Mountains are among the most spectacular of America's natural wonders. This frequently photographed one is Mount Shuksan, in North Cascades National Park. It is viewed from Picture Lake on State Highway 542 in the Mount Baker-Snoqualmie National Forest.

Celebrating 20th Anniversaries

1968 was a very special year for the North Cascades. Congress established North Cascades National Park, and Ross Lake and Lake Chelan National Recreation Areas. Also, they designated Pasayten Wilderness and passed the Wild and Scenic Rivers Act. Twenty years ago, these lands were changed in their management in order to preserve, protect, and enhance visitor enjoyment of the area.

This year many changes are underway in order to further the purposes that Congress intended for these beautiful lands. The Park Service plans to greatly increase the opportunities for visitors along the North Cascades Highway corridor. Several short trails and overlooks will include information designed to highlight visitor's experiences. The first site in the series is Happy Creek Forest Walk, open this summer. Diablo Lake Overlook exhibits are being updated to include recognition of Senator Henry M. Jackson. Other possible plans include a Gorge Dam trail and overlook from the existing Gorge Creek parking area, a circle trail around Thunder Arm of Diablo Lake, and a trail to the top of the knob above Diablo Lake north of Colonial Creek Campground. A new Ross Lake Overlook is planned to include parking, toilets, a short viewpoint trail and an exhibit shelter.

North Cascades National Park has been dedicated to Senator Henry M. Jackson in recognition of his contributions to Wilderness Preservation, the National Park System, and North Cascades National Park. A North Cascades Visitor Center and memorial exhibits are being planned. The Center will be located near the west end of the Recreation Area near Goodell Creek in Newhalem. North Cascades Visitor Center will provide an in-depth introduction to the scenery, natural and historical resources, and things for visitors to do in greater depth than what exists today. The Visitor Center will include an Environmental Learning Center with research and classroom space.

Special events including the dedication of the Happy Creek Forest Walk are planned for this summer. Forest Service plans for the Heather Meadows area are described inside on page 3.

Welcome to the North Cascades!!

Opportunities to enjoy the myriad of spectacular landscapes in the North Cascades abound. Explore this region of magnificent peaks, glacier carved valleys, alpine lakes and cascading streams! This area is unsurpassed in its breathtaking beauty. The CHALLENGER along with the rangers and staff of the Park and Forest Services that share management of this land invite you to explore. Special trails, camps, activities, maps and news are provided here to aid in your adventure.

The Park Area includes a wilderness National Park and two water oriented National Recreation Areas: Ross Lake and Lake Chelan. Forest Service Wilderness Areas surround the park while Mt. Baker, Baker Lake, Darrington, Okanogan and Wenatchee areas are also prime locations for the most popular recreation activities in Washington. All together, the northern Cascade Range provides among the largest areas (several million acres) of the most rugged mountains in the world with the most glaciers in the continental United States.

The Ross Lake National Recreation Area follows the corridor of scenic North Cascades Highway for 30 miles, bisecting the glacial carved trough of the Skagit River drainage. Opportunities and places of interest are outlined in greater detail, along with a map following the highway corridor, in the middle section (pages 6-7).

Recreational Activities

BY CAR: Overlooks, viewpoints, side trips on Cascade or Hart's Pass mountain roads, self-guided nature walks and photography.

BY BOAT: Seattle City Light Tours, private boat, rent a boat at any of the resorts, or a river raft trip.

BY FOOT: Everything from short day hikes to overnight backpacking trips can be taken on the hundreds of miles of trails available to the adventurous. Free permits for overnights are available in Marblemount at the Backcountry Information Station.

Special events including the dedication of the Happy Creek Forest Walk are planned for this summer. Forest Service plans for the Heather Meadows area are described inside on page 3.
Mt. Baker Ranger District

The Mt. Baker Ranger District is located at the northern end of the Mt. Baker Snoqualmie National Forest. The district lies adjacent to most of the western boundary of North Cascades National Park. The District Ranger Station is on Highway 20 in Sedro-Woolley, 5 miles east of Interstate 5 with office space shared by North Cascades National Park headquarters and an information center operated as a joint use facility by both agencies. The district also operates the Glacier Public Service Center located on the Mt. Baker Hwy. #542, along the North Fork Nooksack River.

Geographically the district stretches from the Canadian border to the Skagit River with the Twin Sisters forming part of its western edge. Over 750 miles of forest roads and 200 miles of maintained trails provide access to most of the district. A wide variety of activities are available to the visitor including: hiking, climbing, camping, fishing, boating, hunting, sightseeing, winter sports and photography.

Mt. Baker as viewed from Chain Lakes trail north of the mountain.
HEATHER MEADOWS

Heather Meadows is located on the Mt. Baker Ranger District, near the end of the Mt. Baker Hwy. #542 in the divide between Mt. Baker and Mt. Shuksan. The Mt. Baker Ski Area operates in Heather Meadows during the winter months under a special use permit from the Forest Service. Day Use picnic facilities are provided at the Austin Pass Picnic Area by the Forest Service during the summer and early fall. In order to minimize overuse and damage to the area, NO OVERNIGHT CAMPING is allowed in Heather Meadows.

This summer will mark the beginning of "on the ground" improvements in the Heather Meadows area. The improvements will be spread out over the next three years and are the result of plans made to bring the area up to today's recreational standards.

