Executive Summary

This Historic Structure Report was prepared as part of the implementation of the Olympic National Park General Management Plan (approved August 8, 2008 • See Appendix 1) and in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties.

The backcountry structures of Olympic National Park are a legacy that spans from early exploration to the last major NPS shelter program. They are diverse in origin and broad in style. They cover homesteads, wildfire protection, early recreation, as well as Forest Service management and National Park Service administration. Their history provides the texture to the context of park development. They reflect attitudes towards the landscape and environment of one of the most unique areas on the planet. Some of the structures have value only in history while others fill a meaningful purpose within park policy.

The park cultural management program should include two primary conservation principals. The first is to maintain and preserve at least one of each style of historic structures. The second is to maintain and preserve the structures within the context of their association as elements of a system of shelters, trails, and ranger stations like found along the Hoh River trail. It is equally important to recognize that this context of association applies to grouping of buildings such as found at the ranger stations. The stations were a collection of several buildings and an open area for stock, and this functional relationship needs to be maintained and preserved in the same manner as individual structures. In certain instances, lost historic buildings could be restored where new functions are required for park administration purposes.

Given the challenges of the climate and terrain these structures will always need a degree of maintenance to preserve their historic character. But their history is important and when reflected against the breadth of the wilderness of the park, they are modest in nature, yet provide a perspective and understanding of the park that would be lost if they were to disappear.

Preface

This Historic Structure Report was initiated by the National Park Service as part of its stewardship of the historic buildings at Olympic National Park.

An Historic Structure Report is a planning guide. It is the purpose of a Historic Structure Report to develop an assimilation of historic context and existing conditions of a building(s) to form the basis of recommendations on the care and conservation of the historic resource.

The subject of the report is forty-two structures within the backcountry of the Park.

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Olympic National Park Historic Context 1898-1963.

The rugged terrain of Olympic National Park contains glacier-covered mountain peaks, giant trees of the coastal rain forest, and powerful rivers fed by melting snow and near-constant rain. More than 95 percent of the park's 922,651 acres is designated wilderness, accessible only by a network of trails. These connect isolated structures and small groups of buildings that date from more than a century of Euroamerican use and enjoyment of the backcountry. Roads closer to the perimeter provide access to a variety of campgrounds and viewpoints as well as the park headquarters. Most of these developments stem from the management of two federal agencies: the U.S. Forest Service (and its predecessors) and the National Park Service. Others include examples of private development, both for farming/subsistence and for recreation.

Since most of the land now included in Olympic National Park was formerly part of the Olympic National Forest, the park's early history is directly associated with the U.S. Forest Service. The origins of that agency stem from two important pieces of legislation in the 1890s. The Forest Reserve Act of 1891 allowed the President to set aside public forest lands, and within a few short years nearly 20 million acres became forest reserves. There was no means to manage these lands, however, until passage of the Organic Act on June 4, 1897. This law laid out three purposes of the forest reserves: "to improve and protect the forest . . . , [to secure] favorable conditions of water flows, and to furnish a continuous supply of timber for the use and necessities of citizens of the United States."[1] These purposes guided management of these lands until passage of the Multiple Use-Sustained Yield Act of 1960. The forest reserves were initially administered by the General Land Office in the Department of the Interior. In 1905, they were transferred to the Department of Agriculture and within a few months, the Bureau of Forestry was renamed the U.S. Forest Service. One more name

[1] Harold K. Steen, *The U.S. Forest Service: A History* (Seattle: University of Washington Press, 1991), 36.

change followed in 1907 when the forest reserves were renamed national forests.[2]

In February 1897, President Grover Cleveland set aside another 21 million acres of forest reserves, labeled "midnight reserves" because he did this just ten days before he left office. These lands included nearly 2.2 million acres on the Olympic Peninsula where the Olympic Forest Reserve was formally established on March 1, 1898. In response to opposition both locally and in Congress, President William McKinley reduced the reserve twice, ending in July 1901 with a little more than one million acres.[3]

While the Forest Service was still a relatively new agency, it was hit with the devastating fire season of 1910 that burned approximately 5 million acres in the northern Rockies, mostly in Idaho and Montana. The fires also killed eighty-five people, including seventy-eight government firefighters, and left both the survivors and the agency so traumatized that they declared all-out war on their enemy. After the 1934 fire season, despite evidence that the Forest Service was not winning this war, the agency redoubled its efforts with what became known as the 10 a.m. Policy that pushed crews to extinguish all reported fires by 10 a.m. the next day; if they failed to reach that first deadline, they were to try to have the fire out by the following morning, keeping on each fire until it was out. This labor-intensive policy required additional roads, trails, and lookouts to enable firefighters to reach the flames, and such infrastructure expanded with the public works programs of the 1930s. Thus the legacy of the 1910 fires shaped the Forest Service's management practices for decades, as long as veterans of the 1910 fire season lived.[4]

The Forest Service's emphasis on fire prevention and suppression in subsequent decades guided developments on the national forests. Each forest district had a ranger station to serve as local headquarters for forest work. These were initially simple cabins, such as the small log building

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2 Steen, *The U.S. Forest Service*, 26-36, 324-325.

