicate the extent of prehistoric occupation of land near the district. Prehistoric sites are known from the Greenwater watershed, the Pacific Crest Trail, and Huckleberry Mountain. River shores and terraces, continuous ridges and trails, and alpine lakes are all settings in which to expect prehistoric sites. The highest elevation prehistoric site identified thus far on the Forest, Blue Bell Lithic Scatter at 6240 ft., occurs on the Pacific Crest Trail above Silver Creek. A recent (1986) discovery of archaeological material at Greenwater Lakes is associated with a local source of jasper, a red cryptocrystalline rock type used in stone tool manufacture. Stripped cedar trees are also present at this site. The Huckleberry Mountain sites were tested in 1979, and archaeological excavation is currently underway at the Naches Lithic Scatter, a site identified after most of this overview was written.

The area was used extensively in historic times by the Muckleshoot and probably the Yakima. A great number of prehistoric and ethnohistoric sites are expected to be identified on the White River Ranger District.

The District contains one of the few major trans-Cascadian routes in Washington that has not been developed into a highway. The Naches Trail still retains some of its historic nineteenth century character. The trail has been used by off-road vehicles for over 30 years, but some people feel that ORV use damages the historic character of the area. These issues, along with the active timber managment in the area, justify the development of a comprehensive management plan for the Naches Trail corridor in the near future.

The District contains numerous timber claim cabins dating from the early twentieth century, documenting the early American occupation of the Forest. Possible historic districts or thematic groups include the Summit Mining District, the Naches Trail, and timber claims.

Historic buildings which could serve as interpretive sites include the Silver Creek Work Center, the Dalles Community Kitchen and Suntop Lookout. Because Suntop is the only historic fire lookout on the Forest accessible by road, it attracts many visitors and deserves on-site historic interpretation.

Inventory

The Forest needs improved planning and execution of cultural resource inventory. A major obstacle to the discovery of prehistoric sites is the heavy vegetation, the low visibility of the ground surface, and the ephemeral nature of many of the prehistoric remains. New approaches must be developed to effectively find cultural resources. Intensive monitoring during road construction and timber harvest and/or systematic use of subsurface probing are possible approaches to cultural resource reconnaissance.

Through records searches, historic sites can be more easily predicted and located than prehistoric sites. This Overview identifies many areas which could be targeted for inventory using a multiple resource approach. The historic district approach has been used for the Stevens Pass Historic District and may be suitable for 14 distinct mining areas, six transportation areas, and eight logging areas. Thematic group studies have been made of the Depression-Era administrative buildings and fire lookouts and this approach may be useful for timber claim cabins, Native allotments, trail shelters, and water developments. Specific examples have been identified in the Ranger District summaries.

There is a backlog of approximately 700 sites to be inventoried and evaluated. A thematic or historic district approach would be the most efficient way to accomplish this goal. Highest priority could be assigned to those areas targeted for timber harvest and road construction over the next 10 years. However, other forces which cause deterioration of cultural resources such as natural weathering, vandalism, and heavy recreation use cannot be ignored. For instance, in some of the heavily used wilderness areas such as Alpine Lakes and Mount Baker Wildernesses, it may be appropriate to target specific mining districts. The Forest goal will be to inventory 70 new sites or two new districts or thematic groups per year.

Over 160,000 acres of the Mt. Baker-Snoqualmie National Forest have been subjected to project-driven cultural resource survey. Less than 1% of this area can be considered completely surveyed in the sense that all cultural resources have been confidently identified, recorded, and evaluated to Regional standards. Most of the cultural resource survey on the Forest has been conducted by Cultural Resource Technicians in preparation for timber sales. To a great extent, survey strategies have been determined by the location of cutting units. The level of investigation has been cursory, with a very small percentage of sale area actually inspected. In many sale areas, there is little or no ground visibility prior to disturbance, with little chance for discovering subsurface sites. Much of the survey conducted by professionals has occurred on lands which have since been exchanged out of Forest Service ownership. Areas selected for survey have been determined by project locations, and are not representative of the range of environmental zones on the Forest. For these reasons, it is not surprising that the cultural resource base of the Forest is not well documented. While prehistoric population densities were certainly lower in the mountainous terrain of the Mt. Baker-Snoqualmie National Forest than in the heavily populated lands both west and east of the Cascade Mountains, it is likely that prehistoric people occupied the Forest seasonally and used an array of resources unique to the upland environment.

All of the prehistoric sites identified so far have been found in ground exposures where vegetation is not immediately present. Many of these sites occur in areas exposed through human-caused ground disturbance: off-road vehicle routes, campsites, trails, roads and cut-over areas. This underscores the unreliability of surveys conducted in vegetated areas, and the importance of exploiting both natural and artificial exposures for locating prehistoric sites.

Nearly all of the inventory on the Forest has been driven by the requirement to comply with the National Environmental Protection Act and with section 106 of the National Historic Preservation Act. These laws require that federal agencies consider the effects of projects on cultural resources. There has been very little, if any, inventory work conducted in compliance with section 110 of the National Historic Preservation Act, which requires federal agencies to identify and evaluate <u>all</u> their cultural resources. Non-project survey will be required to inventory the cultural resources located in areas other than those scheduled for ground disturbing projects. On this Forest, there is a dire need to recover some basic data on patterns of cultural resource site distribution in order to assess site significance. It is also necessary to reduce the backlog of unrecorded sites.

There are serious obstacles to the discovery of cultural resource sites, particularly prehistoric and ethnohistoric sites. The thick vegetation obscures the cultural materials which are present. The local soils, hydrology, and climate act to destroy much of the evidence for past occupation and use. The following procedures are recommended based on the experience in other National Forests in the Pacific Northwest Region, particularly on the west side of the Cascades.

Improve Inventory during the NEPA Process

Design a Forest Inventory Plan to structure inventory on the Forest. At this time, each surveyor proposes a different strategy for each project area. Often only impact areas are inspected on the ground, in most cases, road locations and timber harvest units. These locations can change during the development of the project, and it is imperative to address all areas of potential disturbance. The inventory effort should not be limited to the impact area. While this approach appears to satisfy short-term project needs, it results in greater long-term costs because of the need to re-survey. A Forest Inventory Plan establishes a comprehensive and integrated approach to the inventory process. It generates expectations of past land and resource use based on knowledge of patterns of prehistory, ethnography, history, and a wide range of environmental factors. Methods and techniques are then prescribed to test the validity of the expectations which are subsequently revised and refined as new information becomes available.

Post-Impact Inventory

An aggressive program of post-impact monitoring to assess the reliability of the initial inventory is needed. This phase must be timed to take optimum advantage of the ground exposures resulting from project impacts. At the outset, sites are expected to be found during this phase. As more sites become known, it will be possible to more accurately predict where other sites might be found. This will require re-adjustment in the Inventory Plan set forth to guide pre-project surveys.

Non-Project Inventory

There are several areas on the Forest that hold great cultural resource potential. These include the Greenwater watershed, the Pacific Crest Trail, Huckleberry-Divide Ridge and high alpine lakes, continuous ridges, travel routes and high mountain passes on all Districts. The strategy for surveying these areas could derive from a Forest Inventory Plan which has been tailored to specific geomorphological and topographic conditions and any known patterns of past resource and land use.

Inventory of Backlog

There are over 700 sites which are listed on the Overview Site List for which there are no site records. It is important to inspect these sites and inventory them. Some will be inventoried incidentally because they fall within proposed project areas. The most effective way to reduce the backlog would be to take a historic district or thematic group approach. For instance, all sites associated with the Buena Vista Mining District could be inventoried as a group. This approach has the advantage of facilitating comparisons between sites and evaluations of site significance.

Evaluation

All cultural resources are evaluated against the criteria of the National Register of Historic Places (determination of significance) before any Federal undertaking may affect them. The evaluation of significance is the basis on

which sites are selected for further investigation, preservation and protection, or interpretation. Evaluations are critical in making decisions to permit alteration or destruction of the cultural resource. Sites are treated as individual properties, thematic groups, or historic districts. In the future, the program will emphasize evaluation of multiple resources within a broad historic context and geographic area.

Since so little is known of the prehistory of interior upland areas in the Northwest, the prehistoric sites on the Forest contain important information about the past. Of the known prehistoric archaeological sites on the Forest, most if not all, will be found eligible to the National Register. Those located in project areas or experiencing deterioration will require test excavations as part of formal evaluations. The objective of testing is to determine site boundaries and information potential. Site integrity and extent, artifact density, distribution, and diversity and the potential for chronological, stratigraphic, faunal, floral, and technological data are considered in determining the information potential of a site. Evaluations are conducted within the framework of the local archaeological record and research questions. It is not necessary for a site to be large, complex or in pristine condition in order to contribute to our knowledge of prehistory. The study of small sites around the country has been an especially productive development in recent years. The Forest probably contains fewer and smaller sites than surrounding lowlands, but their study will result in valuable new data about prehistory. While all Ranger Districts have sites in need of evaluation, the greatest workload is expected on the White River and North Bend Ranger Districts. In some cases, full-scale data recovery will follow evaluations because of proposed activities that will adversely impact sites.

The significance of historic sites lies in their association with events that have made a significant contribution to the broad patterns of our history, association with the lives of persons significant in our past, or their capacity to embody distinctive characteristics of a type, period, or method of construction. There are 70 historic sites and buildings on the Forest which have already been determined eligible to the National Register. The bulk of the backlog of unrecorded sites on the Overview Site List (over 600) are historic sites. A program of combined inventory and evaluation, using a multiple resource approach, is recommended for these sites. Presently, the top priority for evaluation on the Forest is the Naches Trail. Once cultural resources are determined eligible, there are various ways to insure their protection and preservation.

Protection

Effects to cultural resources are determined by the Forest in consultation with the Washington State Historic Preservation Officer and the Advisory Council on Historic Preservation. When a project may impact a cultural resource, there are many alternatives to consider. The project boundaries might be adjusted to avoid a site, or a modified project design might protect the resource. Mitigation measures can be employed to minimize the disturbance to the site or its setting. It may be possible to relocate a historic building or to conduct data recovery on an archaeological site. Data recovery must be guided by an approved research design. The work typically consists of site mapping, digging and screening the deposits, recording provenience information, describing and

analyzing recovered artifacts, food remains, hearths and structural features, and interpreting the results and presenting them in a publication. Documentation of a building to the standards of the Historic American Building Survey (HABS) or of a structure or feature to the standards of the Historic American Engineering Survey (HAER) may be necessary. Selection and design of mitigation and protection measures are coordinated with the State Historic Preservation Officer.

When cultural resources are selected for retention, management plans are developed to insure their preservation. Management plans address competing resources and uses, identify needs for repairs and maintenance, and provide for appropriate use and interpretation. Top priorities for management plans include the Stevens Pass Historic District and the Naches Pass Trail. These two districts are shared with the Wenatchee National Forest and the plans will be joint efforts. Programmatic Memoranda of Agreement (PMOA) can be used to streamline the consultation process with the State Historic Preservation Officer and the Advisory Council on Historic Preservation. A PMOA for the Depression-Era Forest Service administrative buildings is in place. A PMOA for the fire lookouts outlining standards for maintenance and attendant consultation would be very useful.

Natural threats to cultural resources on the Forest have not been documented. These include loss by erosion, stream channel migration, seasonal inundation and weathering. In a similar vein, the extent of vandalism or theft of cultural resources is unknown. As more cultural resources are identified and evaluated on the Forest, these problems can be assessed more accurately.

Enhancement

There are many interpretive opportunities for Forest cultural resources that have not been developed. Some of the main travel corridors through the Forest could be signed to interpret historic place names. Old historic railroad grades provide opportunities for development of trails with the railroad history interpreted through signs or brochures. The Outdoor Recreation Information Center in Seattle and the various Ranger Stations and Public Information Centers provide excellent public contact points where information on cultural resources could be presented in displays and brochures. The historic significance of the various Forest Service buildings on the National Register could be interpreted. Many recreation sites popular today have a long history of use, and this theme can be communicated to the public to enhance the experience of their visit to the National Forest. It is increasingly important to have a comprehensive assessment of the interpretive opportunities for both prehistoric and historic cultural resources before the end of the next 10 year planning period.

The general public has demonstrated strong support for the preservation and study of cultural resources. It is imperative to interpret and publicize various aspects of the Forest cultural resource program in an effort to inform and enhance public awareness of the cultural resources of the Forest. The academic and historic preservation communities recognize the exceptional value of the cultural resources on the Forest. Cooperative efforts at study and interpretation of Forest cultural resources should be developed with local universities, colleges and historic societies.

Research Framework

Archaeological sites have important scientific information about prehistory and history. The upland forests of the western Cascades have been used and occupied for thousands of years. Archaeological studies can reveal the ways people have settled and traveled through the forest, and used its many resources. In the past, archaeological research has concentrated on the coastal areas of western Washington and the Columbia River plateau, and the upland forested areas have received little attention. Many sites located within the Forest have escaped human caused disturbance and they represent some of the most pristine examples of archaeological sites in the region. Understanding the prehistory of the Cascades is critical to understanding the prehistory of the Northwest in general.

A statement of research problems should guide cultural resource management, at the level of inventory, evaluation, and data recovery. The following list presents a few of the research questions which can be addressed by archaeological studies of the Mt. Baker-Snoqualmie National Forest:

1. What is the antiquity of human use in the uplands? Which time periods are represented in the archaeological record on the Forest? Were there times in the past when particular areas were uninhabited? Is there a continuous record of human use?

2. How does occupation and use of the uplands compare with that of the lowlands? Were the uplands used during the same periods as the lowlands; how does the pattern of sites across the landscape differ? Are there differences in land use patterns across the Forest? Are there broad differences between areas north and south of Snoqualmie Pass, and can these differences be tied to environmental variation?

3. What is the range of site types on the Forest? What is the nature of the evidence for activities associated with fishing, hunting, gathering, and travel? How can different sites be recognized archaeologically? How can differences be discerned between specialized sites used for a short time versus multi-purpose sites with repeated use? Was most of the use/occupation of the Forest seasonal, or are there instances of permanent or winter settlements?