Project work will begin with improved visitor services along the Mt. Baker Hwy. at the Glacier Public Service Center. Included will be redesigned visitor parking, new restrooms, a 24-hour outdoor information kiosk with telephone, and restoration of the 50 year old building's interior.

The other major first phase projects call for improvements at Artist Point and Picture Lake, both in the Heather Meadows area. The Picture Lake trail will be upgraded to a barrier-free standard. A self-guided interpretive trail called Artist Ridge will be constructed at Artist Point with viewpoints and signing showing off much of the natural splendor of the area. In addition new public restrooms and a 160 vehicle paved parking lot will be added at Artist Point.

Efforts will also start this summer by Forest Service crews to obliterate and revegetate areas denuded and worn bare by unwanted pathways and heavy foot traffic throughout the area.

Visitors to the Heather Meadows area should be aware that some of this summer's work may have disruptive impacts on facilities and vehicle travel access. This cannot be avoided due to the short snow free season.

JUNIOR RANGER

The Forest Service has initiated a fun way for children of all age groups to learn more about the natural history and human history of Heather Meadows. Children may pick up a problem solving sheet from the Glacier Public Service Center or Recreation Guards in the area and answer the questions on the sheet. Children age 6 or under may answer at the CHIPMUNK level, children age 9 or under may choose from the MARMOT level, and children ages 10 and up may answer at the MOUNTAIN GOAT level. When the activity sheets are completed they may be turned back in to the Glacier Public Service Center Staff or other Recreation personnel and a certificate will be awarded.

SPECIAL NOTICES

ARTIST POINT CLOSURE —
Starting August 15 there will be no access to Artist Point Monday through Thursday. Mt. Baker Hwy. will be closed off at Austin Pass Picnic Area each Sunday evening at 10 p.m. and re-opened on Thursday evenings at 10 p.m. All vehicles will have to be removed from the Artist Point parking lot before 10 p.m. on Sundays. Visitors who are planning overnight trips into the backcountry areas should be especially aware of this closure.

HANNEGAN ROAD CLOSURE — FOREST ROAD #32 —
Closed from June 1 – August 1 for Road and Trailhead reconstruction. People planning Backcountry trips into Hannegan-Whatcom Pass area should be aware of this closure, and check for possible weekend opening.

SUMMER INTERPRETIVE PROGRAMS OFFERED AT HEATHER MEADOWS

Would you like to know how a 300 million year old south sea island became part of the Cascade mountain range? Hear stories about a colorful miner who used to climb Mt. Baker? Or find out what creatures live in the waters of mountain lakes?

These are three of the many interpretive programs being offered by the Forest Service at Heather Meadows this summer. The programs begin on July 2nd and continue through late September. Each Saturday and Sunday, a guide will lead walkers on a moderate 1-2 hour hike at 1:00, 3:00 and 5:00. On Friday a walk will be led at 3:00 and on Monday at 1:00. One or more of these programs will be directed towards children.

A professional interpreter will guide many of the walks and the topics will vary from "The Geology of the North Cascades" to an audience-involvement play about wilderness entitled "The Impact Monster."

Guest specialist guides will lead other walks. Noted scientists and naturalists from the local area will speak on a wide variety of topics including botany, geology, ecology, art and history.

All the walks are free but groups will be limited to 25 people. Information on the interpretive programs and a schedule of the guest specialists may be obtained at the district office in Sedro-Woolley or at the Glacier Public Service Center. A sign up sheet will be maintained throughout the summer months at the Glacier Public Service Center, phone 599-2714 for reservations.
### How's the Weather?

Have you heard the old saying, "If you don't like the weather, just wait ten minutes?" When traveling the North Cascades we might add "If you don't like the weather just travel ten miles." Weather tends to move in from the Pacific and hang over the west side of the mountains. In fact a schematic of precipitation looks like a cross section of the mountains (see diagram). Maritime air tends to moderate temperatures which are more likely to be extreme up valley and east of the range. Summer temperatures may reach highs near 100 degrees F and then return to nightly lows in the 40's and 50's in the heart of the mountains. Averages are in the 70's and 50's during summer.

During a single day, weather changes may vary and be unpredictable. Valley winds tend to move up-slope warming the mountains with solar heat during the morning and early afternoon. Later mountain winds reverse producing a cooler down-slope air flow.

As storms pass down the eastern slopes of the Cascades they tend to drop much less moisture. In Stehekin just east of the crest less than one-fifth as much snow falls as on the western slopes. You are less likely to get wet hiking east of the mountains. It is wise to carry a canteen of drinking water and be prepared for temperature and weather extremes in all areas of the Cascades. Rain gear and a tent are advised. If you are caught in a storm they will be well worth the extra weight.

### FIELD SEMINARS

**EXPLORE THE BEAUTY OF THE NORTH CASCADES**

North Cascades Institute, a nonprofit field school, is expanding their course offerings throughout the North Cascades region for 1988. "The North Cascades is a magnificent mountain ecosystem and an ideal natural classroom" announced John J. Reynolds, Superintendent of North Cascades National Park. "It's exciting to see this kind of creative educational use of the park resources."

This year the Institute is offering 45 classes, ranging in length from 1 to 14 days, taught entirely in the field throughout the North Cascades bioregion, a land of rugged mountains, lush forests, deep river valleys, and rich marine shorelines.


Overnight classes are based in National Park and Forest Service campgrounds and participants are responsible for their own food, transportation and lodging. Many involve light to moderate hiking — all involve a stimulating and fun opportunity to learn more about the natural world.