3 Hal K. Rothman, *American Eden: The Administrative History of Olympic National Park* (National Park Service, 2005, final draft), 30-33.

4 Stephen J. Pyne, *Year of the Fires: The Story of the Great Fires of 1910* (New York: Penguin Books, 2001), 201, 215, 253, 256-268; Elers Koch, "History of the 1910 Forest Fires in Idaho and Western Montana, 22, typed ms. on file, Supervisor's Office, Kootenai National Forest, Libby, Montana.

constructed at Olympus Guard Station by at least 1915. The Forest Service later began to standardize plans, not only for ranger stations but also for a variety of other structures. Most of the buildings at the present-day Elwha Ranger Station, for instance, reflect such standardized plans. A key component of the fire protection system was access to all parts of the forests, so rangers constructed a network of trails which were later supplemented with roads. They maintained equipment in fire caches established at strategic locations along the trails, such as the one found at Hayes River. While out on patrol, on foot or on horseback, the rangers either camped out or stayed in small patrol cabins or simple shelters. A system of lookout towers, set on high points with panoramic views of the forest, provided fixed points for fire watch. All of these were connected with telephones and/or radio communication to facilitate rapid reporting of fires to headquarters.

Although forest protection became a priority for the Forest Service, the agency also faced growing interest in forest recreation. This had been an unofficial "use" of the national forests virtually since their creation because local residents often went fishing, hiking, picnicking, or camping in the nearby woods. Possibilities expanded for forest use with the passage of the Mineral Springs Act in 1899 that allowed construction of public resorts at mineral springs, such as those found at Soleduck Hot Springs and Olympic Hot Springs. Three years later, the 1902 regulations expanded the uses to include recreational activities such as camping and pleasure trips. During the Forest Service's first year, the 1905 regulations included permits for hotels and sanitariums, with the addition of summer cabins for the first time. These measures set the stage for the agency's increased interest in recreation in the first decades of the twentieth century.[5]

The formation of the National Park Service in 1916, with its emphasis on recreation, put additional pressure on the Forest Service to expand its recreational opportunities. There had been tension between the Forest Service and those favoring national parks since the 1890s, in large part because the agency had been forced to relinquish control over thousands of

[5] William C. Tweed, *A History of Outdoor Recreation Development in National Forests, 1891-1942* (Clemson, S. C.: Clemson University Department of Parks, Recreation and Tourism Management, c. 1978), 1-2; Elizabeth Gail Throop, "Recreation Development in the National Forests in Oregon and Washington, 1905-1945" (unpublished ms, 1996), 2.

square miles that had been taken for national parks. Mount Rainier National Park, for instance, was carved out of Mount Rainier Forest Reserve in 1899. In addition, Mount Olympus National Monument was established in 1909 in the heart of the Olympic National Forest, and national parks advocates lobbied for decades to convert it into a national park. Despite its change in status, the monument was administered by the Forest Service until 1934.[6]

During this time when the Forest Service was feeling its way into the recreation field, tourists and back-to-nature enthusiasts already were enjoying the Olympic National Forest and other forests in the Pacific Northwest. Ranger Chris Morgenroth reported 5,000 visitors to the Olympics in 1908 and he expected this to increase to 7,000 the following year. The entire North Pacific District counted 45,000 recreational visitors in 1909.[7]

Chief Forester Henry S. Graves visited the Olympic National Forest in 1914 and toured parts of the national monument. He recommended retaining the north half of the monument until its potential as a national park was determined and returning the south half to the forest. President Woodrow Wilson approved these boundary changes in May 1915. Despite this drastic reduction, Graves also recognized the recreation potential of the monument and urged that it "be protected, fostered, and developed."[8]

The end of World War I unleashed a flood of recreational travelers with cars, money, and leisure time. The Forest Service responded by hiring its first "recreation engineer" in 1919. Arthur Carhart, a landscape architect with a degree from Iowa State College, developed a recreation plan for the San Isabel National Forest in Colorado, the first such plan in the nation. Two other western districts, including the North Pacific District, also hired recreation planners at this same time. In his 1921 annual report, Chief Forester William B. Greeley ranked outdoor recreation as one of the major uses of the national forests. He admitted that this stemmed not from

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6 Tweed, *A History of Outdoor Recreation Development*, 5.

7 Chris L. Morgenroth, "The Olympic National Forest and immediate surroundings," December 1908, 22-23, RG 95, Olympic National Forest, History Files ca. 1899-1900, box 3, file: Olympic National Forest History, NA-PNR; Tweed, *A History of Outdoor Recreation Development*, 3.