4. How did the Holocene environment change over the past 10,000 years, and how did this affect human adaptive systems? How have climatic changes affected the inhabitability of particular areas? How have patterns of glacial advance and retreat, flood cycles, river channel evolution, vulcanism, etc. altered the landscape in ways affecting human settlement? How have the availability and distribution of critical subsistence resources (plants, fish, wildlife, etc.) changed over time, and how have these changes affected human behavior?

5. How do patterns of prehistoric settlement and resource use compare with those of the historic period? How did the Indian cultures observed by the ethnographers evolve through time? Are there some areas which have attracted both prehistoric and historic use because of their concentration

of important resources? Are there patterns of prehistoric or historic use that are unique?

What are the environmental conditions that can "predict" the location of an archaeological site? From analysis of landscape features and resource distributions, can the distribution of archaeological sites be predicted? Is it possible to define a set of environmental conditions where sites are unlikely to be found? Can the Forest be stratified into different environmental zones which hold different archaeological potential?

7. How do the patterns of prehistoric use and occupation differ between forested zones and those alpine areas above timberline? Are archaeological sites easier to detect in alpine areas compared to forested areas? What survey techniques are most effective for these different areas?

8. Were the prehistoric occupants of the Forest tied more closely to cultures in the Puget Lowland to the west or the plateau to the east? Can cultural relationships be demonstrated by shared technology or materials? What is the evidence for trade across the Cascades? How did this evolve through time? It is likely that there is variability in these relationships across the Forest, north to south.

For the purpose of inventory, evaluation, and data recovery, such broad research questions must be operationalized. In other words, it will be necessary to set forth ways to answer these questions using specific archaeological data. Expectations are then tested against the recovered data. Over time, research questions are revised and restated.

Archaeological studies have the potential to elucidate other fields of scientific research. For example, wildlife and fisheries biologists may need information on the distribution of certain species before the historic period. Studies of faunal remains from archaeological sites can yield information on the presence of brown bear, elk, salmon, mountain goat and other animals of contemporary concern. Archaeological surveys can document previously unknown source areas of rock and mineral types used in stone tool manufacture. Stratigraphic layers of archaeological sites can reveal the effects of geologic events, like prehistoric volcanic eruptions. Reconstructions of the history of environmental change in specific areas can help managers predict how current uses may affect ecological systems in the future.

Future Direction

This Overview has yielded the prehistoric, ethnographic and historic context for the Forest's cultural resources and identified their great potential. The discovery of prehistoric sites has just begun, but it is already clear that their study will contribute to our knowledge of the prehistory of the Pacific Northwest. Likewise, the historic sites remain largely undocumented. The Forest must initiate inventory of <u>all</u> of its cultural resources, in addition to those affected by ground disturbing projects. A major step toward reaching these goals will be the development of a Forest Cultural Resource Inventory Plan. Post-impact survey may be an effective way to identify heretofore unidentified site types and assess the reliability of pre-project inventory. In the meantime, there are known cultural resources requiring active management. Management Plans are urgently needed for the Stevens Pass Historic

District and the Nachos Trail. Such plans will guide the prudent use and protection of resources, control competing users, and provide for interpretation of cultural resources. A management plan for the fire lookouts will give user groups, volunteers, and Forest Service maintenance people guidelines for repair and protection of these buildings. Because the Mt. Baker-Snoqualmie National Forest is located adjacent to the largest population center in the Pacific Northwest, there are ample opportunities for increasing public awareness of the value of cultural resources. This can be accomplished through interpretation and cooperative efforts at education with the area's numerous universities, colleges, and other interested groups.

VI

APPENDICES



A

Indian Treaties

TREATY WITH THE NISQUALLI, PUYALLUP, ETC., 1854.

Dec. 26, 1854.

10 Stat., 1132.
Ratified Mar. 3, 1855.
Proclaimed Apr. 10, 1855.

Articles of agreement and convention made and concluded on the She-nah-nam, or Medicine Creek, in the Territory of Washington, this twenty-sixth day of December, in the year one thousand eight hundred and fifty-four, by Isaac I. Stevens, governor and superintendent of Indian affairs of the said Territory, on the part of the United States, and the undersigned chiefs, head-men, and delegates of the Nisqually, Puyallup, Steilacoom, Squawskin, S'Homamish, Stehchass, T'Peek-sin, Squi-aitl, and Sa-heh-wamish tribes and bands of Indians, occupying the lands lying round the head of Puget's Sound and the adjacent inlets, who, for the purpose of this treaty, are to be regarded as one nation, on behalf of said tribes and bands, and duly authorized by them.

Cession to United States.

ARTICLE 1. The said tribes and bands of Indians hereby cede, relinquish, and convey to the United States, all their right, title, and interest in and to the lands and country occupied by them, bounded and described as follows, to wit: Commencing at the point on the eastern side of Admiralty Inlet, known as Point Pully, about midway between Commencement and Elliott Bays; thence running in a southeasterly direction, following the divide betweeen the waters of the Puyallup and Dwamish, or White Rivers, to the summit of the Cascade Mountains; thence southerly, along the summit of said range, to a point opposite the main source of the Skookum Chuck Creek; thence to and down said creek, to the coal mine; thence northwesterly, to the summit of the Black Hills; thence northerly, to the upper forks of the Satsop River; thence northeasterly, through the portage known as Wilkes's Portage, to Point Southworth, on the western side of Admiralty Inlet; thence around the foot of Vashon's Island, easterly and southeasterly, to the place of beginning.

Reservation for said tribes.

ARTICLE 2. There is, however, reserved for the present use and occupation of the said tribes and bands, the following tracts of land, viz: The small island called Klah-che-min, situated opposite the mouths of Hammersley's and Totten's Inlets, and separated from Hartstene Island by Peale's Passage, containing about two sections of land by estimation; a square tract containing two sections, or twelve hundred and eighty acres, on Puget's Sound, near the mouth of the She-nah-nam Creek, one mile west of the meridian line of the United States land survey, and a square tract containing two sections, or twelve hundred and eighty acres, lying on the south side of Commencement Bay; all which tracts shall be set apart, and, so far as necessary, surveyed and marked out for their exclusive use; nor shall any white man be permitted to reside upon the same without permission of the tribe and the superintendent or agent. And the said tribes and bands agree to remove to and settle upon the same within one year after the ratification of this treaty, or sooner if the means are furnished them. In the mean time, it shall be lawful for them to reside upon any ground not in the actual claim and occupation of citizens of the United States, and upon any ground claimed or occupied, if with the permission of the owner or claimant. If necessary for the public convenience, roads may be run through their reserves, and, on the other hand, the right of way with free access from the same to the nearest public highway is secured to them.

Removal thereto.

Roads to be constructed.

Rights to fish.

ARTICLE 3. The right of taking fish, at all usual and accustomed grounds and stations, is further secured to said Indians in common with all citizens of the Territory, and of erecting temporary houses for the purpose of curing, together with the privilege of hunting, gathering roots and berries, and pasturing their horses on open and unclaimed lands: *Provided, however*, That they shall not take shell-fish from any beds staked or cultivated by citizens, and that they shall alter all stallions not intended for breeding-horses, and shall keep up and confine the latter.

Payments for said cession.

ARTICLE 4. In consideration of the above session, the United States agree to pay to the said tribes and bands the sum of thirty-two thousand five hundred dollars, in the following manner, that is to say: For the first year after the ratification hereof, three thousand two hundred and fifty dollars; for the next two years, three thousand dollars each

year; for the next three years, two thousand dollars each year; for the next four years fifteen hundred dollars each year; for the next five years twelve hundred dollars each year; and for the next five years one thousand dollars each year; all which said sums of money shall be applied to the use and benefit of the said Indians, under the direction of the President of the United States, who may from time to time determine, at his discretion, upon what beneficial objects to expend the same. And the superintendent of Indian affairs, or other proper officer, shall each year inform the President of the wishes of said Indians in respect thereto.

How applied.

Expenses of removal.

ARTICLE 5. To enable the said Indians to remove to and settle upon their aforesaid reservations, and to clear, fence, and break up a sufficient quantity of land for cultivation, the United States further agree to pay the sum of three thousand two hundred and fifty dollars, to be laid out and expended under the direction of the President, and in such manner as he shall approve.

Removal from said reservation.

ARTICLE 6. The President may hereafter, when in his opinion the interests of the Territory may require, and the welfare of the said Indians be promoted, remove them from either or all of said reservations to such other suitable place or places within said Territory as he may deem fit, on remunerating them for their improvements and the expenses of their removal, or may consolidate them with other friendly tribes or bands. And he may further, at his discretion, cause the whole or any portion of the lands hereby reserved, or of such other land as may be selected in lieu thereof, to be surveyed into lots, and assign the same to such individuals or families as are willing to avail themselves of the privilege, and will locate on the same as a permanent home, on the same terms and subject to the same regulations as are provided in the sixth article of the treaty with the Omahas, so far as the same may be applicable. Any substantial improvements heretofore made by any Indian, and which he shall be compelled to abandon in consequence of this treaty, shall be valued under the direction of the President, and payment be made accordingly therefor.

Ante, p. 612.

Annuities not to be taken for debt.

ARTICLE 7. The annuities of the aforesaid tribes and bands shall not be taken to pay the debts of individuals.

Stipulations respecting conduct of Indians.

ARTICLE 8. The aforesaid tribes and bands acknowledge their dependence on the Government of the United States, and promise to be friendly with all citizens thereof, and pledge themselves to commit no depredations on the property of such citizens. And should any one or more of them violate this pledge, and the fact be satisfactorily proved before the agent, the property taken shall be returned, or in default thereof, or if injured or destroyed, compensation may be made by the Government out of their annuities. Nor will they make war on any other tribe except in self-defence, but will submit all matters of difference between them and other Indians to the Government of the United States, or its agent, for decision, and abide thereby. And if any of the said Indians commit any depredations on any other Indians within the Territory, the same rule shall prevail as that prescribed in this article, in cases of depredations against citizens. And the said tribes agree not to shelter or conceal offenders against the laws of the United States, but to deliver them up to the authorities for trial.

Intemperance.

ARTICLE 9. The above tribes and bands are desirous to exclude from their reservations the use of ardent spirits, and to prevent their people from drinking the same; and therefore it is provided, that any Indian belonging to said tribes, who is guilty of bringing liquor into said reservations, or who drinks liquor, may have his or her proportion of the annuities withheld from him or her for such time as the President may determine.

Schools, shops, etc

ARTICLE 10. The United States further agree to establish at the general agency for the district of Puget's Sound, within one year from the ratification hereof, and to support, for a period of twenty years, an agricultural and industrial school, to be free to children of the said tribes and bands, in common with those of the other tribes of said district, and to provide the said school with a suitable instructor or instructors, and also to provide a smithy and carpenter's shop, and furnish them with the necessary tools, and employ a blacksmith, carpenter, and farmer, for the term of twenty years, to instruct the Indians in their respective occupations. And the United States further agree to employ a physician to reside at the said central agency,

who shall furnish medicine and advice to their sick, and shall vaccinate them; the expenses of the said school, shops, employées, and medical attendance, to be defrayed by the United States, and not deducted from the annuities.

Slaves to be freed.

ARTICLE 11. The said tribes and bands agree to free all slaves now held by them, and not to purchase or acquire others hereafter.

Trade out of the limits of the United States forbidden.

Foreign Indians not to reside on reservation.

ARTICLE 12. The said tribes and bands finally agree not to trade at Vancouver's Island, or elsewhere out of the dominions of the United States; nor shall foreign Indians be permitted to reside in their reservations without consent of the superintendent or agent.

Treaty, when to take effect.

ARTICLE 13. This treaty shall be obligatory on the contracting parties as soon as the same shall be ratified by the President and Senate of the United States.

In testimony whereof, the said Isaac I. Stevens, governor and superintendent of Indian Affairs, and the undersigned chiefs, headmen, and delegates of the aforesaid tribes and bands, have hereunto set their hands and seals at the place and on the day and year hereinbefore written.

Isaac I. Stevens, [L. S.]
Governor and Superintendent Territory of Washington.

Qui-ee-metl, his x mark.	[L. S.]	Klo-out, his x mark.	[L. S.]
Sno-ho-dumset, his x mark.	[L. S.]	Se-uch-ka-nam, his x mark.	[L. S.]
Lesh-high, his x mark.	[L. S.]	Ske-mah-han, his x mark.	[L. S.]
Slip-o-elm, his x mark.	[L. S.]	Wuts-un-a-pum, his x mark.	[L. S.]
Kwi-ats, his x mark.	[L. S.]	Quuts-a-tadm, his x mark.	[L. S.]
Stee-high, his x mark.	[L. S.]	Quut-a-heh-mtsn, his x mark.	[L. S.]
Di-a-keh, his x mark.	[L. S.]	Yah-leh-chn, his x mark.	[L. S.]
Hi-ten, his x mark.	[L. S.]	To-lahl-kut, his x mark.	[L. S.]
Squa-ta-hun, his x mark.	[L. S.]	Yul-lout, his x mark.	[L. S.]
Kahk-tse-min, his x mark.	[L. S.]	See-ahts-oot-soot, his x mark.	[L. S.]
Sonan-o-yutl, his x mark.	[L. S.]	Ye-takho, his x mark.	[L. S.]
Kl-tehp, his x mark.	[L. S.]	We-po-it-ee, his x mark.	[L. S.]
Sahl-ko-min, his x mark.	[L. S.]	Kah-sld, his x mark.	[L. S.]
T'bet-ste-heh-bit, his x mark.	[L. S.]	La'h-hom-kan, his x mark.	[L. S.]
Tcha-hoos-tan, his x mark.	[L. S.]	Pah-how-at-ish, his x mark.	[L. S.]
Ke-cha-hat, his x mark.	[L. S.]	Swe-yehm, his x mark.	[L. S.]
Spee-peh, his x mark.	[L. S.]	Sah-hwill, his x mark.	[L. S.]
Swe-yah-tum, his x mark.	[L. S.]	Se-kwaht, his x mark.	[L. S.]
Cha-achsh, his x mark.	[L. S.]	Kah-hum-klt, his x mark.	[L. S.]
Pich-kehd, his x mark.	[L. S.]	Yah-kwo-bah, his x mark.	[L. S.]
S'Klah-o-sum, his x mark.	[L. S.]	Wut-sah-le-wun, his x mark.	[L. S.]
Sah-le-tatl, his x mark.	[L. S.]	Sah-ba-hat, his x mark.	[L. S.]
See-lup, his x mark.	[L. S.]	Tel-e-kish, his x mark.	[L. S.]
E-la-kah-ka, his x mark.	[L. S.]	Swe-keh-nam, his x mark.	[L. S.]
Slug-yeh, his x mark.	[L. S.]	Sit-oo-ah, his x mark.	[L. S.]
Hi-nuk, his x mark.	[L. S.]	Ko-quel-a-cut, his x mark.	[L. S.]
Ma-mo-nish, his x mark.	[L. S.]	Jack, his x mark.	[L. S.]
Cheels, his x mark.	[L. S.]	Keh-kise-bel-lo, his x mark.	[L. S.]
Knutcanu, his x mark.	[L. S.]	Go-yeh-hn, his x mark.	[L. S.]
Bats-ta-kobe, his x mark.	[L. S.]	Sah-putsh, his x mark.	[L. S.]
Win-ne-ya, his x mark.	[L. S.]	William, his x mark.	[L. S.]