A free brochure giving detailed information on each course, including dates, location, registration information, and fees, is available from: NORTH CASCADES INSTITUTE, 2105 Highway, Sedro-Woolley, WA 98284. (206) 856-5700.

### Skagit Wild & Scenic Rivers

In 1968 Congress passed the Wild and Scenic Rivers Act, declaring that certain rivers of the Nation "possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values..." and "...shall be protected for the benefit and enjoyment of present and future generations."

The Skagit Wild and Scenic River System, made up of about 150 river miles of the Skagit, Sauk, Suiattle, and Cascade Rivers, was designated under the Act in 1978. The Act appointed the USDA Forest Service as administrator over the river system, of which 50 percent is privately owned. The Act separated this river system into two categories: recreational and scenic. Recreational areas are readily accessible by roads with some shoreline development, a wide range of public recreation opportunities, and free-flowing, scenic and unpolluted waters. Scenic areas are accessible in places by roads with largely undeveloped shorelines, semi-private river-oriented recreation, and free-flowing, highly scenic, unpolluted waters.

The Mt. Baker-Snoqualmie National Forest plans to install Wild & Scenic River identification signs along the Skagit River System this summer. This project should be completed by this fall.


### MOUNTAIN GOATS ARE NOT TRUE GOATS

Mountain Goats are more closely related to the antelope family than to goats. These amazing mammals have interesting adaptations in order to cope with the harsh conditions of mountain life. They have thick, hollow hair, wool "subfur". Their powerful muscular forequarters and hooves with soft inner and a hard outer lining help them on steep slopes.

In the North Cascades, there are about 1,200 goats in a five county area. In contrast with the introduced goats that thrive on the Olympic Peninsula (about 7,000), the native mountain goats in the Cascades seem to be dwindling in population. In this area there is a 60 - 70 percent mortality in the first year and 50 percent during the second year of life. Causes of high mortality include avalanches, falls, predation (cougar, golden eagles) and poor winter conditions causing stress and parasite loads. Mountain goats are mature in 2½ years and live about 10 years in the wild.

During the summer, there are 18 family groups averaging about a dozen individuals each surrounding Mt. Baker. Some of these animals can be observed at a distance from Artist Point. Mornings and evenings they browse on huckleberry and shrubs. Mid-days they are more sedentary, often resting on snow banks during warm summer afternoons.
Sculpting The North Cascades

The northern Cascade Range is among the youngest mountain areas in the world. The carving and shaping is still actively underway. Moist Pacific air replenishes the mountains with an ample supply of precipitation which is continuously carving stream and river valleys.

During the cooler climate of the last ice age, glaciers grew to such an extent that they filled most valleys. A giant ice sheet up to a mile thick covered most of the area. When they melted, continental glaciers left U-shaped valleys, which contrast deep, crooked, narrow river-cut canyons. The gorge which begins just east of Newhalem is a river-cut canyon. The Skagit Valley to the west is a broad U-shaped valley.

At the valley heads, glaciers carved mountains into rugged knife-edged ridges called aretes, steep solitary peaks called horns and deep depressions known as cirques. A glimpse into the Pickets and up onto T-bone ridge shows all these elements from Newhalem. Glaciers, moving rivers of perennial ice and their associated formations characterize the mountain range. Glaciers sculpt the mountains and influence the activity of rivers.

Today, the almost 700 alpine glaciers in the northern Cascade Range are but a fraction of the size of their ice age counterparts, yet account for most of the glaciers in the lower 48 states. Glacial concentrations surround all major peaks. Mt. Baker’s slopes support 13 glaciers.

Glaciers are sensitive to changes in temperature and snowfall. Their constant changes are important climatic indicators. They influence vegetation patterns and serve as reservoirs for domestic and hydroelectric water supplies. In response to cooler summer temperatures and heavier winter snowfall, they have advanced into the head of river valleys several times over the last 800 years. Since about 1900 a general trend of glacial retreat was interrupted by a cooler period in the 1950’s when a few advanced.

Two places to view glaciers closely are at the end of the Cascade River road and along the Schrieber’s Meadow on the north flank of Mt. Baker. From the Cascade Pass parking lot you can view hanging glaciers on the north face of Johannesburg Peak. These glaciers are carving the mountain into an arete. To view a larger valley glacier go to the south side of Mt. Baker along the Mt. Baker Highway and turn left on forest road 12 and then road 13 to the Mt. Baker National Recreational Area. Hike through Schrieber’s Meadow and turn north along the railroad grade moraine until you find yourself staring into the icy blue eyes of the Easton Glacier.

Naturalist Programs bring Park into Focus

A visit to North Cascades National Park for the Highway traveler may be a blur of colors and patterns along the river, lakes and mountains. An enjoyable way to experience the Park and Recreation Area more closely is to attend a few of the free naturalist walks and talks that are given daily at both Newhalem and Colonial Campgrounds.

A variety of topics including history, Indians, geology, owls, subalpine life, bears and other wildlife are discussed by Park Rangers. Audience participation is encouraged, especially during nature walks and children’s programs. A few special treasure hunts for kids will be offered at 3:00 p.m., when there may be nature walks for families scheduled on another day. Check the bulletin boards at the campgrounds for specific schedule. Evening programs meet at dusk in the amphitheaters. A few of the intriguing titles are: Witches on the Wing, Retreating Ice and Teeming Forests, Bear with Me, Songs of the Skagit and North Cascades: An Island in Time. Morning nature walks give an opportunity to explore and find out more about the North Cascades through personal experience. Join us!