8 David Louter, "The Forest before the Park: The Historic Context of the Trail System of Olympic National Park, 1898-1938," draft, n.d., 17-18.

government actions but rather from the belief of millions of Americans that national forests offered "a broad and varied field of recreational opportunity." In response to this increased interest, Congress appropriated the first money for recreational developments in FY1923. The amount remained very small throughout the 1920s, however, so most recreational development was carried out by rangers as part of their regular duties.[9]

The ideas of wilderness and wilderness recreation gained momentum during the 1920s with the writings of Aldo Leopold, Robert Marshall, and others. Wilderness advocates frequently referred to such pristine areas as "primeval" or "untrammeled." During a talk to the American Civic Association in Chicago in 1921, Frederick Law Olmstead contrasted urban recreational restrictions with the wilderness where the user was "untrammeled."[10] Two years later, Marshall described one of his weekend campsites in the Adirondack Mountains: "The gathering darkness blotted out the unpleasant signs of man," he wrote. "The forest outlined against the rising moon, the deer drinking in the rippling brook, the cool wind from the West were all as they had been when the first pioneer trapper spread his blankets in the untrammeled country . . . ."[11]

Chief Forester Greeley used the same terms when he addressed the wilderness issue in 1923. As the American people were enjoying the recreational value of national forests more and more, Greeley noted that some were calling for areas to be set aside not only from traditional activities, such as logging and grazing, but also from popular recreational uses including campgrounds, summer homes, and even roads. "What these people want," Greeley wrote, "is not parks but stretches of untrammeled wilderness, deliberately reserved as such, which only a few of the more hardy and 'elect' among the seekers of the out of doors can penetrate, relying upon their unaided skill in woodcraft." Greeley advised that closing

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[9] Tweed, *A History of Outdoor Recreation Development*, 8, 10-11; Steen, *The U.S. Forest Service*, 154; Chief Forester, as quoted in Kenneth O. Maughan, *Recreational Development in the National Forests*, Technical Publication No. 45, Bulletin of the New York State College of Forestry at Syracuse University, 7 (May 1934), 24-25; Throop, "Recreation Development in the National Forests," 6-7, 22, 62.

[10] The origin of the word untrammeled come from the work 'trammel", which is a shackle used for making a horse amble. It is a retraint, or something to impede freedom of movement.

[11] Douglas Scott, "The Meaning of the Word 'Untrammeled' in the Wilderness Act of 1964," Draft, Pew Wilderness Center, 17 October 2000, 12.

any national forests to development was a complex decision, one that required careful consideration. Nonetheless, he said that "the greatest good of the greatest number in the long run undoubtedly does call for abundant opportunities for a rugged and unspoiled taking to the woods."[12]

At the time Greeley discussed the possibility of wilderness areas in 1923, wilderness advocates were pushing to set aside national forest areas in both Arizona and Minnesota. The agency had been considering the wilderness issue for a couple of years by then but had yet to reserve any specific areas. Arthur Carhart had advocated wilderness designation for the Trapper's Lake area in Colorado in 1922, hoping to stave off development, but he was overruled by his superiors. He resigned before the end of the year. His ideas piqued interest, however, and just two years later part of the Gila National Forest in New Mexico was designated the first wilderness area in the United States. The Forest Service developed regulations in 1929 to allow it to administratively create wilderness areas within national forests.[13]

As the concepts of both outdoor recreation and wilderness were developing within the Forest Service nationwide in the 1920s, they were being put into practice in the Pacific Northwest. The North Pacific District hired Fred W. Cleator in 1919 to work as a recreation examiner. Despite the title, Cleator was trained as a forester which helped him keep the agency's primary goals in perspective. He was based out of Portland but worked on all the district forests. The plans he helped develop during the 1920s put the district in a good position when funding finally was available in the 1930s.[14]

Cleator's first project on the Olympic National Forest was a recreation plan for Lake Crescent, approved in 1921, that established campgrounds, picnic areas, parks, summer home sites, administrative sites, and a state fish hatchery on 16,600 acres. Another plan for Lake Quinault followed in 1924. The two lake recreation plans illustrate the automobile-based recreation in the Olympic National Forest. Such opportunities increased during the 1920s

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12 William B. Greeley, *Report of the Forester,* 1923, 39-40.

13 Rothman, *American Eden*, 58; Tweed, *A History of Outdoor Recreation Development,* 8, 10-11; Steen, *The U.S. Forest Service*, 152-155.

14 Tweed, *A History of Outdoor Recreation Development,* 5; Louter, "The Forest before the Park," 24.

as the Forest Service constructed roads into other popular tourist destinations including the Elwha River and Sol Duc Hot Springs. Construction also continued on the state highway encircling the peninsula, which was finally completed in 1931. A few people, including various Forest Service officials, even advocated opening the interior with at least one road to traverse the rugged backcountry, but there was neither funding nor sufficient interest for such a massive project.[15]

With increasing interest in a variety of recreation in the Olympic National Forest and the Mount Olympus National Monument, the Forest Service asked Fred Cleator to develop an overall management plan for both areas. He spent most of August and early September 1927 in the field, accompanied part of the time by Olympic National Forest Supervisor H. L. Plumb; guide and packer Elvin Olson; and W. C. Mumaw, president of the Olympic Development League.[16]

The result of this extensive field survey was the development of the *Recreation Atlas* and accompanying map for the Olympic National Forest, better known as the Cleator Plan. It described thirteen geographic units in the Olympic National Forest with potential for recreation use. Almost half of these had existing recreation plans on file, even if little or no development had started. The bulk of the interior was included in just two areas, the proposed Mt. Olympus Snow Peaks Recreation Area and the Olympic Primitive Area (labeled on the map as the Olympic Wilderness Area). The latter area lay south and east of the East Fork Quinault River. Cleator planned for this to be a true wilderness area, fitting the wilderness standards of the period. The proposed primitive area was to remain "intact, so that immense territories of mountain fastnesses would still be left untramelled [sic]." The plan called for administrative improvements to be kept to an absolute minimum, with only trails, telephone lines, and lookouts for forest protection, and no buildings except for a few necessary rough shelters. The larger Recreation Area allowed for more extensive development. Although