Executed in the presence of us—

M. T. Simmons, Indian agent.
James Doty, secretary of the commission.
C. H. Mason, secretary Washington Territory.
W. A. Slaughter, first lieutenant, Fourth Infantry.
James McAlister,
E. Giddings, jr.
George Shazer,
Henry D. Cock,
S. S. Ford, jr.,
John W. McAlister,
Clovington Cushman,
Peter Anderson,
Samuel Klady,
W. H. Pullen,
P. O. Hough,
E. R. Tyerall,
George Gibbs,
Benj. F. Shaw, interpreter,
Hazard Stevens.

copied from
Laws and Treaties, Vol. II
Kappler, C.J.
GPO 1904 Indian Affairs

TREATY WITH THE DWAMISH, SUQUAMISH, ETC., 1855.

Jan. 22, 1855.

12 Stat. 927.
Ratified Mar. 8, 1859.
Proclaimed Apr. 11, 1859.

Articles of agreement and convention made and concluded at Múckl-te-óh, or Point Elliott, in the Territory of Washington, this twenty-second day of January, eighteen hundred and fifty-five, by Isaac I. Stevens, governor and superintendent of Indian affairs for the said Territory, on the part of the United States, and the undersigned chiefs, head-men and delegates of the Dwámish, Suquámish, Sk-táhl-mish, Sam-áhmish, Smalh-kamish, Skope-áhmish, St-káh-mish, Snoqualmoo, Skai-wha-mish, N'Quentl-má-mish, Sk-táh-le-jum, Stoluck-whá-mish, Sno-ho-mish, Skágit, Kik-i-állus, Swin-á-mish, Squin-áh-mish, Sah-ku-méhu, Noo-whá-ha, Nook-wa-cháh-mish, Mee-sée-qua-guilch, Cho-bah-áh-bish, and other allied and subordinate tribes and bands of Indians occupying certain lands situated in said Territory of Washington, on behalf of said tribes, and duly authorized by them.

Cession of lands to the United States.

ARTICLE 1. The said tribes and bands of Indians hereby cede, relinquish, and convey to the United States all their right, title, and interest in and to the lands and country occupied by them, bounded and described as follows: Commencing at a point on the eastern side of Admiralty Inlet, known as Point Pully, about midway between Commencement and Elliott Bays; thence eastwardly, running along the north line of lands heretofore ceded to the United States by the Nisqually, Puyallup, and other Indians, to the summit of the Cascade range of mountains; thence northwardly, following the summit of said range to the 49th parallel of north latitude; thence west, along said parallel to the middle of the Gulf of Georgia; thence through the middle of said gulf and the main channel through the Canal de Arro to the Straits of Fuca, and crossing the same through the middle of Admiralty Inlet to Suquamish Head; thence southwesterly, through the peninsula, and following the divide between Hood's Canal and Admiralty Inlet to the portage known as Wilkes' Portage; thence northeastwardly, and following the line of lands heretofore ceded as aforesaid to Point Southworth, on the western side of Admiralty Inlet, and thence around the foot of Vashon's Island eastwardly and southeastwardly to the place of beginning, including all the islands comprised within said boundaries, and all the right, title, and interest of the said tribes and bands to any lands within the territory of the United States.

Boundaries.

Reservation.

ARTICLE 2. There is, however, reserved for the present use and occupation of the said tribes and bands the following tracts of land, viz: the amount of two sections, or twelve hundred and eighty acres, surrounding the small bight at the head of Port Madison, called by the Indians Noo-sohk-um; the amount of two sections, or twelve hundred and eighty acres, on the north side Hwhomish Bay and the creek emptying into the same called Kwilt-seh-da, the peninsula at the southeastern end of Perry's Island, called Sháis-quihl, and the island called Chah-choo-sen, situated in the Lummi River at the point of separation of the mouths emptying respectively into Bellingham Bay and the Gulf of Georgia. All which tracts shall be set apart, and so far as necessary surveyed and marked out for their exclusive use; nor shall any white man be permitted to reside upon the same without permission of the said tribes or bands, and of the superintendent or agent, but, if necessary for the public convenience, roads may be run through the said reserves, the Indians being compensated for any damage thereby done them.

Whites not to reside thereon unless, etc.

Further reservation for schools.

ARTICLE 3. There is also reserved from out the lands hereby ceded the amount of thirty-six sections, or one township of land, on the northeastern shore of Port Gardner, and north of the mouth of Snohomish River, including Tulalip Bay and the before-mentioned Kwilt-seh-da Creek, for the purpose of establishing thereon an agricultural and industrial school, as hereinafter mentioned and agreed, and with a view of ultimately drawing thereto and settling thereon all the Indians living west of the Cascade Mountains in said Territory. *Provided, however*, That the President may establish the central agency and general reservation at such other point as he may deem for the benefit of the Indians.

Tribes to settle on reservation within one year.

ARTICLE 4. The said tribes and bands agree to remove to and settle upon the said first above-mentioned reservations within one year after

the ratification of this treaty, or sooner, if the means are furnished them. In the mean time it shall be lawful for them to reside upon any land not in the actual claim and occupation of citizens of the United States, and upon any land claimed or occupied, if with the permission of the owner.

Rights and privileges secured to Indians.

ARTICLE 5. The right of taking fish at usual and accustomed grounds and stations is further secured to said Indians in common with all citizens of the Territory, and of erecting temporary houses for the purpose of curing, together with the privilege of hunting and gathering roots and berries on open and unclaimed lands. *Provided, however,* That they shall not take shell-fish from any beds staked or cultivated by citizens.

Payment by the United States.

ARTICLE 6. In consideration of the above cession, the United States agree to pay to the said tribes and bands the sum of one hundred and fifty thousand dollars, in the following manner—that is to say: For the first year after the ratification hereof, fifteen thousand dollars; for the next two year, twelve thousand dollars each year; for the next three years, ten thousand dollars each year; for the next four years, seven thousand five hundred dollars each years; for the next five years, six thousand dollars each year; and for the last five years, four thousand two hundred and fifty dollars each year. All which said sums of money shall be applied to the use and benefit of the said Indians, under the direction of the President of the United States, who may, from time to time, determine at his discretion upon what beneficial objects to expend the same; and the superintendent of Indian affairs, or other proper officer, shall each year inform the President of the wishes of said Indians in respect thereto.

How to be applied.

Indians may be removed to reservation etc.

ARTICLE 7. The President may hereafter, when in his opinion the interests of the Territory shall require and the welfare of the said Indians be promoted, remove them from either or all of the special reservations hereinbefore made to the said general reservation, or such other suitable place within said Territory as he may deem fit, on remunerating them for their improvements and the expenses of such removal, or may consolidate them with other friendly tribes or bands; and he may further at his discretion cause the whole or any portion of the lands hereby reserved, or of such other land as may be selected in lieu thereof, to be surveyed into lots, and assign the same to such individuals or families as are willing to avail themselves of the privilege, and will locate on the same as a permanent home on the same terms and subject to the same regulations as are provided in the sixth article of the treaty with the Omahas, so far as the same may be applicable. Any substantial improvements heretofore made by any Indian, and which he shall be compelled to abandon in consequence of this treaty, shall be valued under the direction of the President and payment made accordingly therefor.

Lots may be assigned to individuals.

Ante, p. 612.

ARTICLE 8. The annuities of the aforesaid tribes and bands shall not be taken to pay the debts of individuals.

Tribes to preserve friendly relations.

ARTICLE 9. The said tribes and bands acknowledge their dependence on the Government of the United States, and promise to be friendly with all citizens thereof, and they pledge themselves to commit no depredations on the property of such citizens. Should any one or more of them violate this pledge, and the fact be satisfactorily proven before the agent, the property taken shall be returned, or in default thereof, of if injured or destroyed, compensation may be made by the Government out of their annuities. Nor will they make war on any other tribe except in self-defence, but will submit all matters of difference between them and the other Indians to the Government of the United States or its agent for decision, and abide thereby. And if any of the said Indians commit depredations on other Indians within the Territory the same rule shall prevail as that prescribed in this article in cases of depredations against citizens. And the said tribes agree not to shelter or conceal offenders against the laws of the United States, but to deliver them up to the authorities for trial.

To pay for depredations, not to make war, etc.

To surrender offenders.

Annuities to be withheld from those who drink, etc., ardent spirits.

ARTICLE 10. The above tribes and bands are desirous to exclude from their reservations the use of ardent spirits, and to prevent their people from drinking the same, and therefore it is provided that any Indian belonging to said tribe who is guilty of bringing liquor into said reservations, or who drinks liquor, may have his or her proportion of the annuities withheld from him or her for such time as the President may determine

Tribes to free all slaves and not to acquire others.

ARTICLE 11. The said tribes and bands agree to free all slaves now held by them and not to purchase or acquire others hereafter.

Not to trade out of the United States.

ARTICLE 12. The said tribes and bands further agree not to trade at Vancouver's Island or elsewhere out of the dominions of the United States, nor shall foreign Indians be permitted to reside in their reservations without consent of the superintendent or agent.

$15,000 appropriated for expenses of removal and settlement.

ARTICLE 13. To enable the said Indians to remove to and settle upon their aforesaid reservations, and to clear, fence, and break up a sufficient quantity of land for cultivation, the United States further agree to pay the sum of fifteen thousand dollars to be laid out and expended under the direction of the President and in such manner as he shall approve.

United States to establish school and provide instructors, furnish mechanics, shops, physicians, etc.

ARTICLE 14. The United States further agree to establish at the general agency for the district of Puget's Sound, within one year from the ratification hereof, and to support for a period of twenty years, an agricultural and industrial school, to be free to children of the said tribes and bands in common with those of the other tribes of said district, and to provide the said school with a suitable instructor or instructors, and also to provide a smithy and carpenter's shop, and furnish them with the necessary tools, and employ a blacksmith, carpenter, and farmer for the like term of twenty years to instruct the Indians in their respective occupations. And the United States finally agree to employ a physician to reside at the said central agency, who shall furnish medicine and advice to their sick, and shall vaccinate them; the expenses of said school, shops, persons employed, and medical attendance to be defrayed by the United States, and not deducted from the annuities.

Treaty, when to take effect.

ARTICLE 15. This treaty shall be obligatory on the contracting parties as soon as the same shall be ratified by the President and Senate of the United States.

In testimony whereof, the said Isaac I. Stevens, governor and superintendent of Indian affairs, and the undersigned chiefs, headmen, and delegates of the aforesaid tribes and bands of Indians, have hereunto set their hands and seals, at the place and on the day and year hereinbefore written.

Isaac I. Stevens, Governor and Superintendent. [L. S.]

Seattle, Chief of the Dwamish and Suquamish tribes, his x mark. [L. S.]
Pat-ka-nam, Chief of the Snoqualmoo, Snohomish and other tribes, his x mark. [L. S.]
Chow-its-hoot, Chief of the Lummi and other tribes, his x mark. [L. S.]
Goliah, Chief of the Skagits and other allied tribes, his x mark. [L. S.]
Kwallattum, or General Pierce, Sub-chief of the Skagit tribe, his x mark. [L. S.]
S'hootst-hoot, Sub-chief of Snohomish, his x mark. [L. S.]
Snah-talc, or Bonaparte, Sub-chief of Snohomish, his x mark. [L. S.]
Squush-um, or The Smoke, Sub-chief of the Snoqualmoo, his x mark. [L. S.]
See-alla-pa-han, or The Priest, Sub-chief of Sk-tah-le-jum, his x mark. [L. S.]
He-uch-ka-nam, or George Bonaparte, Sub-chief of Snohomish, his x mark. [L. S.]
Tse-nah-talc, or Joseph Bonaparte, Sub-chief of Snohomish, his x mark. [L. S.]
Ns'ski-oos, or Jackson, Sub-chief of Snohomish, his x mark. [L. S.]
S'h'-cheh-oos, or General Washington, Sub-chief of Lummi tribe, his x mark. [L. S.]
Whai-lan-hu, or Davy Crockett, Sub-chief of Lummi tribe, his x mark. [L. S.]
She-ah-delt-hu, Sub-chief of Lummi tribe, his x mark. [L. S.]
Kwult-seh, Sub-chief of Lummi tribe, his x mark. [L. S.]
Wats-ka-lah-tchie, or John Hobtsthoot, Sub-chief of Snohomish, his x mark. [L. S.]
Smeh-mai-hu, Sub-chief of Skaiwha-mish, his x mark. [L. S.]
Slat-eah-ka-nam, Sub-chief of Snoqualmoo, his x mark. [L. S.]
St'hau-ai, Sub-chief of Snoqualmoo, his x mark. [L. S.]
Luge-ken, Sub-chief of Skai-whamish, his x mark. [L. S.]
S'heht-soolt, or Peter, Sub-chief of Snohomish, his x mark. [L. S.]
Do-queh-oo-satl, Snoqualmoo tribe, his x mark. [L. S.]
John Kanam, Snoqualmoo subchief, his x mark. [L. S.]
Klemsh-ka-nam, Snoqualmoo, his x mark. [L. S.]
Ts'huahntl, Dwa-mish sub-chief, his x mark. [L. S.]
Kwuss-ka-nam, or George Snatelum, Sen., Skagit tribe, his x mark. [L. S.]
Hel-mits, or George Snatelum, Skagit sub-chief, his x mark. [L. S.]
S'kwai-kwi, Skagit tribe, sub-chief, his x mark. [L. S.]
Seh-lek-qu, Sub-chief Lummi tribe, his x mark. [L. S.]
Tse-sum-ten, Lummi tribe, his x mark. [L. S.]
Klt-hahl-ten, Lummi tribe, his x mark. [L. S.]
Kut-ta-kanam, or John, Lummi tribe, his x mark. [L. S.]
Ch-lah-ben, Noo-qua-cha-mish band, his x mark. [L. S.]
Noo-heh-oos, Snoqualmoo tribe, his x mark. [L. S.]