Archaeology in North Cascades National Park

Recent archaeological research has discovered many sites used by the ancestors of modern Indian people. Previously, Northwest archaeologists thought that little use was made of the rugged mountain highlands. This has been proven untrue. Locations where prehistoric Indian people traveled, camped and processed resources have been found at all elevations including above timberline. The number of recorded sites has increased dramatically, from 17 in 1984 to a total of 128 today.

This research program is in an early stage, resulting in more questions than current answers. It is known, however, that Indian people have been living in today’s park lands for at least 8,000 years. These early people made a living off of the abundance of game animals, fishes, plants and other naturally occurring resources. An example is the use of a distinctive type of quartz rock for making stone tools and weapons, butchering animals, preparing hides and many other tasks. These tools are found along with food-cooking hearths and other camp debris. Recently, quarries have been found where large boulders and bedrock outcrops have been mined for the highest quality pieces of quartz.

These results show that prehistoric Indian people made extensive use of mountain resources, even in interior valleys that are considered wilderness today. These early archaeological sites were utilized by ancestors of the Indian people who lived in the mountains during the early historic period. Historic Indian people of this area were known as the Chelans, Upper Skagits, Lower Thompsons and Chilcawoks.

Rock Thoughts

In simplest terms North Cascades Geology is not mysterious. Geologists still find its lengthy history intriguing and controversial. Dramatic land form evolution continues with uplift and mountain building.

Two major volcanic cones lie on the western edge of the range. Mt. Baker and Glacier Peak are among the string of volcanoes lining the edge of the Pacific and known as the “Ring of Fire”. Mt. Baker began forming less than a million years ago. Most of it was formed by lava flows but recent activity has been limited to ash and steam. In 1975 the Baker Lake area was closed to visitors due to the increased activity threatening an eruption that could have flooded all of Boulder Creek and Baker Lake. Eruptions were common during the mid-19th century with many documented accounts of activity between 1843 and 1880. The last major lava flow from Mt. Baker occurred 7,500 years ago and extended 12 miles down Sulfur Creek.

The core of the northern Cascade Range is bounded by many major fault zones. Thrust faults have scrambled rocks by transporting younger rocks over older ones. In this manner the summit of Jack Mountain was moved nearly six miles. A combination of this uplift and faulting due to intense pressures originating out in the Pacific Ocean, where the Pacific and North American continental plates meet have been responsible for forming the Cascade Range over the last six million years.

An excellent place to observe the variety of interesting rock forms in the northern Cascades is Diablo Lake Overlook.
North Cascades Highway
Places of Interest
The Marblemount community boasts the entrance to the "American Alps." West of town and one mile north of Hwy. 20 is the Skagit Ranger Station where travel information and free backcountry permits are obtained.

Entrance into Ross Lake National Recreation Area (M.P. 111.8) —
Ross views for pact 3 miles. At pull-outs you can see waterfalls cascading down from the heights of T-bone ridge, across the river.

2. Thornton Lakes Road/Trail (M.P. 117.3) —
Thornton Creek Road ascends 4.7, miles up a winding gravel road (not suitable for RV's or trailers). From the trailhead it is a rigorous 3 mile hike into Lower Thornton Lake, the first of three alpine lakes. Since the trail enters the National Park, regulations prohibiting pets and firearms are enforced. Backcountry permits for overnight stays may be acquired at Marblemount.

3. Goodell Campground (M.P. 119.4) —
Camp Sites (25)
Group Camp (reservation only, 973-4590)
Viewpoint into the Pickets looking north —
Places of Interest

5. Seattle City Light/National Park Service Information Office (M.P. 120.6) —
TRAIL OF THE CEDARS — (Seattle City Light interpretive trail. This 0.3 mile loop is an easy walk on the south side of the Skagit River accessible by suspension bridge near Newhalem Store.

LADDER CREEK FALLS — (Seattle City Light). Short trail behind George power house to upper Newhalem. Cross bridge to power house, follow signs, loop through flower gardens, pools and falls, colored lights at night.

6. Gorge Creek Overlook (M.P. 123.3) —
Views of Gorge Lake and Gorge Creek Falls

7. Gorge Lake Boat Launch (M.P. 126) —
Gorge Store.

8. Diablo / Seattle City Light Tours (M.P. 128) —
Newhalem Store.

9. Diablo Lake Resort (cross dam at M.P. 127.0) —
Lodging (phone Newhalem 5578)
Restaurant
Grocery

10. Colonial Campground (M.P. 130.2) —
Camp Sites (162)
Backcountry permits at ranger station
Restaurant
Grocery

11. Diablo Lake Overlook (M.P. 131.8) —
Geology exhibits and views of Diablo Lake and surrounding peaks.

12. Ross Lake Trailhead (M.P. 134.1) —
ROSS DAM TRAIL — This trail is moderately steep down less than 1 mile to the top of Ross Dam and continues to Ross Lake. After walking across the top of the Dam you could hike to Ross Lake Resort, Pumpkin Mountain Camp or Big Beaver (7 miles from Happy Flats).