[15] Fred W. Cleator, "Recreational Facilities of the Olympic National Forest and Forest Service Plan of Development," (University of Washington) *Forest Club Quarterly* 10 (Winter 1936-1937), 6; Louter, "The Forest before the Park," 24; Gail H. E. Evans, *Historic Resource Study, Olympic National Park, Washington* (Seattle: National Park Service, Pacific Northwest Region, 1983), 206, 221.

[16] F. W. Cleator, "Field Diary and Travel Record, Aug. 1 to Aug. 31, 1927 and Sept. 2 to Oct. 18, 1927, RG 95, Historical Collection, ca. 1902-1985, box 38, NA-PNR.

this was a rugged and dangerous area, given to severe storms, Cleator also saw it as "a most wonderfully attractive scenic playground."[17]

Guided by Cleator as well as by national policy, the Olympic National Forest looked to expand its recreational facilities in the 1930s. It was one of the few forests nationwide that placed a high premium on outdoor recreation, ranking it second among the four traditional forest uses (timber, watershed protection, grazing, and recreation). The forest hosted more than 75,000 visitors in 1931, a big increase over earlier numbers but far below Mount Rainier (176,159 visitors) and Mount Hood (686,352 visitors) national forests.[18]

The election of President Franklin Delano Roosevelt in November 1932 ushered in a new era in recreation development on public lands, including the national forests. This was the depth of the Depression and by the time of Roosevelt's inauguration on March 4, 1933, 13 million Americans were out of work. Unemployment was especially high among young people and, with neither experience nor skills, these young Americans stood little chance of finding work. At the same time, President Roosevelt was concerned with the condition of the nation's forests and rangelands, which had suffered from years of abuse. Just over a month after taking office, Roosevelt signed the executive order creating one of the most popular of the New Deal programs, the Civilian Conservation Corps. With the CCC, the president "brought together two wasted resources, the young men and the land, in an attempt to save both."[19]

With the sudden influx of CCC labor and public works funding, the Forest Service launched nearly a decade of what one historian described as "frenzied activity" in recreation development. Most forests had a backlog of such projects that guided much of the initial work. Centralized direction

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17 Cleator, "Recreational Facilities of the Olympic National Forest," 2-3, 6-7; F. W. Cleator, *Recreation Atlas, Olympic National Forest,* 25 May 1929, RG 95, Olympic National Forest, map case 5, NA-PNR, 3.

18 Maughan, *Recreational Development,* table following 36, table following 146.

19 Executive Order #6101 established the agency officially known as Emergency Conservation Work, which quickly became known by the name supplied by Roosevelt, the Civilian Conservation Corps. John A. Salmond, *The Civilian Conservation Corps, 1933-1942: A New Deal Case Study* (Durham: Duke University Press, 1967), 3-4; Throop, "Recreation Development in the National Forests," 12-13.

from the Washington Office increased after the establishment of a new Division of Recreation and Lands in 1935. Within a couple of years the agency began to standardize designs for new buildings. As the Forest Service grew into its new recreation role and started to address the needs of the "sharply mounting tide of recreationists," projects progressed from simple facilities like campgrounds to more elaborate structures like bathhouses, amphitheaters, and playgrounds.[20]

The Forest Service's biggest need in the Pacific Northwest was improvements in both transportation and communication infrastructure primarily for fire fighting, so CCC crews worked on trails, roads, and telephone lines. Within a short time they expanded into what Cleator termed a "scientific recreation development program." Auto camps and picnic areas got sanitary toilets, water systems, camp tables and stoves, rustic bath houses, and community kitchens. Work in more remote areas brought improved trails, trail signs, garbage pits, and "strong, rustic mountain shelters."[21]

In an ironic twist of fate, Mount Olympus National Monument was taken away from the Forest Service just as the Olympic National Forest was poised to greatly expand its recreational opportunities. President Roosevelt reorganized the government within a few months of taking office, and one result was to shift jurisdiction for national monuments to the National Park Service. Mount Olympus National Monument transferred to the Park Service on June 10, 1933. This was a bitter pill for the Forest Service to swallow and hard feelings and antagonisms persisted for many years. When the National Park Service took over actual administration of the Mount Olympus National Monument in February 1934, Owen A. Tomlinson served as the superintendent for both the monument and for Mount Rainier National Park. Day-to-day administration was handled by Preston P. Macy who had worked with Tomlinson as assistant chief ranger at Mount Rainier. Macy

[20] Tweed, *A History of Outdoor Recreation Development,* 16-20; Steen, *The U.S. Forest Service,* 199-209; Throop, "Recreation Development in the National Forests," 8-10.