Kwull-et-hu, Lummi tribe, his x mark. [L. S.]
Kleh-kent-soot, Skagit tribe, his x mark. [L. S.]
Sohn-heh-ovs, Skagit tribe, his x mark. [L. S.]
S'deh-ap-kan, or General Warren, Skagit tribe, his x mark. [L. S.]
Chul-whil-tan, Sub-chief of Suquamish tribe, his x mark. [L. S.]
Ske-eh-tum, Skagit tribe, his x mark. [L. S.]
Patchkanam, or Dome, Skagit tribe, his x mark. [L. S.]
Sats-Kanam, Squin-ah-nush tribe, his x mark. [L. S.]
Sd-zo-mahtl, Kik-ial-lus band, his x mark. [L. S.]
Dahtl-de-min, Sub-chief of Sah-ku-meh-hu, his x mark. [L. S.]
Sd'zek-du-num, Me-sek-wi-guilse sub-chief, his x mark. [L. S.]
Now-a-chais, Sub-chief of Dwamish, his x mark. [L. S.]
Mis-lo-tche, or Wah-hehl-tchoo, Sub-chief of Suquamish, his x mark. [L. S.]
Sloo-noksh-tan, or Jim, Suquamish tribe, his x mark. [L. S.]
Moo-whah-lad-hu, or Jack, Suquamish tribe, his x mark. [L. S.]
Too-leh-plan, Suquamish tribe, his x mark. [L. S.]
Ha-seh-doo-an, or Keo-kuck, Dwamish tribe, his x mark. [L. S.]
Hoovilt-meh-tum, Sub-chief of Suquamish, his x mark. [L. S.]
We-ai-pah, Skaiwhamish tribe, his x mark. [L. S.]
S'ah-an-hu, or Hallam, Snohomish tribe, his x mark. [L. S.]
She-hope, or General Pierce, Skagit tribe, his x mark. [L. S.]
Hwn-lah-lakq, or Thomas Jefferson, Lummi tribe, his x mark. [L. S.]
Cht-simpt, Lummi tribe, his x mark. [L. S.]
Hweh-uk, Snoqualmoo tribe, his x mark. [L. S.]
Peh-nus, Skai-whamish tribe, his x mark. [L. S.]
Yim-ka-dam, Snoqualmoo tribe, his x mark. [L. S]
Twooi-as-kut, Skaiwhamish tribe, his x mark. [L. S.]
Luch-al-kanam, Snoqualmoo tribe, his x mark. [L. S.]
S'hoot-kanam, Snoqualmoo tribe, his x mark. [L. S.]
Sme-a-kanam, Snoqualmoo tribe, his x mark. [L. S.]
Sad-zis-keh, Snoqualmoo, his x mark. [L. S.]
Heh-mahl, Skaiwhamish band, his x mark. [L. S.]
Charley, Skagit tribe, his x mark. [L. S.]
Sampson, Skagit tribe, his x mark. [L. S.]
John Taylor, Snohomish tribe, his x mark. [L. S.]
Hatch-kwentum, Skagit tribe, his x mark. [L. S.]
Yo-i-kum, Skagit tribe, his x mark. [L. S.]
T'kwa-ma-han, Skagit tribe, his x mark. [L. S.]
Sto-dum-kan, Swinamish band, his x mark. [L. S.]
Be-lole, Swinamish band, his x mark. [L. S.]
D'zo-lole-gwam-hu, Skagit tribe, his x mark. [L. S.]
Steh-shail, William, Skaiwhamish band, his x mark. [L. S.]
Kel-kahl-tsoot, Swinamish tribe, his x mark. [L. S.]
Pat-sen, Skagit tribe, his x mark. [L. S.]
Pat-teh-us, Noo-wha-ah sub-chief, his x mark. [L. S.]
S'hoolk-ka-nam, Lummi sub-chief, his x mark. [L. S.]
Ch-lok-suts, Lummi sub-chief, his x mark. [L. S.]

Executed in the presence of us—

M. T. Simmons, Indian agent.
C. H. Mason, Secretary of Washington Territory.
Benj. F. Shaw, Interpreter.
Chas. M. Hitchcock.
H. A. Goldsborough.
George Gibbs.
John H. Scranton.
Henry D. Cock.
S. S. Ford, jr.
Orrington Cushman.
Ellis Barnes.
R. S. Bailey.
S. M. Collins.
Lafayetee Balch.
E. S. Fowler.
J. H. Hall.
Rob't Davis.

copied from
Laws and Treaties, Vol. II
Kappler, C.J.
GPO 1904 Indian Affairs

B

Glossary

GLOSSARY

Altithermal - A climatic period, between approximately 7,000 and 4,000 B.P., characterized by higher temperatures than those prevailing at present.

Anathermal - A climatic period, between approximately 9,000 and 7,000 B.P., characterized by cooler temperatures and moister conditions than prevailing at present.

B.P. - before present.

batholith - a great mass of intruded igneous rock that extends down to an unknown depth.

caldera - a large basin-shaped volcanic depression.

chronology - an arrangement in order of time.

cryptocrystalline silicate (ccs) - rock with a crystalline structure visible only under high magnification, and with silica (such as quartz, chalcedony and/or opal) as a major constituent; chert.

dendrochronology - Tree ring dating. A relative sequence may be obtained for a specific area, as moisture, temperature and water availability are controlling factors in annual ring development patterns.

Dentalium - Species of mollusk with a tusk-like shell, open at both ends. Lives in shallow and deep water of the Pacific Ocean; tusk shells.

detritus - fragmentary rock material; chipping debris from the manufacture of stone tools.

ethnography - a detailed written description of a particular culture.

ethnohistory - the description of past lifeways as described in the historic literature.

Euro-American - American of European descent.

isostatic adjustment - an equilibrium condition in which elevated masses (such as continents) are compensated by a mass deficiency under the crust beneath them (as if they were floating) (American Geological Institute 1957).

lanceolate - shaped like a lance; tapering to a point from the apex.

lithic - stone; made of stone.

midden - an accumulation of refuse left from human use.

obsidian hydration - Chipped obsidian absorbs water from the atmosphere and forms a hydration layer. Once the water penetrates from the surface, it continues to be absorbed as long as the surface is exposed, and this layer

increases in thickness at a constant rate. If the rate of hydration in a given locality is know, it should be possible to assess dates +- 10 percent of the true age of the obsidian, from 10 years to millions of years (Joukowsky 1980:455).

petroglyph- rock carving.

pharmacopoeia - the body of information dealing with medicines and drugs and their properties.

pictograph - rock painting.

Pleistocene - In geologic time, the earlier of the two epochs of the Quaternary period (approx. 2-3 million to 15,000 years ago).

plumbago - graphite.

radiocarbon dating (C^{14}) - Radiocarbon, present in all living organisms, disintegrates at a known and constant rate after the organism dies. The amount of C^{14} left in wood, bone or shell found in an archaeological context can be measured. The internationally accepted standard for the rate of decay of C^{14} is 5,730 +/- 40 years, known as the "half life." A radiocarbon date is expressed with a standard deviation.

refugia - areas of relatively unaltered climate that are inhabited by plants and animals during a period of climatic change, such as glaciation.

Sahaptin - a language family spoken by the people of the southern Columbia River Basin of eastern Washington. These include the Kittitas, Yakima, Klickitat, Wayampum, Umitilla, Cayuse, Walula, Wanapum, Wauyukma, Palus, and the Nez Perce (Ray 1936:107).

Salishan - a language family spoken by the people of the northern Columbia River Basin of eastern Washington. These include the Lakes, Kalispel, Coeur d'Alene, Spokanes, Colville, Chewelah, Sanpoil, Nespelem, Southern Okanogan, Methow, Chelan, Wenatchi, and Columbia (Ray 1936:107).

seriate - arrange in a series or orderly sequence.

stade - an interval of glacial advance during an overall period of glaciation.

subsistence - the mode of obtaining necessities - food, shelter.

temporal - of or relating to time; chronological.

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C

Historical Land Files

Appendix C

Historical Lands Files
Mt. Baker–Snoqualmie National Forest

LOCATION	SEC.		NAME/TITLE	DATE	STATEMENT AND CERTIFICATE OF AWARD	GRAZING PERMIT	INDIAN ALLOTMENT APPLICATION	NOTICE OF INTENT TO MAKE PROOF	UNPATENTED	PATENTED	CORRESPONDENCE	APPLICATION	REPORT ON (FOREST/AGR.) HOMESTEAD APPLICATION	LEGAL PAPERS	NOTICE FOR PUBLICATION	REPORT ON HOMESTEAD CLAIM	REPORT ON AGRICULTURAL SETTLEMENT	REPORT ON MINING CLAIMS	MANAGEMENT PLAN	REPORT ON MILL-SITE CLAIM	SPECIAL USE PERMIT	REPORT ON CONDITION OF SPECIAL-USE AREA	REPORT ON APPLICATION FOR SUP	ORE TESTING	NOTICE OF APPLICATION FOR PATENT	MAPS	PHOTOS	TESTIMONY	SURVEY NOTES	ADMINISTRATIVE SITE	POWER POSSIBILITIES FORM	PURCHASE ORDER	HISTORICAL RECORD FOR BUILDINGS	REPORT ON TRESPASS	REPORT
T33N R7E	3	(portions of)	Clarke, C.W.	1923						X	X			X																						
	4	"																																	
	5	"																																	
	9	"																																	
	10	"																																	
	14	"																																	
	15	"																																	
T34N R7E	34	SW 1/4 NE 1/4																																	
	35	SW 1/4 SW 1/4																																	
		Marblemount	McMillan, John H.	1922-23					X		X																								
		Marblemount	McMillan, Mrs John H.	1925					X		X																	X							
			Otis, Frank L.	1906-07							X		X													X									
			Northern Light et al.	1913-14						X	X														X										
.			Nankin Lode	1910-12					X		X														X										
T40N R8E			Rottler, Ernest W.	1906-07					X		X		X													X									
			Babbitt, Howell T.	1922					X		X																								
		North Cascades Nat'l Park	Bonita Mining Co.	1901-09					X		X						X																		
T39N R8E			Baird, E.C.	1907-13					X	X	X			X			X							X				X							
		Mt. Baker Mining Dist.	Baird, E.C.	1909-19					X		X																								
T35N R14E			Silver Tip Mining & Power Co.	1915						X	X				X																				
T39N R9E			Strickland, J.J.	1906-07					X		X															X									
T35N R6E	10		British Mining Co.	1908-15						X	X														X	X		X							
T39N R8E		(on Wells Cr.)	Thompson, Charles	1908-09					X		X																								

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T40N R8E	31	SW 1/4	Hisintainer, Felix	1928						X																								
		Benson Creek	Trapper Lode	1907					X	X						X									X									
		Slate Creek	Allen, John B. et al.	1907					X	X						X																		
		Slate Creek	Whistler Lode	1911					X	X															X									
		Slate Creek	Whistler Mill Site	1911-12				X		X								X						X		X								
		Slate Creek	Allen, John B.	1905-09					X	X						X									X									
		Slate Creek	Lowman, Will A.	1911-12					X	X															X									
		Slate Creek	Lena Lode	1911						X																								
T39N R9E	19	Heather Inn	Mt. Baker Lodge Co.	1945-48					X	X									X															
T39N R9E	19	(Water Transmission)	Mt. Baker Lodge Co.	1930-46					X	X									X	X														
T39N R9E	19	SW 1/4 NE 1/4	Mt. Baker Lodge Co.	1950					X	X									X															
T39N R9E	19	SE 1/4 NW 1/4	Mt. Baker Lodge Co.	1945-47					X	X									X															
T39N R9E	19	SW 1/4 NE 1/4	Mt. Baker Lodge Co.	1952					X						X				X															
T39N R9E	19	S 1/2	Mt. Baker Lodge Co.	1946					X										X															
T39N R9E	19	NE 1/4	Ski Lifts, Inc.	1937-41					X	X									X	X					X									
		Chelan & Mt. Baker NF's	Wilson, Jack A.	1950-51		X			X	X																								
T38N R16E T37N R16E T38N R17E T39N R14E T39N R16E T39N R17E		(most of) (portions of) " " " "	Morse, Frank B.	1933-45				X	X	X															X									

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T38N R7E	10		Mt. Baker Club	1925-52						X									X	X				X										
		Wenatchee & Mt. Baker NF's	Jackson & McCall	1934-43		X				X																								
		Chelan & Mt. Baker NF's	Eder, John	1946						X																								
		Chelan & Mt. Baker NF's	Dickson, Parm	1933-39						X																								
		Newberg Creek Slate Creek	Duncan, C.W.	1925-33		X				X																								
T39N R9E	18	SE 1/4	Mt. Baker Rec. Co., Inc.	1952-54	X					X									X														
T39N R9E	18 17	SE 1/4 N 1/2	Mt. Baker Lodge Co.	1923-52						X			X						X						X								
T40N R8E	33	S 1/2	Jolley, John H.	1906-07					X	X		X													X								
T39N R8E		et al.	Cornwall, P.B.	1913-27					X	X																								
		Slate Creek Mining Dist.	Hyde, Frank D. et al.	1910-12					X	X														X										
		Slate Creek Mining Dist.	Gold Coin Mining Co.	1907-12					X	X						X																		
		Slate Creek Mining Dist.	Granite Creek Gold Mining Co.	1905-08					X	X			X												X									
			Granite Creek Gold Mining Co.	1907-08					X	X						X																		
		Slate Creek Mining Dist.	Hyde, Frank D. et al.	1910-13					X	X																								
T39N R9E	5	NW 1/4 SE 1/4	Horn, Sylvester	1906-07					X	X		X													X									