HAPPY CREEK FOREST WALK — Located 0.2 miles beyond Ross Lake Trailhead on the south side of Highway 20. This 0.3 mile boardwalk is suitable for wheelchairs and those who have difficulty walking. It opens this summer. It highlights the trees and animals living together in this creekside forest. The elements of wind, water, rain, fire, and soil are discussed. Visitors are invited to explore their own senses becoming aware of the colors, smells, sounds and feeling of the forest.

13. Ross Lake Overlook (M.P. 135.1) —
A view up 24 mile long Ross Lake. The farthest peaks are in Canada.

14. East Bank Trailhead (M.P. 138) —
Multiple options are available to the hiker or backpacker from the East Bank Trailhead. After a moderately steep descent to Ruby Creek suspension bridge, level trail continues both up and down Ruby Creek connecting the Ross Lake National Recreation area with the Pasayten Wilderness. After a 2.6 mile walk west, the main trail along the east bank of Ross Lake extends 27 miles north to Hoonahort. Day hikers might go down to the shore of Ross Lake at the mouth of Ruby Creek or continue north gaining 800 feet in elevation to Hidden Hand Pass and Campsite.

15. Canyon Creek Trailhead (M.P. 141.2) —
Canyon Creek Trail leads into Rowley's River after 2.5 miles branching off for 100 yards.

16. Rainy Pass/Trailhead (M.P. 157.6) —
This rest area also offers hiking options. A 1 mile paved trail to Rainy Lake is handicapped accessible and has a waterfall and glacier view platform at the end. Beautiful hikes to Lake Ane (2 miles) and on up to Heather Pass (3 miles) and Maple Pass (6 miles) begin at this lovely picnic spot.

17. Washington Pass Overlook (M.P. 162.2) —
A 400 foot long paved, loop trail leads to incredible views of peaks. The overlook, picnic site, restrooms are handicapped accessible.

18. Upper Methow Valley/Early Winters Ranger Station (M.P. 178) —
Backcountry Information. Here's Pass Road branches of Highway 20 at Mazama. This 27 mile long road, not suitable for RV's or trailers, offers panoramic vistas of the northern Cascade Range and alpine flower displays. The short hike to Slate Peak lookout takes you to the 7,480 foot elevation.
A meandering wilderness trail approaches a stream crossing. Suddenly a large (6 inch) steaming track with four sharp prominent claws appears along the muddy shoreline. This is about all of the reclusive gray wolf (Canis lupus) that one is likely to see.

This powerful blackish-gray carnivore, which resembles a large domestic German shepherd or husky, measures from 4.3 to 5.9 feet and weighs from 40 to 175 pounds. They also have a very distinctive and well-known howl. Feared and misunderstood by European settlers for depredation on livestock and competition for food, wolves had almost disappeared from the western U.S. by 1940. Since that time their distribution has not changed much. Their present 'Endangered' status has resulted in a considerable number of studies which should help in managing them.

Despite their 'Endangered' status, wolf numbers appear to be increasing in a few areas. For example, 5 or 10 years ago they were extinct in Vancouver Island, Montana, and Wisconsin. Natural repopulation of these areas has since occurred, with each now supporting small breeding populations.

Apparently the northern Cascade Range is experiencing a natural increase in wolves, which hopefully will lead to reestablishment of a breeding population. But this is hard to determine. In the past few years many possible wolf tracks have been photographed. Although wolf tracks are much bigger than coyote tracks, they cannot be distinguished from a few large breeds of dog based on size. Some biologists in Montana developed a complicated method to distinguish them based on track shape, which requires taking 12 measurements of each track. Park biologists here, using the same technique found at least 3 of the track were almost certainly wolves.

Wolves mate for life. Adults breed in their second or third year, usually January to April. A litter of 1 to 11 pups is born after 63 days gestation. Pups wean at 5 weeks, when the adults begin feeding them regurgitated food. Wolves live 10 to 16 years. Wolves occur in a variety of habitats. They successfully adapt to most areas where sufficient prey is available. Large mammals such as deer, elk, moose, and bighorn sheep comprise the bulk of their diet. Hares, foxes, and rodents are also taken. A gray wolf can eat 20 pounds of meat per feeding, yet go 2 weeks without eating or hunting. They locate prey by scent, chance encounter, or tracking. They can scent up to 2 miles in good conditions. Wolves often hunt at night during summer to keep cool.

Wolves are very mobile, and have large home ranges. They will travel 40 miles round trip to hunt from their den in one night. This type of movement is common even in winter.

Wolves are highly social, often forming packs. Packs usually consist of 10 or fewer individuals. A stable social order is maintained by a ranking system of dominance order that is reinforced by daily interactions of pack members. One male is dominant over all others in the pack, and one female is dominant over all other females. Most males are dominant over females. Status is communicated by a complex system of body and tail postures, facial expressions, vocalizations, and erected hair. This social organization facilitates cooperative hunting and feeding while minimizing fighting and injuries in these very aggressive animals.

Wolves have few predators, though they occasionally obtain fatal injuries from defensive behavior of prey. Humans have caused the greatest mortality to wolves, primarily in response to depredations on livestock, and competition for prey animals.

Who's afraid of the big bad wolf? Certainly not well-informed humans! It would truly be incredible to ever see the shy wolf in the North Cascades.

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Bald Eagle Roost Surveys

For the last three years U.S. Forest Service and North Cascades National Park employees have been joined by 20 or more enthusiastic volunteers in a project to identify the locations of winter roosts used by the bald eagle. Bald eagles are well known for roosting (sleeping) communally in the same stands of trees year after year. These roost provide them with protection from the weather and an opportunity for social interaction. Arrival of the wintering eagles coincides with the availability of salmon carcasses after spawning.