[21] Evans, *Historic Resource Study,* 334-339; F. W. Cleator, "Recreation Work of the U.S. Forest Service In the Pacific Northwest," 14 March 1936, RG 95, Historical Collection ca. 1902-1985, box 56, file: L-Recreation 1936, NA-PNR, 2-3; A. E. Glover, North Pacific Region General Inspection Report for CCC Work Camp Elwha, F-17, 18 December 1934, 1-9, RG 95, Historical Collection ca. 1902-1985, box 58, file: U-Inspection-Olympic [1933-1938], NA-PNR.

served as acting custodian until the fall of 1935 when he was appointed custodian for the monument.[22]

One of the first tasks faced by the new administrators was to see both the lay of the land and the existing improvements (roads, trails, and structures). Macy toured the monument in May 1934 in the company of David H. Madsen, head of the National Park Service's Wildlife Division, and George A. Grant, the chief photographer for the agency. Their initial report, issued in late July, was concerned mostly with spectacular scenery, forests, and wildlife. They were also impressed with the inaccessibility of the area. Part of the problem was the poor trail system with about 150 miles of trails that were only second or third class, "wholly unsuited for the purposes of a National Park or a National Monument."[23]

After years of fighting over the fate of the Olympic Peninsula, park advocates finally prevailed when President Roosevelt signed the bill creating Olympic National Park on June 29, 1938. Macy's domain nearly doubled in size from the 320,000 acres in the Mount Olympus National Monument to 634,000 acres in the new national park, with the option to expand the area to a maximum of 898,220 acres by executive proclamation. The new land area brought with it access roads, hundreds of miles of trails, and a variety of buildings.[24]

The National Park Service assembled a team to survey the new park in July 1938 and to come up with the first management plan to guide development. Members of the team from the National Park Service included Macy; Tomlinson; Madsen; E. Lowell Sumner, Regional Wildlife Technician; and E. A. Davidson, Regional Landscape Architect. They were joined by Harold L. Ickes, Secretary of the Interior, and Irving Brant, Representative of the Secretary and well-known conservationist.[25]

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[22] Cleator, "Recreational Facilities of the Olympic National Forest," 7-8; Rothman, *American Eden,* 64, 89.

[23] Preston P. Macy, George A. Grant, and David H. Madsen, "Primary Report on Mt. Olympus National Monument," 28 July 1934, Preston P. Macy Papers, Accession No. 3211, box 1, file 32, University of Washington Libraries, Special Collections Division, 3, 6.

[24] Rothman, *American Eden,* 85.

[25] National Park Service, "Statement of Controlling Development Policies," [ca. 1938], B-1, OLYM-621, Olympic National Park Archives.

The management guidelines developed by this distinguished group emphasized preservation of the wilderness. They listed three basic reasons for the park's creation: preservation of the rain forest; protection for wildlife, especially the Roosevelt elk; and "protection of one of the finest remaining scenic and wilderness areas of the nation, with emphasis on maintenance of wilderness conditions for the benefit of future generations." This wilderness policy was to guide - and limit - all new improvements, a new concept for the National Park Service at the time. Road construction would be minimal, with emphasis instead placed on an extensive system of trails. Since visitors would be traveling by foot or horse, the new park required additional shelters, with the more popular camping areas needing either larger shelters or multiple smaller ones.[26]

Macy supplemented his limited budget with help from three popular New Deal programs, the Civilian Conservation Corps (CCC), the Public Works Administration (PWA), and the Works Progress Administration (WPA). Men from the WPA worked solely on the new park headquarters buildings in Port Angeles while crews from the other two programs worked on projects around the park. The CCC had been actively working in the adjoining Olympic National Forest since 1933 but had not extended its projects into the boundaries of the national monument. Under the direction of the Park Service, crews from two CCC camps worked on road and trail construction; maintenance of telephone lines; installation of water and sanitation systems; and construction and landscaping of campgrounds, shelters, patrol cabins, and administration buildings.[27]

The National Industrial Recovery Act of 1933 established the Public Works Administration (PWA) to benefit the construction industry. Most PWA money went for public buildings, such as schools and courthouses, but some funds were designated for more modest buildings, roads and bridges, or even acquisition of privately owned lands. Olympic National Park got its first PWA allotment of $205,500 in the fall of 1938. Of this, $115,000 was allocated for construction projects. The list included the large public

[26] Ibid., B-2 - B-4; Ickes quoted in Evans, *Historic Resource Study,* 222.
[27] Evans, *Historic Resource Study,* 347-351.

buildings at the park headquarters as well as a fire lookout, patrol cabins, trailside shelters, outhouses, and communication systems. The remaining $90,500 was allocated for trail construction.[28] During this time, Max Walliser began work as the park's Resident Architect on August 29, 1938. His primary focus was plans for the new headquarters, but before the end of the year, he had drawn plans for several types of patrol cabins, shelters, and outhouses as well.[29]

By 1940, the national parks were in fairly good condition. The influx of relief funds had enabled the parks to make major improvements and invest in infrastructure. In addition, Congress had appropriated just over $21 million to fund the agency. The public responded with increased visits to the parks that reached a new high of more than 16,755,000 that year and over 21 million in 1941. All this changed with the American entry into World War II in December 1941. Despite the increased use of the national parks, Congress cut appropriations in half. Gas rationing depressed travel, causing a 55 percent drop in national park visits in 1942. This was the start of a difficult decade for the National Park Service.[30]