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		Slate Creek Mining Dist.	Romaine, J.W. & Roth, C.D.	1911						X	X																								
		Mt. Baker Mining Dist.	Boyd, William	1913							X																								
		Whatcom Co.	H.G. Herold	1909							X																								
T34N R10E	11	SW 1/4	Harrison, Jack	1920							X																								
T34N R10E	22	NE 1/4	Poison, Annie	1915					X		X																								
T34N R10E	22 23	NE 1/4 & NE 1/4	Poison, Captain	1904-15					X		X																								
T35N R10E &	19 30	E 1/2 SW 1/4 W 1/2 NW 1/4	Towne, John	1918						X	X																								
T37N R12E	31		Crane, Emma Engles	1915-21			X			X	X		X								X						X								
T37N R12E	20 29	SW 1/4 & NW 1/4	Crane, Florence	1915						X	X		X														X								
T37N R12E then	20 29 31	SW 1/4 & NW 1/4	Crane, Emma Engles	1915-20			X			X	X		X														X		X						
T35N R10E & R11E			Hooper, W.A.	1934		X				X	X																								
T35N R10E	12	E 1/2 NE 1/4 NW 1/4 & W 1/2 W 1/2 W 1/2 NW 1/4 NE 1/4	Backus, R.S.	1907-36						X	X																X				X	X	X			
T35N R10E		SW 1/4	Marblemount R.S.	1960-65																								X			X			X		
T35N R10E	14	N 1/2 SW 1/4 NE 1/4	Newby, William	1905-09						X	X					X																				

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T35N R10E	22	S 1/2 NW 1/4	Brown, Charles	1905-08					X		X							X																		
T35N R12E	21 & of	NE 1/4 NW 1/4 NW 1/4 NE 1/4 SW 1/4 NE 1/4	Perley, John T.	1905-12						X	X				X			X									X	X								
T35N R12E	21	SW 1/4 SE 1/4	Rouse, George L.	1906-14					X		X		X														X				X					
T35N R12E		various	Crescent Marble Mining Co.	1917-18						X	X															X										
T35N R12E	7 8 17		Beloit, Eugene	1905-12						X	X				X		X										X	X	X							
T35N R12E	16 17		Moha, Joseph	1906-09							X				X		X												X							
T35N R12E &	16 21	SE 1/4 SW 1/4	Moran, William	1906-20						X	X		X				X												X							
T35N R12E	16 17 21		Bart, Frank G.	1905-09						X	X						X										X									
T35N R12E	21 28		Kindy, A.O. (heirs of)	1906-09						X	X						X																			
T35N R12E	21		Hurd, Daniel	1906					X		X						X																			
T35N R12E	27	& various	Haug, Albert A.	1912							X																									
T35N R12E	5 6	& various	Witham, Orville S.	1939-47		X						X																								
T35N R14E			Thunder Creek Mining Co.	1919-21						X	X																	X								
T35N R14E			Silver Tip Mining & Dev. Co.	1915-25						X	X				X																					

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T36N R9E	9 10		Hyde, F.A. & Co. (1)	1913-29						X	X																	X								
T36N R9E			Hyde, F.A. & Co. (2)	1909-29						X	X																	X								
T36N R9E	10 11		Hyde, F.A. & Co. (3)	1913-29						X	X																									
T36N R9E	11	E 1/2 NW 1/4	Hyde, F.A. & Co. (4)	1911-31						X	X																									
T36N R9E	17		Hyde, F.A. & Co. (5)	1911-29					X		X																									
T36N R9E	35	SE 1/4	Barkley, A.W. et al.	1915-16						X	X															X	X									
T36N R10E	33	& various	Trudell, Fred J.	1941-54		X					X	X																								
T36N R11E	8 17		Oakes, Frank L.	1906-17						X	X		X		\		X									X									
T36N R11E	10		Tweeddale, Edward	1908						X	X						X																			
T36N R11E	15		Petit, C.D.	1907-09						X	X						X																			
T36N R11E	15		Pressintin, E. & Martin, H.A.	1928-31						X	X																X									X
T36N R11E	15		Provo, Tuff	1908-09							X				\		X																			
T36N R11E	15 21 22		Seavey, G.B.	1907-09						X	X						X																			
T36N R11E	28 29	SW 1/4 NW 1/4 SE 1/4 NE 1/4	Presentine, O.K. von	1907-09						X	X						X																			
T36N R11E	29		Hartsy, Theresa	1907-09						X	X						X																			
T36N R11E	30	E 1/2 SE 1/4	Taylor, E.A.	1907-09					X		X						X																			
T36N R11E	30	E 1/2	Germain, Ernest	1908-13						X	X						X																			

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T36N R11E	31 &	N 1/2 NE 1/4 SE 1/4 NE 1/4	Herman, Frederick	1909						X	X						X																		
T36N R11E	31		Hicks, Charles	1905-12						X	X				X		X																		
T36N R11E	31	NW 1/4 NE 1/4 E 1/2 NE 1/4	Buller Bros.	1909					X		X						X																		
T36N R11E	31 32	SW 1/2 SE 1/4	Trudell, Oliver	1907-09						X	X						X																		
T36N R11E		NE 1/4 SE 1/4	McLean, Duncan G.	1908-11						X	X				X		X																		
T37N R8E	25	SW 1/4	Koma Kulshan R.S.	1931-32						X	X																								X
T37N R13E	36		Davis, Glee G.	1906-17						X	X		X														X	X								X
T37N R12E	20		Sherrard, J.E. & Royal, C.	1951-55						X	X	X		X							X		X			X										
T37N R12E	21		Dohne, August	1908-12				X			X						X									X		X								
T37N R12E	29 30		Babcock, Burton	1907-11					X		X		X				X									X										
T37N R12E	30 31		Thornton, W.M.	1908-10						X	X																									
T37N R12 E	31		Crane, Eugene	1921-26						X	X				X																					
T37N R13E	5 6 7		Davis, Glee G. (1)	1917-18						X	X				X																					X
T37N R13E	5 6 7		Davis, Glee G. (2)	1906-18							X		X														X									
T37N R16E T38N R13E	30	&	Whatcom County	1940-42						X	X									X	X															

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T37N or 38 R16 or 17			Mountain Top Mining Co.	1910-15						X	X	X		X											X										X
T38N R7E			Condon, W.A.	1908-09					X		X		X														X									
T38N R6,7 T39 R6,7	&		Tilton, John P.L.	1921						X	X																									
T38N R8E T37N R9E	33 33	& NW 1/4 SE 1/4	Crume, A.M.	1937-51							X	X		X								X	X	X			X									
T38N R9E	33 34		Ruuth, John	1909						X	X																									
T38N R9E	36		Davis, Glee G.	1908-18							X																X									X
T38N R14E	33 34		Newby, A.C.	1931-51		X					X	X																								
T38N R14E			Reflector Bar G.S.	1908-13							X																X									X
T39N R6E	24		Cornell Creek Coal Assn.	1914-15							X			X	X												X									X
T39N R7E			Glacier Coal Field	1909-20						X	X			X													X		X							X
T39N R7E	15 16 21 22 27 28		Hill, Charles	1921						X	X																									
T39N R7E	1		Schrader, A.	1916-25					X		X			X													X									X
T39N R7E	2 3		Emerson, E.A.	1915					X		X	X																								
T39N R7E	3 9 10		Bond, Barno (1)	1920-23						X	X			X													X									X

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T39N R7E	3 9 10		Bond, Barno (2)	1921-22						X	X			X	X																				X
T39N R7E	3 9 10		Perkins, Howard	1912-17						X	X		X														X								X
T39N R7E	5		Boucher, Frank	1904-08						X	X		X														X	X							
T39N R7E	5	SW 1/4 NE 1/4	Breidenstein, J.W.	1909-11							X																							X
T39N R7E	5		Samson, Nellie	1912-14						X					X												X								
T39N R7E		NW 1/4	Shields, Anna	1910-11							X				X																				
T39N R7E	6	SW 1/4 SW 1/4	Bowtle, W. Raymond	1912-17						X	X		X		X												X								
T39N R7E	6	NE 1/4	Hinton, Elva	1910-11					X		X				X												X								
T39N R7E	6 7		Vaughn, Jennie	1908-09						X	X				X		X																		
T39N R7E	7		Hinton, George W.A.	1910-11						X	X																X								X
T39N R7E	6 7		Cornell, Chester C.	1908-09						X	X						X																		
T39N R7E	7		Haak, Charles E.	1910-11						X	X				X																				X
T39N R7E	7	SE 1/4	Armstrong, Robert A.	1910-11						X	X																								X
T39N R7E	8	NW 1/4 NE 1/4	Barratt, Edward J. (1)	1909-13						X	X	X	X														X	X							
T39N R7E	8	NW 1/4 NE 1/4	Barratt, Edward J. (2)	1907-15						X	X	X	X														X	X			X				X
T39N R7E	8	NE 1/4 NW 1/4	Emley, George W.	1913-22						X	X	X	X		X												X				X				
T39N R7E	8	SW 1/4	Polson, Alexander	1910											X												X								X

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T39N R7E	8	SW 1/4	Christie, George W.	1914-20						X			X	X											X									X
T39N R7E	8	SW 1/4	Shaw, L.C.	1910-11						X														X	X									X
T39N R7E	9	W 1/2 NW 1/4 NW 1/4	Tincker, W.T.	1915-23					X	X			X												X									X
T39N R7E	9 16		Crocker, Lemuel N.	1918						X				X											X									X
T39N R7E	16 17 20 21		Glacier Coal Co.	1909-15						X	X			X											X	X									X
T39N R7E	17	NE 1/4	Hayden, James D.	1918							X			X																					X
T39N R7E &	17 18	S 1/2 NW 1/4 S 1/2 NE 1/4	Gowdy, Edwin	1914-20						X	X			X	X										X	X									X
T39N R7E	17 18	NW 1/4 & NE 1/4	Britt. W.T. & Mundell, A.	1907													X																	
T39N R7E &	17 18	N 1/2 NW 1/4 N 1/2 NE 1/4	Armstrong, Mary A.	1915-20						X			X	X											X									X
T39N R7E	18	SW 1/4	Wheatman, Marv	1911-14					X	X			X	X											X									X
T39N R7E	18	NW 1/4	Brooks, Philip R.	1911-15						X				X											X									X
T39N R7E	18	SE 1/4	Smith, H.C.	1910-14					X	X															X									X
T39N R7E	19	SW 1/4	Palmer, Calvin O.	1910-16					X	X														X	X									X
T39N R7E	19	NE 1/4	Powers, Erasmus	1909-15					X	X			X												X									
T39N R7E	19	E 1/2 NW 1/4	Hinton, Douglas H.	1909-14					X	X														X										X
T39N R7E	19	SE 1/4	Frankoviz, Joseph M.	1911-14					X	X			X																					X

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T39N R7E	20	NW 1/4	Keplinger, Clarence C.	1911-14						X	X				X											X									X
T39N R7E	20	SE 1/4	Lightfoot, Charles C.	1911-14						X	X			X														X								X
T39N R7E	21	SW 1/4	Goheen, Henry H.	1918							X				X											X									X
T39N R7E	20	SW 1/4	Stuart, John P.	1909-12							X				X																				X
T39N R7E	21	SW 1/4	Smith, Mrs McRae	1911							X																								
T39N R7E	21	W 1/2 E 1/2	Siemons, Richard H.	1918							X				X											X									X
T39N R7E	21 28	SW 1/4 & W 1/2	Peoples, Edgar R.	1921						X	X																								
T39N R7E	28	W 1/2 E 1/2	Siemons, Siemon H.	1918							X				X											X									X
T39N R7E	28	NW 1/4	Goheen, James M.	1918							X				X											X									X
T39N R7E	28	SW 1/4	Boynton, Solon R.	1918							X				X											X									X
T39N R7E	29		Lucky Strike Coal Assn.	1908-11						X	X				X																				X
T39N R7E	30	SW 1/4	Griffiths, Austin E.	1909-12					X		X				X																				X
T39N R7E	30	NW 1/4	McConihe, Marguerite C. & Lucien	1911-13											X											X									X
T39N R7E	30	SE 1/4	Smith, Lewis	1909-11						X	X															X									X
T39N R7E	30	NE 1/4	Hooker, Elizabeth A.	1909-12						X	X															X									X
T39N R8E T40N R8E	or		Baird, E.C.	1908-14					X		X			X												X		X							X
T39N R9E	18		Mt. Baker Lodge Co.	1925-54							X			X																					
T39N R9E	32		Hall, J.B. & Watkins, G.	1913-21						X	X														X										X

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T39N R13E			Nelson, Anders F.	1912					X		X																									
T39N R14E		various	Banner, J. Oscar	1944		X					X																									
T39N R7E T40N R7E	5 31 32	&	Church Mtn. Coal Co.	1927-37							X	X														X										
T40N R7E	30 31 32		Greene, R.W.	1935-39						X	X			X																						
T40N R7E	32 33	SE 1/4 SE 1/4 SW 1/4 SW 1/4	Brooks, John O.	1927-28							X																									
T40N R8E	33		Bottiger, Frank E.	1914-15							X															X										X
T40N R8E T40N R9E	36 31		Broyles, John	1901-						X	X		X													X	X	X								X
T40N R9E	22		Williams, H.B.	1904						X	X						X									X										
T40N R9E	30	S 1/2	Langley, Aaron C.	1906-07					X		X															X										
T18N R15E	4		Thornton, W.P. et al.	1922						X	X																									
T18N R15E	6 10 16		Tiffany, Bertha S. et al.	1922							X																									
T18N R15E	10	NE 1/4	Weaver, J.N.	1911																																X
T18N R15E	10	NW 1/4	Bond, Lester H.	1911-12																						X										X
T18N R15E	12		Stenger, Peter W.	1922						X	X																									
T18N R15E	14 &	S 1/2 NW 1/4 NE 1/4 & S 1/2	Wheaton, Frank N.	1922						X	X																									
T18N R15E	14	NE 1/4	Bond, Silas	1911																						X										X