Skagit Valley hosts 400-500 bald eagles every winter. This weekly survey, conducted between December and February, is an important part of the federal government's work to protect this threatened bird of prey. Plans are to continue surveying selected sites again this year and to include sites in the Nooksack River Basin.

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What is this Climbing Ranger Doing?

He is rappelling and traversing a cliff face in the Skagit River Gorge to measure an old suspended bridge.

The miner's trail up the Skagit River linked the gold finds hear Ruby Creek to the settlements on the Puget Sound. Long, rough bridges were suspended through the gorge. The "goat trail" was considered to be dangerous and difficult for even the lightest pony traffic.

In the 1890's, surveyors for an overland route through the Cascades said, "It is a picturesque place and rugged enough for the most ardent mountain climber." That remains true today.

In 1987, cultural resource people measured the 100 year old deteriorating bridge, to record its place in history. No attempt will be made to restore it.
There are many names (more than 50) for this wild cat, but most fear the cougar. There has never been an instance of any terrestrial mammal being killed by a cougar (Felis concolor). Just under 100 sightings have been recorded on the park. Last winter a cougar interacted with a lone cross-country skier and at one point chewed on his ski pole. Most of these encounters have been fleeting glances as they cross roads or trails. Although lone hikers are small around 6 feet and under 150 pounds. Females are smaller than males and bear 1 - 6 young after a three month gestation. Cubs have been sighted a few times normally in pairs in the late summer in the North Cascades.

Cougars historically had the most extensive range of any terrestrial mammal. Although, numbers are reduced the range is still large, encompassing parts of western North America south to the tip of South America. Since the establishment of the park in 1968 just under 100 sightings have been recorded on wildlife observations cards.

Most of these encounters have been fleeting glances as they cross roads or trails. Although, lone hikers may fear the cougar there has never been an instance of someone being harmed or attacked by a cougar in the park. Last winter a cougar interacted with a lone cross-country skier and at one point chewed on his ski pole. These wild cats may reach almost 8 feet in length and weigh up to 200 pounds. More typically they are smaller around 6 feet and under 150 pounds. Females are less than the cougar.

Is it a cougar, mountain lion, puma or panther? There are many names (more than 50) for this wild member of the cat family. Although, local names may vary, normally we are talking about the mountain lion or cougar (Felis concolor). Cougars historically had the most extensive range of any terrestrial mammal. Although, numbers are reduced the range is still large, encompassing parts of western North America south to the tip of South America. Since the establishment of the park in 1968 just under 100 sightings have been recorded on wildlife observations cards.

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Grizzly Bears in the North Cascades?

The answer is probably "YES!". Each year 10-20 grizzly bears are sighted in the North Cascades ecosystem (includes part of Canada). However, the population appears to be so small that your chances of ever seeing one are extremely remote. In fact the last substantiated sighting was when a grizzly bear was shot in 1968.

An estimated 100,000 grizzly bears once ranged throughout most of western North America from Ontario west to the California coast and south into Texas and Mexico. Today fewer than 1,000 survivce in six wild areas of Montana, Wyoming, Idaho and Washington. Because of this decline, the grizzly bear was declared a threatened species in these four states in 1975, and is protected by the Federal Endangered Species Act (ESA). Grizzly bears are an endangered species in Washington. Cause of their decline includes habitat loss and excessive human-caused deaths.

Nine states, federal and provincial agencies have formed the Interagency Grizzly Bear Committee (IGBC) to coordinate study and habitat recovery efforts. Locally, in the North Cascades the interagency group is conducting an ongoing evaluation to document grizzly bear population size, distribution and habitat requirements. They are producing a LANDSAT satellite map of grizzly bear habitat and plan to use radio-collared bears to provide verification of the satellite data. This information will be used to make management decisions concerning the future of the resident population.

The interagency effort does not include transplanting grizzly bears into the North Cascades. The committee hopes to provide sound land management that will support continued survival of grizzly bears.
The Way Through and to The Mountains: STEHEKIN

Stehekin was and still is today "The Way Through". Native Americans gave the valley its name since it enabled the inland people to trade with coastal groups. Later it became the way through the mountains for miners and prospectors. Today, hikers pass through the valley to reach the mountains.

Visitors to the beautiful Stehekin Valley find a pleasant escape and a place to come close to nature. Accessible only by passenger ferry or private boat, float plane, hiking or horseback, Stehekin has retained a unique atmosphere, more common everywhere earlier in this century. The absence of roads leading into the Valley requires everyone to slow down and enjoy the scenery, without the worries of traffic and the price of gasoline.

Lake Chelan National Recreation Area includes the lower Stehekin Valley, a year-round community with about 80 residents, as well as prime backcountry and many recreational opportunities. Camping, hiking, fishing and hunting in season, boating, and general relaxation are prime activities to slow down from the tempo of more "modern" places. Access to the south end of North Cascades National Park offers more hiking opportunities for the novice and the adventurous, and spectacular mountain scenery for all.

Essentials in Stehekin are available: overnight accommodations range from rustic tent-cabin to modern motel units; several eating establishments offer ranch style meals, family dining and gourmet desserts and espresso. Other amenities include a small store, boat gas, and float plane reservations for scenic flights or transport to Chelan. Small businesses include a craft shop featuring items hand-made by local residents, a photo shop with many historical photographs, and an outdoor supply store with the latest in fishing gear and information.