In the days following the Japanese attack on Pearl Harbor on December 7, 1941, Congress declared war on all three of the Axis powers – Japan, Germany, and Italy. As the country plunged into war, fears of a full-scale Japanese invasion on the west coast spurred the development of a coastal defense system. Much of this effort was concentrated on the Olympic Peninsula, which was seen as one of the most vulnerable and essential sections of the coast because it bordered the crucial Strait of Juan de Fuca as well as provided a barrier for the strategically important facilities in Puget Sound. These included the shipyards at Bremerton, Navy intelligence facility on Bainbridge Island, Boeing plant in Seattle, and the ports at Seattle and Tacoma. The Army, Navy, and Coast Guard all mobilized in defense of

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[28] Preston P. Macy, Narrative Report [hereafter called Superintendent's Narrative Report], 3 October 1938, 1, 3 November 1938, 1, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file: 5, 1938, Olympic National Park Archives; Evans, *Historic Resource Study*, 361-362.

[29] Superintendent's Narrative Report, [no date, ca. November 1938], 1-3, 2 December 1938, 2-3, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file: 5, 1938, Olympic National Park Archives.

[30] John Ise, *Our National Park Policy: A Critical History* (Baltimore: Johns Hopkins Press, 1961), 444-448.

this strategic region during the war. Initial actions included reactivating aging defensive facilities, installing anti-aircraft weapons, and stationing troops along the coast.[31]

America's entry into World War II brought Olympic National Park and its staff into the war effort immediately. The CCC crews working on the new park headquarters shifted to building a new airfield, with the park loaning both materials and equipment for the project. Landscape Architect Frederick Leissler was detailed to advise the military on "natural arrangements for camouflage of gun emplacements." Army personnel "constantly besieged" Superintendent Macy for information about the Olympic Peninsula, and the military found the park's new topographical maps to be better than their own.[32]

The park's largest role in the war effort was with the Aircraft Warning System (AWS). The U.S. Army established this program early in 1942 with observation posts in remote mountains and coastal areas not covered by conventional radar. By the end of that year, there were thirteen AWS stations operating within the park. During this time, park staff spent much of their time supplying the AWS stations in the park and maintaining both the trails and telephone lines to the stations. The strain on the staff only worsened as the war continued and rangers were called into the military, leaving the park shorthanded. This work continued until the AWS program was abruptly ended on June 1, 1944. In addition to the AWS, the military operated a second defense system along the west coast. A few months after the United States entered World War II, the U.S. Coast Guard, under the command of the Navy in the 13th Naval District, established an extensive system of lookouts along the coast of Washington and Oregon. By late April 1942, the system included twenty-six lookout stations and another thirteen lifeboat stations to cover both states. These were staffed by both military personnel and civilian volunteers who watched for suspicious activity and regularly patrolled the remote coastal beaches using guard dogs.[33]

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31 Evans, *Historic Resource Study*, 377-379.

32 Superintendent's Narrative Report, 9 January 1942, 1-3, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file: 9, 1942, Olympic National Park Archives.

33 Evans, *Historic Resource Study*, 379, 388-391.

The termination of the AWS program on June 1, 1944, allowed Olympic National Park personnel to refocus on park issues and concerns. The staff, diminished by wartime enlistments, had been stretched thin with the extra work required to maintain and supply the AWS lookouts. With these demands over, they were able to start on the backlog of maintenance and construction in the park. During the summer of 1944, they repaired sanitary facilities and camp fireplaces at several shelters and campgrounds and completed some smaller projects at park headquarters. Similar projects continued in the following summer.[34]

Tourist visits to the national parks were already up in 1945, even before the war ended in August, and they continued to rise over the next few years. Despite this increase in use of the parks, Congress kept appropriations at stagnant war levels through FY1946. After a brief spike to $26 million in FY1947, the appropriation fell to just $10 million the following year and did not increase notably until FY1950. Director Newton B. Drury issued a bleak forecast in 1949, with estimated needs for physical improvements ($140 million), roads and trails ($175 million) and parkways already authorized by Congress ($181 million). Congress responded with an appropriation of just $14 million that year.[35]

With little money and increasing numbers of visitors, the staff at Olympic National Park struggled to stay afloat during the late 1940s and early 1950s. They continued with the backlog of maintenance and repair work on buildings throughout the park. Crews also improved auto campgrounds to accommodate the greater number of car campers and day picnickers. In 1948, for instance, the staff replaced picnic tables, repaired or replaced camp stoves, and generally cleaned up the popular Elwha and Altair campgrounds. The park also addressed the need for additional facilities in the back country

[34] Superintendent's Narrative Report, 12 June 1944, 5, 9 August 1944, 2, 13 September 1944, 2, 5-6, 11 October 1944, 6, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file: 11, 1944, Olympic National Park Archives; Superintendent's Narrative Report, 13 September 1945, 3-4, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file: 12, 1945, Olympic National Park Archives.