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T19N R14E	4	NE 1/4	Loomis, R.E.	1910							X																									
T19N R14E R15E	26 20	&	Hutchinson, Bryce	1922							X																									
T19N R15E	26		Bowinkleman et al.	1922-24							X			X															X							
T19N R16E	28	SW 1/4	Wilson, R.S.	1909							X																									
T19N R16E	28	SW 1/4	Rankin, Helen G.	1918-20					X		X																									
T19N R16E	30	NW 1/4	Brown, Louis A.	1909-11					X		X																			X						X
T19N R16E	30	NW 1/4	Osborn, Steven	1918-19							X																									X
		Lester G.S.	City of Tacoma	1914-71							X			X														X								
T21N R9F	18	SW 1/4	Greiner, Joseph Sr.	1908-15							X					X												X	X							X
T21N R10E	31	SW 1/4	Whitehouse, Thomas (no folder)	1908-15							X																									
T25N R18E	4		Robert, Emile & de Gril, Jean	1923-35		X					X																									
T25N R18E		various	Chambers, George	1921-31		X					X																									
T26N R18E		various	Schneider, L.W.	1924-35		X					X																									
T27N R17E		various	Reynaud, Peter	1929-53		X					X																									X
T29N R8E	24	NW 1/4	Palmer, G.A.	1908					X		X	X	X															X	X							
T29N R9E	27 & 28 &	SW 1/4 NW 1/4 NW 1/4 SW 1/4 SE 1/4 NE 1/4 NE 1/4 SE 1/4	Hayden, W.E.	1908-09					X		X	X	X															X								
T29N R11E	11		Stoess, P.C.	1925-38						X	X																	X	X							X

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T30N R8E	3 & 4	W 1/2 SW 1/4 SW 1/4 NW 1/4, SE 1/4 NE 1/4	Juelfs, W.H.	1909					X		X	X	X													X									
T30N R8E	4 & 5	SW 1/4 NE 1/4 S 1/2 NW 1/4, SE 1/4 NE 1/4	Krueger, A.C.	1909					X		X	X	X													X									
T30N R8E	5	NW 1/4	Wayman, E.E.	1909					X			X	X													X									
T30N R8E	11	SE 1/4	Peters, John	1909-10					X		X	X	X													X									
T30N R8E	11	NE 1/4	Peterson, John R.	1909-10					X		X	X	X													X									
T30N R8E	11	NW 1/4	Honkola, Matt	1909					X			X	X													X									
T30N R8E	12 14		Fredregill, Wilson	1909					X		X		X													X									
T30N R8E	13 24		Earl, John H.	1909							X	X	X	X												X									
T30N R8E	14 15		Verlot Point L.O.	1935-37							X			X												X									
T30N R8E	16	NW 1/4 NE 1/4	Verlot R.S.	1935-38							X															X									
T30N R8E	16 15	E 1/2 NE 1/4 N 1/2 SW 1/4	Brooks, N.H.	1907-12					X		X		X													X	X								X
T30N R8E	16	E 1/2 NE 1/4	Case, Elizabeth	1913-14							X	X	X													X					X				
T30N R8E	17	NW 1/4	Bassett, Minnie M.	1907-08					X		X	X	X													X									
T30N R8E	17	NE 1/4	Moss, M.M.	1907-08					X		X	X	X													X									
T30N R8E	22	NW 1/4	Langdon, Orris Pratt	1909					X			X	X													X									
T30N R9E	19	SE 1/4 NW 1/4	Warner, George	1909					X		X															X									

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T30N R9E	19	N 1/2 SE 1/4	Phillips, H.T.	1910-11					X			X	X													X									
T30N R9E	21 22 27 28		Manley, H. Homer	1910					X		X	X	X													X									
T30N R9E	23 &	NW 1/4 SE 1/4 SW 1/4 NE 1/4	Clemens, Leon	1910					X		X	X	X													X									
T30N R9E	24	N 1/2 SE 1/4 NE 1/4	Twiner, Percy C.	1929-30				X			X																								X
T30N R9E	24	N 1/2 SE 1/4 NE 1/4 & NE 1/4 SW 1/4 NE 1/4	Hinton, C.E.	1913-24							X	X	X													X					X				X
T30N R9E	28	NE 1/4	Kuzmoski, Alexander	1913							X	X	X													X					X				X
T30N R10E	8 17		Bonanza Queen Mining Co.	1912-13							X			X				X							X	X									X
T30N R9E & R10E			Duteau, Joseph	1911					X				X													X									
T30N R8E & R10E	23 26 22	S 1/2 SE 1/4 N 1/2 NE 1/4 SW 1/4	Werley, John	1908-10					X		X	X	X													X									
T30N R10E	22	SW 1/4	Big Four Inn, Inc.	1911-50						X	X									X						X									X
T30N R11E	9	SE 1/4 SE 1/4 NW 1/4	Osterberg, Nils	1914-19																X		X													X
T30N R11E	9	NW 1/4	Badel, James	1912-14							X									X															
T31N R11E	19 30	SW 1/4 NE 1/4 NW 1/4	Monroe, Frank E.	1906-07					X		X		X													X									

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T31N R10E	13 23 24		Rhodes, N.C.	1913					X		X		X													X									
T31N R11E	19	SE 1/4	Norman, Otto	1909-16							X																									
T30N R14E R15E T31N R14E R15E	& 		Lenzie and Sanchez	1925-32		X					X															X									X
T32N R8E	1	SW 1/4 NW 1/4	Roderick, John	1915							X	X	X													X									
T32N R8E	4 &	S 1/2 NW 1/4 NE 1/4 SW 1/4	Parker, William G.	1906-09						X	X					X																			
T32N R8E	13	E 1/2 SE 1/4	Tucker, Harry L.	1922-33				X		X	X	X	X									X					X									X
T32N R8E	14 15	W 1/2 NW 1/4 NW 1/4, N 1/2 NE 1/4	Bishop, A.	1914-16					X		X	X														X									
T32N R9E	14	NE 1/4 SE 1/4	Darrington R.D.	1917-47							X			X												X									
T32N R9E	36	NE 1/4 SE 1/4	Asterberg, Nils	1922							X			X		X										X									
T32N R9E	36	NE 1/4 SE 1/4	Backman, Charles (1)	1907-19							X		X	X												X									
T32N R9E	36	SE 1/4 SE 1/4	Backman, Charles (2)	1909-17							X									X	X														
T32N R10E	35	SW 1/4	Willard, Mrs Mary	1913-14					X		X		X																						
T32N R10E	18		Atkins, John	1912-18					X	X	X	X	X													X				X					
T32N R10E	18	NE 1/4 NE 1/4	Isaacson, John August	1912-13					X		X																								
T32N R10E	31	SE 1/4	Johnston, Robert E.						X		X	X	X													X									
T33N R8E	5 &	W 1/2 SE 1/4 E 1/2 SW 1/4	Hohag, Walter H.	1908-09					X		X			X			X																		

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T33N R8E	5 6 7	SW 1/4 SW 1/4 E 1/2 SE 1/4 NE 1/4 NE 1/4	Thompson, John	1906-09							X			X			X										X									
T33N R8E T34N R8E	6 31		Laplant, J.L.	1905-08					X		X			X			X																			
T33N R8E	6	NE 1/4 SW 1/4	Thompson, Henry	1906-09					X		X			X			X										X									
T33N R8E	4 9	SW 1/4 NE 1/4 NW 1/4	Isaacson, Odin	1908-09							X			X			X																			
T33N R8E	17	NE 1/4	Corrigan, Sherman	1908-12					X		X						X											X								X
T34N & T35N R7E			Homstead Entries	1906																																X
T34N R7E	6	N 1/2 N 1/2	Miller, Joseph T.	1905-08					X		X			X			X										X									
T34N R7E	6 &	NE 1/4 SW 1/4 N 1/2 SE 1/4	Thompson, J.W.	1905-08					X		X						X										X									
T34N R7E	6 &	SE 1/4 SW 1/4 S 1/2 SE 1/4	Kounerup, Rasmus	1906-08					X		X				X		X																			
T34N R7E	7 &	NE 1/4 NW 1/4 N 1/2 NE 1/4	Anger, A. Bulen	1905-08					X		X						X										X									
T34N R7E	16	W 1/2 W 1/2	Mason, Clifford	1905-08					X		X						X																			
T34N R7E	16	W 1/2 E 1/2	Monson, Olaf	1905-12						X	X			X	X		X																			
T34N R7E	7 & 8	E 1/2 SE 1/4 NW 1/4 SW 1/4 SW 1/4 SW 1/4	Burns, Clarissa E.	1905-12							X			X			X												X							X
T34N R7E	18	S 1/2 S 1/2	Thompson, Aaron W.	1905-09					X		X						X										X									
T34N R7E	18 &	NE 1/4 SW 1/4 N 1/2 SE 1/4	Thompson, Lucius	1905-08					X		X						X										X									

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T34N R7E	19 &	NE 1/4 NW 1/4 N 1/2 NE 1/4	Mason, George B.	1906-08					X		X						X																		
T34N R7E	20 &	SE 1/4 SW 1/4 S 1/2 SE 1/4	Mason, Marcus	1906-09					X		X				X		X											X							
T34N R7E	21	W 1/2 E 1/2	Baker, Ida Agnes	1905-09					X		X				X		X										X								
T34N R7E	21	E 1/2 E 1/2	Montgomery, Catherine	1905-14							X			X			X											X							X
T34N R7E	22	SW 1/4	Burns, Louise E.	1905-12						X	X			X			X									X	X								X
T34N R7E	23	W 1/2 W 1/2	Logue, John L.S.	1905-11					X		X			X			X										X	X							X
T34N R7E	25 & & &	E 1/2 SE 1/4 NW 1/4 SE 1/4 SW 1/4 NE 1/4	Rainey, Edmund	1908					X		X																								
T34N R7E	25	E 1/2 W 1/2	Ware, Fred J.	1906-08					X		X			X			X																		
T34N R7E	25	W 1/2 W 1/2	Hanley, Thomas	1906-09					X		X	X		X			X																		
T34N R7E	25 36 & &	SW 1/4 SE 1/2 N 1/2 NE 1/4 SW 1/4 NE 1/4	De Forest, J. William	1905-12						X	X						X																		X
T34N R7E	26 &	E 1/2 NW 1/4 W 1/2 NE 1/4	McNamara, John	1905-09					X		X						X																		
T34N R7E	26 27 & &	SW 1/4 SW 1/4 SW 1/4 SE 1/4 E 1/2 SE 1/4	Elmers, Guss J.	1905-08					X		X						X																		
T34N R7E	26 & & 27	NE 1/4 SW 1/4 SW 1/4 NW 1/4 SE 1/4 NE 1/4	Bishop, Albert	1905-11					X		X			X			X																		
T34N R7E	27	NW 1/4	Bilhorn, George M.	1905-12						X	X			X	X		X											X							

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T34N R7E	27		McNamara, James	1905-10						X	X				X		X											X								
T34N R7E	29 & 32	W 1/2 SE 1/4 SW 1/4 NE 1/4 NW 1/4 NE 1/4	Smith, Cora C.	1905-10					X		X				X		X											X	X							
T34N R7E	29 & 32	E 1/2 SW 1/4 SE 1/4 NW 1/4 NE 1/4 NW 1/4	Campbell, Robert G.	1905-08							X				X		X																			
T34N R7E	30 19		Schneider, William	1905-10					X		X			X			X																			
T34N R7E	31 32		Lowry, Lucinda E. (1)	1909-13						X	X			X	X														X							X
T34N R7E	31		Lowry, Lucinda E. (2)	1906-13						X	X			X	X		X											X								X
T34N R7E	32 &	NE 1/4 SW 1/4 N 1/2 SE 1/4	Hamilton, Enos	1906-08					X		X						X																			
T34N R7E	32 & &	SE 1/4 NW 1/4 S 1/2 NE 1/4 NE 1/4 NE 1/4	Hamilton, Motz	1906-12							X			X			X											X	X							
T34N R7E	33 34	N 1/2 SE 1/4 N 1/2 SW 1/4	Carr, E.	1907							X																									
T34N R7E	34 & &	NE 1/4 NW 1/4 N 1/2 NE 1/4 SE 1/4 NE 1/4	McIntosh, Robert P.	1905-08							X						X																			
T34N R8E	29 &	N 1/2 SW 1/4 S 1/2 NW 1/4	Ferrier, Herbert	1908-15						X	X			X	X		X											X	X							X
T34N R8E	30	S 1/2 SE 1/4 SE 1/4	Finney Creek R.S.	1909-13							X		X													X										X

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T34N R8E T33N R8E	29 30 31 6		Lutterloh, William & Fred	1906-14						X	X			X	X		X										X	X								X
T34N R8E	30	SE 1/4	Bristol, Orla M.	1909-10					X		X																								
T34N R8E	31		Laplant, H.A.	1906-09					X		X						X																		
T34N R8E T33N R8E	32 & 5	E 1/2 SE 1/4 SW 1/4 SE 1/4 NW 1/4 NE 1/4	Cook, Clarence	1905-09					X		X						X										X								
T34N R8E T33N R8E	32 5	S 1/2 SE 1/4 N 1/2 NE 1/4	Cook, Bert	1905-09					X		X						X										X								
T34N R9E T35N R9E R10E R11E	3		Yeager, F.D.	1934-39		X						X																							
T34N R9E	33 & & &	SE 1/4 NE 1/4 E 1/2 SE 1/4 SW 1/4 SE 1/4	Chamberlain, Lurena N.	1907-12					X		X																								
T34N R9E	34 & &	S 1/2 NE 1/4 N 1/2 SE 1/4	Clement, Richard	1908					X		X																								
T34N R10E	9 10 & &	SW 1/4 SW 1/4 NW 1/4 SW 1/4 W 1/2 NW 1/4	Coble, Claud	1909-10					X		X																	X								
T34N R11E	20	E 1/2 NW 1/4	Cantrell, G.G.	1907-10							X																								
T34N R13E	10		Mineral Park G.S.	1907-16							X															X										X
T35N R7E	30		Robinson, John W.	1905-14							X			X			X									X	X	X								X
T35N R7E	30		Runkel, P.L.	1927-28						X	X			X											X	X	X									X