A 23-mile road within the valley leads to various points of interest, and transportation is available. Three daily National Park Service shuttle buses offer a combination of transportation and an interpretive tour to sightseers, day hikers, anglers, campers and backpackers along the Stehekin Valley Road. A noon-time bus takes the one-day visitor past the Stehekin log schoolhouse to Rainbow Falls. A two-hour tour of the lower valley by year-round residents offers a unique glimpse into the everyday life of Stehekin. Bicycles are available for rent and provide an unhurried look at wildlife and scenery along the four miles of paved road. Pack trips take the beginner and the experienced on horseback rides lasting from a few hours to several days.

The Golden West Visitor Center near the Landing is open daily in summer, and offers exhibits, maps, hiking and other information, books, and an orientation slide program. National Park rangers offer several interpretive programs daily in summer. Morning nature walks address a variety of themes, heading for a different location each day of the week. Afternoon walks through the historical Buckner Orchard and Homestead offer a look into Stehekin's past, with original buildings, machinery and farming implements to bring back memories and remind us of more independent times. Evening programs in the Golden West Visitor Center near the Landing offers a relaxing end to the day's activities; a sampling of titles include Life in Stehekin, Threatened and Endangered Species, Native Americans of Stehekin, Bears, and All You Ever Wanted To Know About Mosquitoes!

There are no telephones in Stehekin. For additional information, call the NPS office in Chelan at 509-682-2549 or write to P.O. Box 7, Stehekin, WA 98852. For lodging information, contact North Cascades Lodge at (509) 682-4711, or write Box 275, Stehekin, WA 98852. Chelan Airways at (509) 682-5555 or Box W. Chelan, and Air Northwest at (509) 682-5112 or Box 844, Chelan, WA 98816 offer charter floatplane service and scenic flights. Lake Chelan Boat Company departs Chelan at 8:30 a.m. daily in summer; additional information may be obtained by calling (509) 682-2224 or by writing to Box 186, Chelan, WA 98816. A list of other accommodations and services is available from the local newspaper, The Valley Voice, or The Stehekin Guidebook (Stehekin, WA 98852).

Camping in the North Cascades

There are many public campgrounds adjacent to the North Cascades Highway. No reservations are accepted. They are filled on a first come, first serve basis. Even during holiday weekends, camping spots can normally be found. Private campgrounds and resorts may also provide cabins and showers.

Typically, free campgrounds are quite primitive, requiring that you bring your own water and pack out garbage. When a fee is charged, there are amenities like running water and garbage service. Colonial Creek and Newhalem Campgrounds also offer flush toilets and Ranger programs. A complete list of campgrounds is available at any of the ranger or information stations.

Alternative to Camping

For visitors who would like to experience Ross Lake and Lake Chelan National Recreation Areas, but do not have the proper equipment or desire to camp, there are alternatives. The three major resorts with services are Diablo Lake Resort, Ross Lake Resort (Rockport, WA 98283) and North Cascades Lodge (Box 275, Stehekin, WA 98852, Phone (509) 682-4711). Telephone reservations can be made for the Diablo and Ross Lake Resorts through the Everett, WA (206) operator. Ask for a Newhalem number 5578 for Diablo or 7735 for Ross. These services operated by contract are under contract with the U.S. Government and administered by the National Park Service. Limited access is available at Diablo Lake Resort and at North Cascades Lodge for disabled persons.

Other accommodations are available in the private sector in the Stehekin, Methow and Skagit Valleys. Check at any visitor information station for details.

MILES OF TRAIL

Imagine it. You're hiking in the backcountry one fine day. Around the bend you suddenly encounter 5 men and women slaving away in the sun, beating on rocks with sledgehammers, chopping at roots, and carrying canvas bags full of gravel. They're sweaty, dirty, and surrounded by hordes of biting flies. What, you say, is going on here? Who are these people? Well, we're not a prison work detail. We are the North Cascades Skagit District trail crew, and we're working away at our profession — trail maintenance.

Every year we maintain 240 miles of trails, cutting out fallen trees, repairing bridges and signs, constructing trails damaged by heavy spring rains and snowmelt. Early in the season we work the lowland trails up to the snowline. Then as the warm weather eliminates this obstacle, we move into the high country in mid-July where we work on trails, camps and structures such as historic fire lookout until mid-September when the snow flies once again.

We occasionally use helicopters and horses to supply camps in the backcountry. If you encounter us, don't be alarmed. Despite our desperate appearance, we kind of folks and know what's going on in the backcountry in this park. Talk to us. Let us know what you think of our work. We love what we do, and especially where we do it. So stop for a chat... who knows, you might even get invited to dinner.
Over 100 apple trees of a variety rarely found... a four-mile long hand-dug irrigation system with wooden gates... a swimming pool... a homesteader's log cabin with a wood stove, gasoline powered refrigerator and stone fireplace... a chicken coop and brooder house... a forge and anvil... a homesteader's log cabin with a swimming pool... and much more. Visitors to Lake Chelan National Recreation Area can experience all of these things at the Buckner Orchard and Homestead.

The area was first homesteaded in 1889 by William Buckner, a hard-working and colorful character in Stehekin's history. Just over 20 years later, the land had been purchased by William Van and Mae Buckner. Along with their three sons, they began what would become a life-long association for the family and an important site in the Stehekin Valley. They dug the irrigation system, cleared stumps left by Buzzard's logging business, began building a number of structures integral to the operation, and planted the first of the Common Delicious apple trees, along with a few other varieties and types of fruit. Harry Buckner helped his father during summers while he was still in high school; in 1915, he spent the winter in Stehekin, the first of many.