[35] Ise, *Our National Park Policy,* 455.

and along trails by constructing fifteen new shelters between 1949 and 1951.[36]

This difficult situation nationwide did not immediately improve during the early 1950s when budgets for the national parks remained low and visitation increased dramatically. While the national park system was designed to handle 25 million visitors annually, the number of park visits hit 37 million in 1951 and then soared to nearly 55 million in 1956. Clearly something had to be done. This led to an ambitious program, developed in 1955, both to study park needs and to expand and upgrade accommodations. The effort, named Mission 66, was to culminate in 1966 on the 50th anniversary of the National Park Service. The total cost was expected to reach $786 million and the heretofore stingy Congress supported the program with generous appropriations which started at nearly $49 million in FY1956 and reached close to $80 million three years later.[37]

During this transition period, Fred J. Overly succeeded longtime Olympic National Park Superintendent Preston P. Macy in September 1951. For most of the next seven years, Overly moved the park away from its founding principles of wilderness and more toward a vision of the park as a playground for visitors. In his 1952 Master Plan, he suggested that it would be appropriate to have "some slight sacrifice of the Wilderness theme in order that full use and enjoyment by the public would be possible."[38] Overly supported the development of new roads within the park to open it for easy visitor access. Under the Mission 66 program, he found the perfect vehicle to further his development plans. During his tenure, he completed the major road system along Hurricane Ridge as far as Obstruction Peak, at a cost of more than $3.3 million. He used the timber salvaged along the right-of-way to build the Pioneer Memorial Museum at park headquarters. Other salvage

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[36] Preston P. Macy, Memorandum for the Director, 18 August 1948, 1-2, Accession No. OLYM-438, Catalog No. OLYM 18405, box 3, file 3/3, Olympic National Park Archives; Superintendent's Narrative Report, 12 October 1949, 2, 10 November 1949, 3, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file: 16, 1949, Olympic National Park Archives; Superintendent's Narrative Report, 14 June 1951, 3, 12 July 1951, 2, 13 August 1951, 2, 10 October 1951, 2, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file: 18, 1951, Olympic National Park Archives.

[37] Ise, *Our National Park Policy,* 534-547.

[38] 1952 Master Plan, as quoted in Guy Fringer, *Olympic National Park: An Administrative History* (Seattle: National Park Service, Pacific Northwest Region, 1990), 97.

logging within the park, authorized by Director Conrad L. Wirth but universally denounced by park supporters, raised funds to buy private lands to add to the park. In addition to the roads, construction during the 1950s included pit toilets and comfort stations; water systems; radio and power systems; campground developments, improvements, and repairs; five trailside shelters; Kalaloch Ranger Station; garage and repair shop, equipment storage building, and employee housing at headquarters; and the Hurricane Visitor Center. The total cost of all of these projects, from 1951-1958, was almost $679,000.[39]

After the tumultuous years and expanded building program of Overly's tenure, relative calm returned to Olympic National Park with the next two superintendents, Daniel B. Beard (1958-1959) and John E. Doerr (1960-1964). By 1959, visitation to the park had increased to more than one million people each year, making Olympic one of the most popular parks in the system. This included larger numbers heading to the back country, mostly on foot. A committee made an extensive study of conditions in the park's interior in 1958. Their report, released in January 1960, included existing facilities and recommended needs for both shelters and patrol cabins. During the next four years, the back country received special emphasis as the park worked under the Mission 66 program to increase visitor accommodations. Nationwide, the Student Conservation Program, later known as the Student Conservation Association (SCA), was started in 1957 under Mission 66. The SCA brought student volunteers into parks both to supplement regular park staff and to provide the students with a variety of work experience. The program, supervised locally by Jack Dolstad, built the first SCA shelter, equipped with four bunks, in 1959 and also repaired other shelters. The following year, they added two more shelters at Sand Point and followed with three others before the end of 1963. A crew of park day laborers built eight more shelters during 1963; seven more had been planned but were never built. Another volunteer program, the Youth Conservation Corps (YCC) provided opportunities for teenagers to work in the national parks. Among the many projects undertaken by the

[39] Ise, *Our National Park Policy,* 554-555; Rothman, *American Eden,* 105-109; Clifford B. Petersen, Park Engineer, Olympic National Park, Construction Projects Tabulation, September, 1951 to February 20, 1958, 1-5, Fred Overly Papers, Accession No. 2214, box 2, file 12, University of Washington Libraries, Special Collections Division.

YCC in Olympic National Park was the construction of Toleak Point shelter in 1971. This was the last new shelter built in the park.[40]

In the nearly seventy years since its creation as a national park, Olympic National Park has faced many challenges. The Park Service took over the area after it had been managed for more than thirty years by the Forest Service whose mission concentrated more on resource extraction and protection than on recreation. Once the area was designated a national park, it lived for many years in the figurative shadow of the larger and better known Mount Rainier National Park. Diminished budgets and staffing levels, certainly not unique to Olympic National Park, nonetheless slowed recreational development, as did the military use of the park during World War II. Perhaps the biggest challenge for park managers, however, one that continues today, has been the park's emphasis on wilderness that has guided the development and use of Olympic National Park in ways found in few other parks. As the definition of wilderness has evolved, especially since passage of the 1964 Wilderness Act, the Park Service has had to balance the wilderness ideal with visitor safety, pristine wilderness with preservation of an historic legacy of trails, bridges, ranger stations and historic structures. At Olympic National Park, designated wilderness in 1988, the debate over these priorities continues today.