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T35N R7E	31	N 1/2 N 1/2	Morrell, Sam	1905-16					X		X			X			X									X	X	X								X
T35N R7E	31	S 1/2 S 1/2	Waddle, A.L.	1905-08					X		X						X																		
T35N R7E	31 &	NE 1/4 SW 1/4 N 1/2 SE 1/4	Thompson, Louis	1905-09					X		X			X			X											X								
T35N R7E	31	S 1/2 N 1/2	Thompson, William E.	1905-09							X						X										X	X								
T35N R7E	34 & &	N 1/2 NE 1/4 SW 1/4 NE 1/4 NW 1/4 SE 1/4	Trafton, William G.	1906-09					X		X						X																		
T35N R7E	35 36 &	NE 1/4 SE 1/4 S 1/2 NW 1/4 NW 1/4 SW 1/4	Savage, James J.	1906-07					X		X						X																		
T35N R7E	31		Paystreak Assn.							X	X			X												X	X	X								X
T35N R9E	14		Roosevelt Assn.	1910-18						X				X											X	X	X									X
T35N R9E	14 15	S 1/2 NW 1/4 S 1/2 NE 1/4	Cyr, J.F.	1907					X		X																								
T35N R9E	10		Jackman Creek Lime & Cement Co.	1916-17						X															X	X										X
T35N R9E	14		Pigott, Michael et al.	1910-15					X		X	X		X											X	X	X									X
T35N R9E	14		Jumbo Assn. (1)	1912-17						X	X			X											X	X	X									X
T35N R9E	14 15		Jumbo Assn. (2)	1913-17						X					X										X			X								
T35N R9E	15		Jumbo Assn. (3)	1910-18						X	X	X		X	X										X	X										
		General	Annual Grazing Reports	1909-53							X																									X

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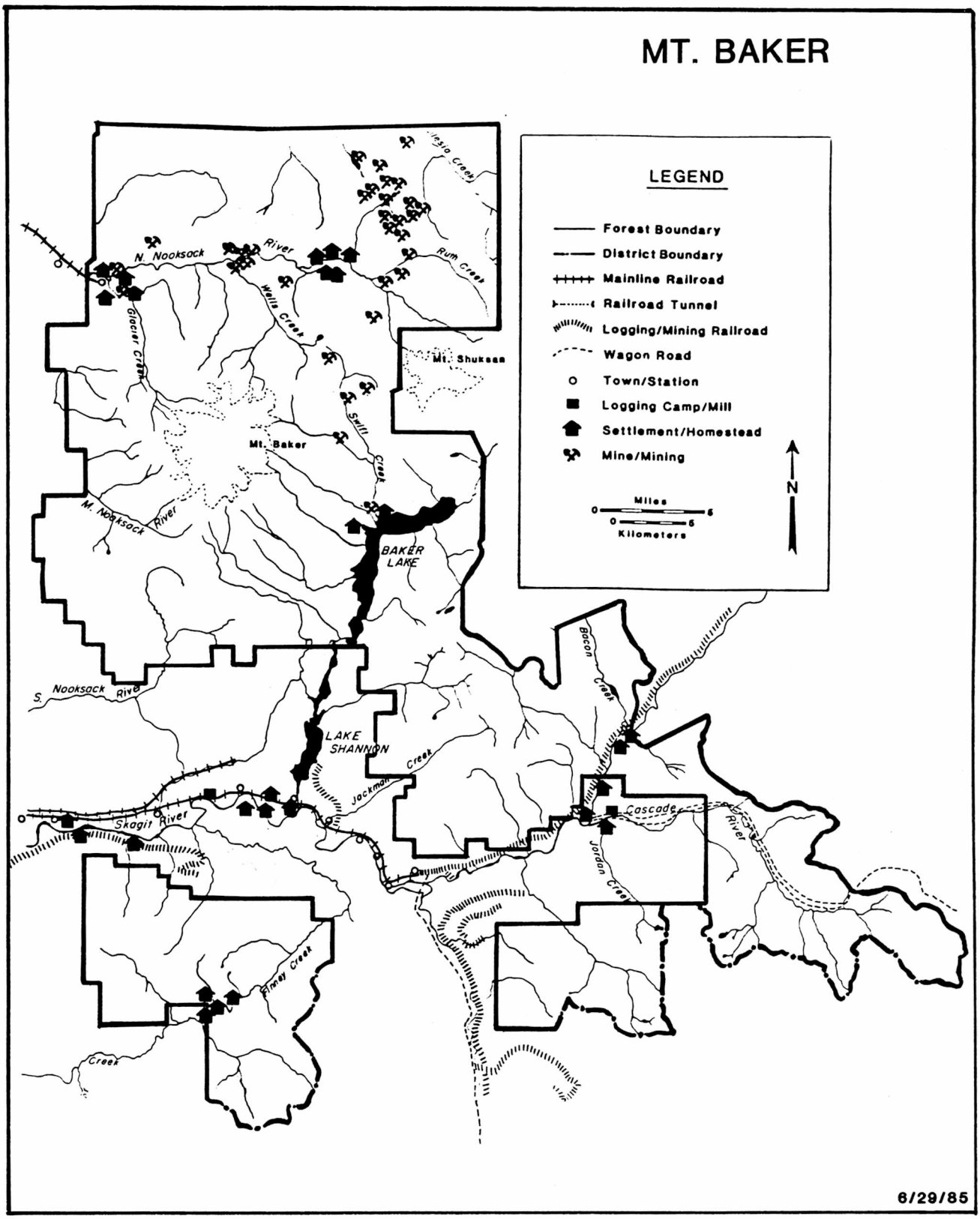
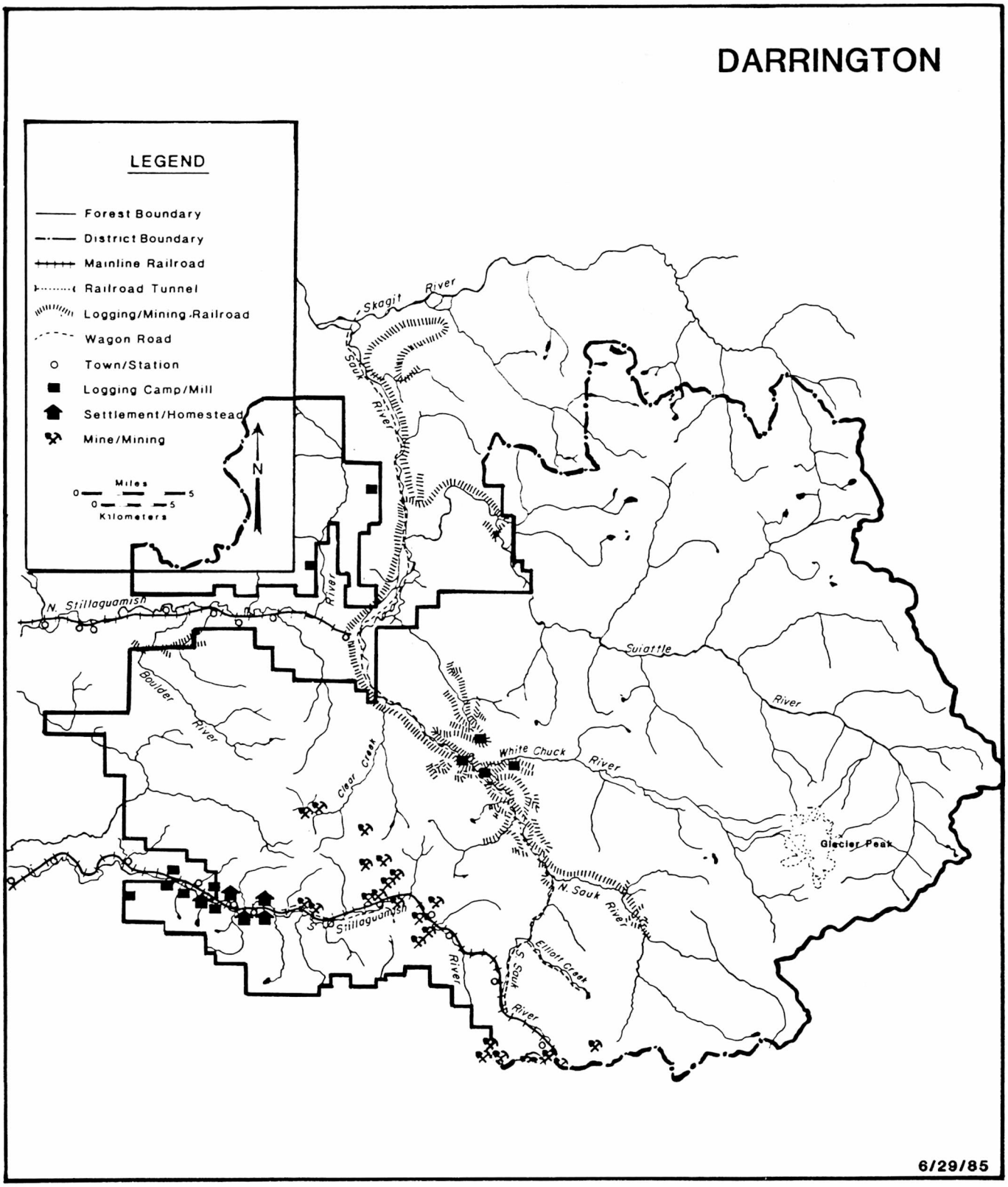
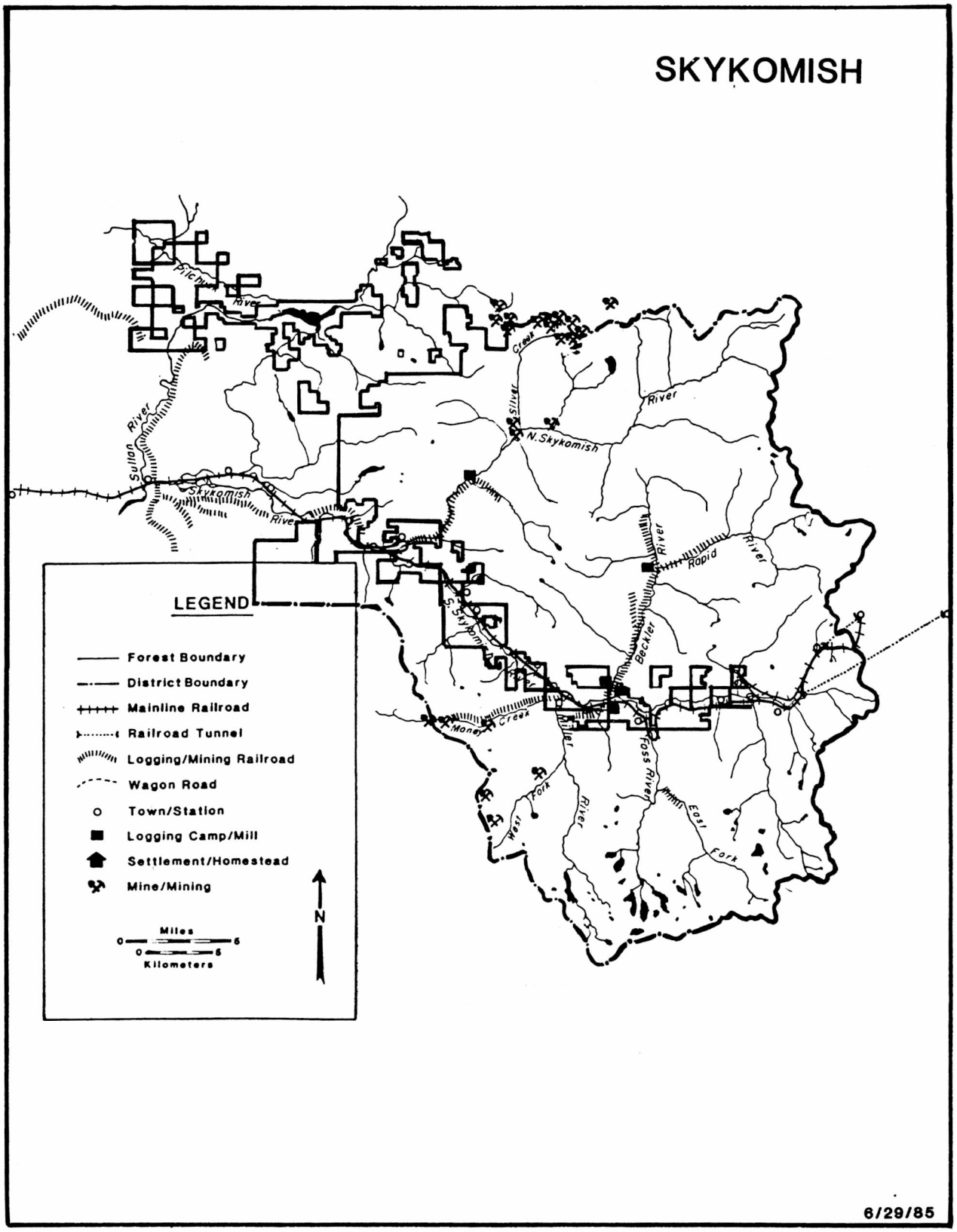
T34N R10E			Indian Allotments (1)	1908-15						X						X									X									X
		General	Indian Allotments (2)	1921						X																									X
		General	Indian Allotments (3)	1914-17						X															X									X
		General	Indian Allotments (4)	1902-18						X			X			X									X									
		General	Indian Allotments (5)	1906-20						X															X									X
T32N R11E T34N R10E	&		Indian Allotments (6)	1906-15						X						X									X									X