Harry developed the orchard business into one of the most successful enterprises in the valley in the peak years of the 1930s and 1940s, he shipped out 4-5,000 boxes of apples to downlake markets. Throughout the years, the orchard and surrounding area became an important gathering place for the local community; birthdays and weddings were celebrated, the inevitable potluck suppers were shared, and squaw dances — often with Harry as the caller — were held in the packing shed. Harry and his wife, Olive, raised their three daughters on this beautiful spot, and they all became an integral part of the community.

A series of events led to the slowing of the orchard's production. Also, as Harry grew older, he was unable to keep up with the demands left by Buzzard's logging business. He also became the Stehekin postmaster in 1956, which required more time away from the orchard. In 1970, the National Park Service purchased 108 acres of the land from Harry, to begin another era of history.

National Park Service trail crew foreman Phil Garfoot and his family have lived at the orchard for 17 years now, inviting the community in for special events and spending a good deal of time caring for the site. The National Park Service has made additional efforts to preserve the buildings, machinery and farm implements, as well as the history and tradition of the homestead. A planting program is being implemented to perpetuate the unusual variety of apples; buildings are stabilized as needed; machinery, one piece at a time, is being stabilized and maintained.

PARK Rangers offer guided walks to the Buckner Orchard, each summer afternoon at 2:30 p.m. Lasting about two hours, the walks provide a unique glimpse at an important aspect of Stehekin's history, orchard development in a frontier northwest community and a reminder of a different way of life.

STEP INTO THE PAST

ROSS LAKE

Tall timber stands around Ross Lake act as sentinels guarding passage ways into the enticing environments of this 22 mile long man-made lake. Vehicular access to Ross Lake is only possible from the north, through Canada to Hozomeen, via the 40 mile gravel road south of Hope, British Columbia. Hozomeen provides a 122 site campground and a boat launch ramp. All litter and refuse must be packed out and a State fishing license is required. Free backcountry permits are available for the remote sites scattered along the shores of Ross Lake.

Access to Ross Lake from the south is limited to trail and water routes only. Diablo Lake, Ross Dam, and Ruby Creek trails provide access for hikers and backpackers from trailheads off the North Cascade Highway. Ross Lake Resort has small rental boats and provides water-taxi service for trailheads and campgrounds. An alternative way to reach Ross Lake is to ride the Seattle City Light tugboat up Diablo Lake to Ross Powerhouse and hike up around the dam to the lake. Seventeen boat access camping areas are located along the shore and seven major trails connect Ross Lake with other parts of the backcountry. Obtain permits in Marblemount for camping or backcountry.

Taking the time to journey into Ross Lake will provide the visitor with an experience full of wonderment, solitude and self-renewal. Step into visitor center for further information.

ATTENTION ANGLERS!

Fishing in Washington, including the National Parks and Forests in this area, require a Washington State fishing license. All Washington Department of Wildlife regulations, seasons, and catch limits apply. Copies of the regulations are available from the Department of Wildlife (600 No. Capitol Way, Olympia 98504), as well as from sporting goods stores.

The Skagit River offers many species of trout, salmon, and whitefish. Salmon fishing is not allowed on the Skagit River inside the Ross Lake National Recreation Area due to the spawning habitat. The elusive steelhead (sea-run rainbow trout) found in the Skagit River may weigh up to 30 pounds.

Diablo and Ross Lakes provide angling for several species of trout. However, fishermen are asked to respect the closures of tributary streams on Ross Lake, which protect spawning trout populations.

The Stehekin River gives fishermen a good chance at rainbow and cutthroat trout.

Lake Chelan offers freshwater cod, rainbow and cutthroat trout, as well as Kokanee and chinook salmon.

WILDLIFE OBSERVATIONS

The Cascades provide numerous habitats for a variety of animal life. Over 90 typical mountain species of mammals are known to inhabit the area. Major mammals include mule deer, black bear, coyotes, mountain goat, bobcats, beavers, river otter and mountain lion. The most conspicuous animals in the high country are marmots and pikas, while Douglas squirrels, chipmunks and voles are most often seen in forested areas. Rarer animals include wolves, moose, fishers, gray wolf and grizzly bears.

Biological scientists, from several agencies, are engaged in a wide variety of field studies, many of which include endangered species, baseline ecological and population surveys, and raptor nesting and migration. Wildlife sitings by park personnel and visitors provide a valuable supplement to these studies. Sightings are recorded on Wildlife Observation Cards (see example for your use).

We encourage you to submit wildlife cards on any species, but would appreciate cards on the following:

**Birds:**
- American White Pelican
- Bald Eagle
- Common Loon
- Ferruginous Hawk
- Golden Eagle
- Northern Goshawk
- Peregrine Falcon
- Piked Woodpecker
- Sandhill Crane

**Mammals:**
- fisher
- gray wolf
- grizzly bear
- western gray squirrel

Since most of these are listed as endangered, threatened, or sensitive species a biologist may perform a follow-up field visit to confirm identification and collect additional data. Please include your telephone number on the card. Since this is a relatively young park information and data concerning wildlife sightings is of great importance.

NORTH CASCADES CHALLENGER

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