D

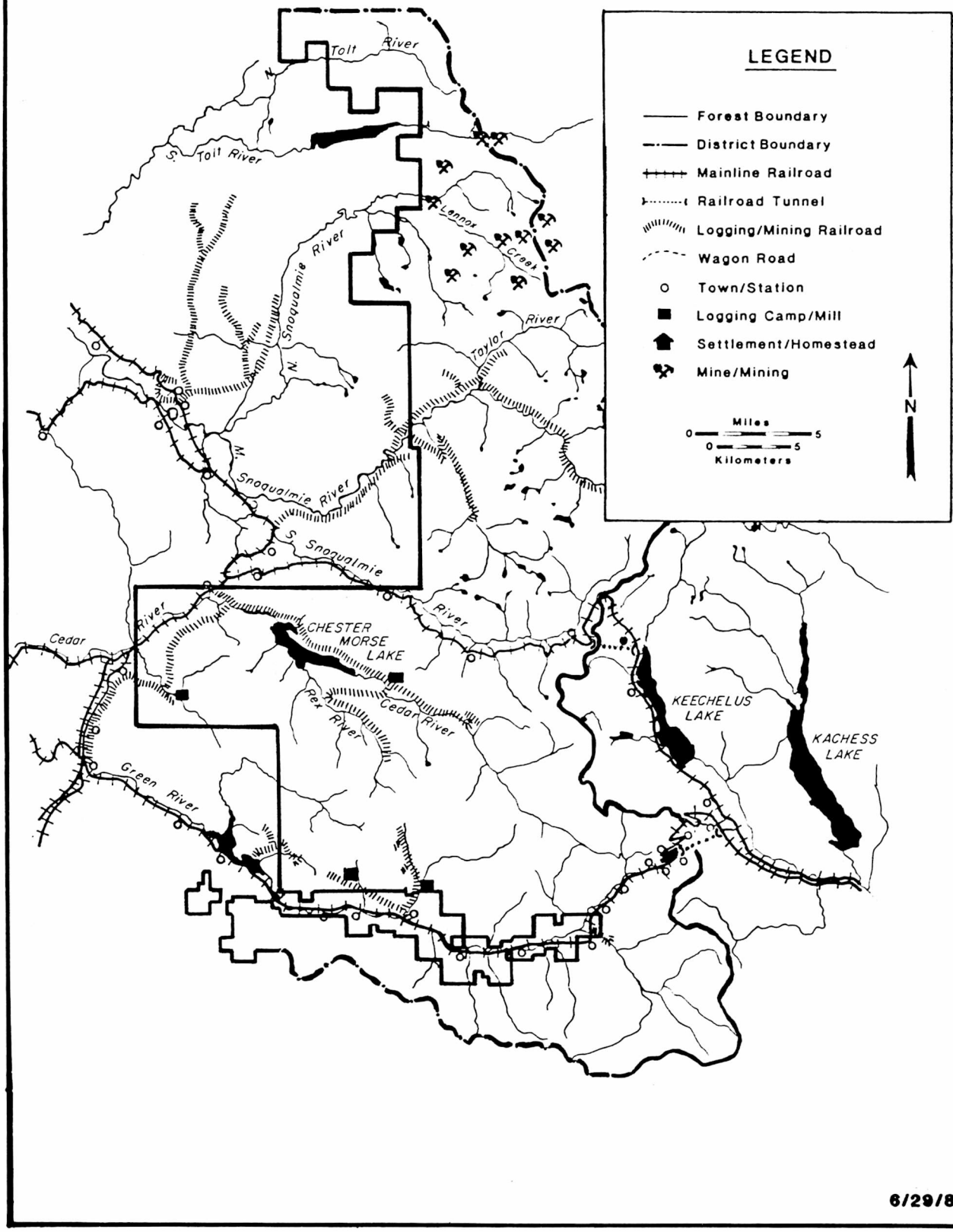
Maps of Historical Activities


MT. BAKER
LEGEND
Forest Boundary
District Boundary
Mainline Railroad
Railroad Tunnel
Logging/Mining Railroad
Wagon Road
Town/Station
Logging Camp/Mill
Settlement/Homestead
Mine/Mining
Miles
Kilometers
N
N. Nooksack River
Glacier Creek
Wells Creek
Rum Creek
Mt. Shuksan
Mt. Baker
Swift Creek
M. Nooksack River
BAKER LAKE
S. Nooksack River
LAKE SHANNON
Jackman Creek
Skagit River
Bacon Creek
Cascade River
Jordan Creek
Finney Creek
6/29/85


DARRINGTON
LEGEND
Forest Boundary
District Boundary
Mainline Railroad
Railroad Tunnel
Logging/Mining Railroad
Wagon Road
Town/Station
Logging Camp/Mill
Settlement/Homestead
Mine/Mining
Miles
0 5
0 5
Kilometers
N
Skagit River
Sauk River
N. Stillaguamish River
Boulder River
Clear Creek
Stillaguamish River
White Chuck River
Suiattle River
Glacier Peak
N. Sauk River
Elliott Creek
South Sauk River
6/29/85

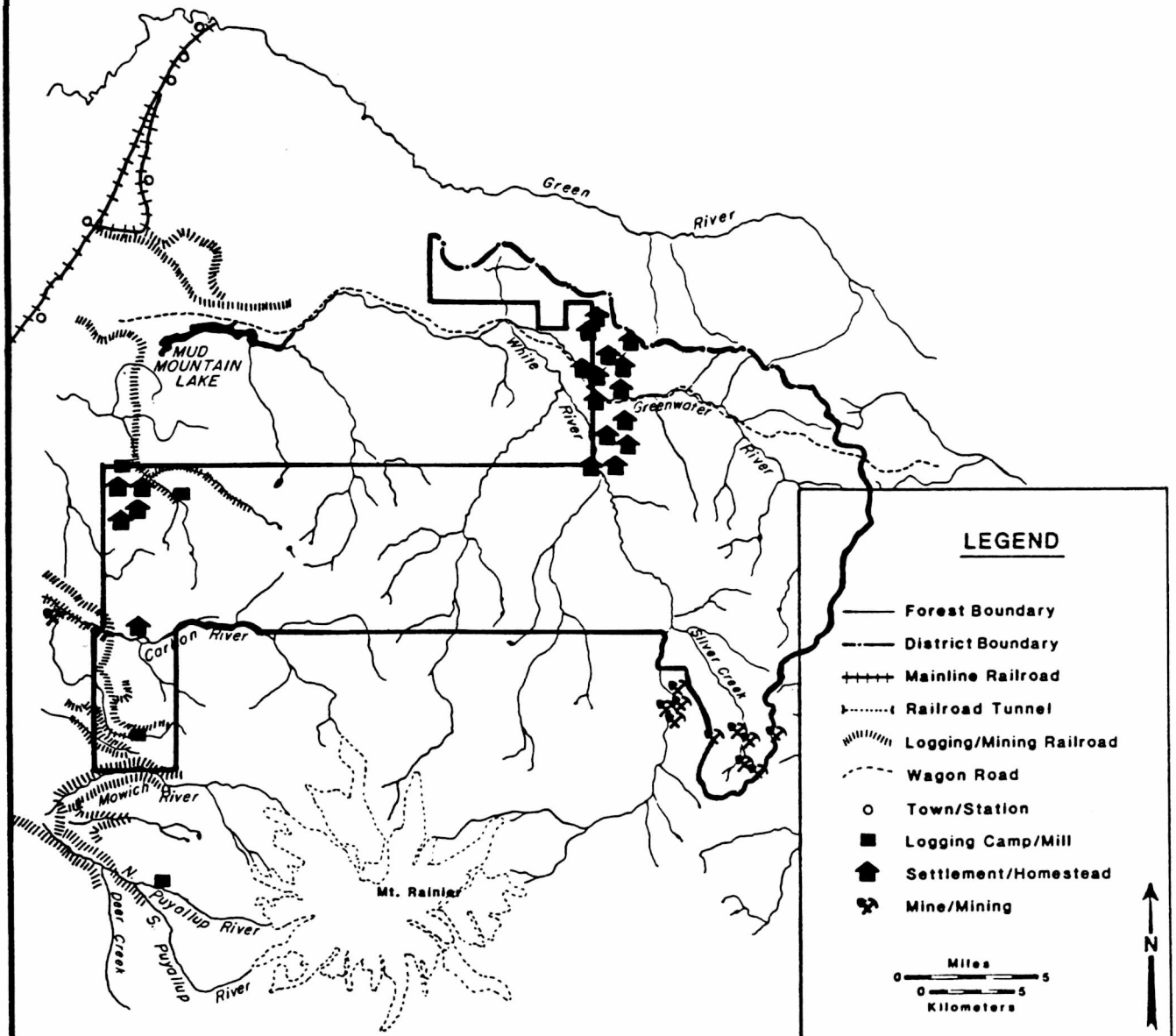

SKYKOMISH
Pilchuck River
Sultan River
Skykomish River
Silver Creek
N. Skykomish River
Rapid River
S. Skykomish River
Beckler River
Money Creek
Miller River
Foss River
West Fork
East Fork
LEGEND
Forest Boundary
District Boundary
Mainline Railroad
Railroad Tunnel
Logging/Mining Railroad
Wagon Road
Town/Station
Logging Camp/Mill
Settlement/Homestead
Mine/Mining
Miles
0 5
0 5
Kilometers
N
6/29/85

NORTH BEND



6/29/85

WHITE RIVER



6/29/85

E

Overview
Site Lists

Appendix E

Overview Site List

The Overview Site List is a computer database summarizing the information available for all reported Forest cultural resources. It is regularly updated, and formats for information retrieval are flexible. A complete listing within this overview would soon be outdated, and is not likely to be in a format appropriate to all uses. Therefore, two sample reports are printed. These show the kinds of information contained in the database and indicate two of the retrieval options possible.

Cultural resource specialists desiring to use the database should contact the Forest Archeologist, Mt. Baker-Snoqualmie National Forest, 1022 First Ave., Seattle, WA 98104 for information on access and use.

MT. BAKER-SNOQUALMIE N. F.
OVERVIEW SITE LIST RECORD
INDIVIDUAL RECORD SAMPLE

DISTRICT: DA MAP NO: 1

FOREST NO: CR05-02-001 STATE NO:

NAME: KENNEDY HOT SPRINGS CABIN

TWN N RGE E SEC

OWNER:

TYPE: FSA TYPE: TYPE:

STATUS: VER INVENTORIED: X EVALUATED: X CONDITION: F

INTERPRETIVE POTENTIAL: Y NATIONAL REGISTER: MANAGEMENT: 3

REMARKS:

SOURCE: PETE SELVIG

MOUNT BAKER-SNOQUALMIE N.F.
OVERVIEW SITE LIST SUMMARY

DISTRICT	MAP NO.	FOREST NO.	DISTRICT NO	SERIAL NO.	SITE NAME	CATEGORY 1	STATUS	MGMT
BR	1	CR05-	01	000	ST. JOE MINE	M	VER	1
BR	2	CR05-	01	010	MCQUEEN'S CABIN	S	VER	0
BR	3	CR05-	01	000	WHITE'S CABIN	S	VER	0
BR	4	CR05-	01	000	GOVERNMENT SURVEY CAMP	MIS	VER	1
BR	5	CR05-	01	000	TRAPPER'S CABIN	S	VER	0
BR	6	CR05-	01	011	SEIDEL'S CABIN	S	VER	0
BR	7	CR05-	01	000	LITTERLOH HOMESTEAD	H	VER	0
BR	8	CR05-	01	003	MARKSTROM HOMESTEAD	H	VER	1
BR	9	CR05-	01	000	TRAPPER'S CABIN	S	VER	0
BR	10	CR05-	01	000	GREINER'S SHELTER	FSA	VER	U
BR	11	CR05-	01	000	MAZAMA CABIN	REC	VER	1
BR	12	CR05-	01	014	LONESOME POINT CABIN	H	VER	0
BR	13	CR05-	01	000	MOROVITS STAMP MILL	M	VER	1
BR	14	CR05-	01	000	FOURTH OF JULY MINE	M	VER	1
BR	15	CR05-	01	000	MILL STONE ON DISPLAY AT KOMO KULSHAN	H	VER	1
BR	16	CR05-	01	000	MINERAL PARK TOWNSITE ICR 80-CA-1-12	S	VER	1
BR	17	CR05-	01	000	MARBLE CK RANGER STN. ICR 80-CA-1-13	FSA	VER	1
BR	18	CR05-	01	010	CAMP 18 BAKER RIVER CEDAR BOLT CO.	L	VER	1
BR	19	CR05-	01	000	HIDDEN LAKE	FSA	VER	3
BR	20	CR05-	01	000	H.F. HAGES CABIN	S	VER	0
BR	21	CR05-	01	000	A.J. LARSENS HOMESTEAD	H	VER	0
BR	22	CR05-	01	011	NITCHES CABIN SITE	S	VER	0
BR	23	CR05-	01	000	BACON CK ORCHARD SITE ICR-80-SK-HI	S	VER	U
BR	24	CR05-	01	003	MIKE MCROVITS HOMESTEAD	H	VER	0
BR	25	CR05-	01	000	FENCE POST SITE	MIS	VER	U
BR	26	CR05-	01	000	JACK DURARD BURIAL ICR 80-SK-H2	BUR	SUS	2
BR	27	CR05-	01	000	HOWARD CLARK PROPERTY ICR 80-SK-H3	H	VER	1
BR	28	CR05-	01	014	TEX CABIN SITE	S	VER	1
BR	29	CR05-	01	000	CASTLE ROCK CABIN	S	VER	0
BR	30	CR05-	01	000	WALNUT ORCHARD CABIN ICR 80-SK-H4	S	VER	1
BR	31	CR05-	01	000	FINNEY GUARD STATION	FSA	VER	0
BR	32	CR05-	01	000	TRESTLE OR FLUME	T	VER	0
BR	33	CR05-	01	000	JOE MOROVITZ RANCH	S	VER	U
BR	34	CR05-	01	008	WILLIAM ALLEN HOMESTEAD	H	VER	0
BR	35	CR05-	01	006	KOMA KULSHAN GUARD STATION	FSA	VER	1
BR	36	CR05-	01	004	MINING PIT	M	VER	0
BR	37	CR05-	01	007	BAKER RIVER BRIDGE	T	VER	3
BR	38	CR05-	01	000	CASCADE PASS CAMPSITE 45 CH 221	A	VER	2
BR	39	CR05-	01	000	SITE 45 SK 102	A	VER	2
BR	40	CR05-	01	000	SITE 45 SK 103	A	VER	2
BR	41	CR05-	01	000	SITE 45 SK 104	A	VER	2
BR	42	CR05-	01	000	SITE 45 SK 105	A	VER	2
BR	43	CR05-	01	000	SITE 45 SK 106	A	VER	2
BR	44	CR05-	01	000	SITE 45 SK 107	A	VER	2
BR	45	CR05-	01	000	SITE 45 SK 108	A	VER	2
BR	46	CR05-	01	000	SITE 45 SK 109 BACON HOMESTEAD	H	VER	U
BR	47	CR05-	01	000	BACON HOMESTEAD ICR 80-SK-45	H	VER	U
BR	48	CR05-	01	000	BEAVER HOMESTEAD ICR 80-SK-46	H	VER	0