[40] Ray W. Murphy, chairman, Back Country Study Committee, Olympic Back Country Study, January 1960, 1, 8, 15-17, OLYM-463, Olympic National Park Archives; Historic Property Inventory Report for Toleak Point Shelter, recorded 18 December 2006; Superintendent's Narrative Report, June 1960, 6, July 1960, 8, August 1960, 7 Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file: 26, 1960, Olympic National Park Archives; Superintendent's Narrative Report, July 1962, 6, August 1962, 8, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file: 28, 1962, Olympic National Park Archives; Superintendent's Narrative Report, June 1963, 8, July 1963, 8, August 1963, 6, 8, September 1963, 8, October 1963, 6, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file: 29, 1963, Olympic National Park Archives.

II
Backcountry Building Development

Introduction

Olympic National Park includes more than 875,000 acres of designated wilderness. A network of trails penetrates the backcountry, providing access for both hikers and park personnel. This area also contains scattered buildings and structures that represent more than a century of Euroamerican use of this rugged area. The trails and buildings illustrate federal management of the park lands, both by the U.S. Forest Service and the National Park Service. A smaller number of buildings depict private development for either recreation or farming/subsistence.

Olympic Forest Reserve/Olympic National Forest

Federal management of lands on the Olympic Peninsula began in February 1897 when President Grover Cleveland set aside 21 million acres of forest lands just before leaving office. These "midnight reserves" included more than 2 million acres that became the Olympic Forest Reserve, formally established on March 1, 1898. After considerable opposition, both locally and within Congress, President William McKinley reduced the reserve twice. It contained just over 1 million acres by July 1901. Forest reserves were managed initially by the General Land Office, under the Department of the Interior. Administration moved to the Bureau of Forestry within the Department of Agriculture in 1905. Within a few months, the Bureau was renamed the U.S. Forest Service, and two years later the forest reserves were labeled national forests.[1]

Even just a million acres of forest presented early managers with a daunting task of protecting and administering a virtual wilderness. Foresters tackled similar situations nationwide by building trails, and such work was one of the regular duties of the rangers. During the 1900 fiscal year, rangers in the nation's forest reserves cleared 2,250 miles of old trails and 1,095 miles of

[1] Harold K. Steen, *The U.S. Forest Service: A History* (Seattle: University of Washington Press, 1991), 26-36, 324-325; Hal K. Rothman, *American Eden: The Administrative History of Olympic National Park* (National Park Service, 2005, final draft), 30-33.

new ones, and blazed another 1,396 miles of new routes. "The opening of trails is considered one of the most important features of patrol work, as it makes possible the reaching of forest fires in the shortest possible time," noted the official report for that year. Another $300,000 had been appropriated for trail building nationwide during the 1901 fiscal year.[2]

It took several years for the Olympic Forest Reserve to hit its stride with trail building. Much of the problem stemmed from incompetent and occasionally dishonest supervisors, as well as a ranger staff that was totally inadequate for the large land area. As one later supervisor wrote, the most notable features of some of his predecessors were "the degree they were disliked by the natives and their short tenure."[3] In addition to staffing problems, an inspector with the General Land Office in 1903 noted that the rugged and remote topography "makes proper patrol absolutely impossible at present."[4] The primary problem was a near total lack of trails, with access restricted to the outer edge of the reserve. The positive side of this limited access, the inspector suggested, was that both timber trespass and human-caused fires were confined to this small accessible area. The Olympic Forest Reserve needed more trails, he concluded, but it would need more funding to reach this goal.[5]

With meager funding and mostly seasonal staff, trail building on the Olympic Forest Reserve was initially slow. Work began in 1904 on a general system of trails, but part of each season was spent reopening old trails that were blocked with downed timber. There was no overall plan at first and most trails were built for specific needs, such as the 1905 trail to Sol Duc Hot Springs to accommodate the resort and its patrons. Outside groups, like the Seattle Mountaineers, helped with particular routes that they wanted to use. For example, this well-known recreational group helped open the Elwha River trail in 1907, the year they took sixty-five men and

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2 *Report of the Department of the Interior, for Fiscal Year Ending June 30, 1900.*

3 P.S.L. [Parish S. Lovejoy], rough draft of memo to [R.L.] Fromme, 1912, Record Group (RG) 95, Records of the U.S. Forest Service, Olympic National Forest, History Files ca. 1899-1990, box 8, R. L. Fromme Papers, file: Correspondence, National Archives – Pacific Northwest Region (NA-PNR), 1.

4 Forest Inspector to the Secretary of the Interior, February 26, 1903, Record Group (RG) 95, Records of the U.S. Forest Service, Regional Office files, box 3, file: Olympic Forest Reserve – Inspection, 1903, National Archives – Pacific Northwest Region (NA-PNR), 2, as quoted in David Louter, "The Forest before the Park: The Historic Context of the Trail System of Olympic National Park, 1898-1938," draft, 3.

5 Louter, "The Forest before the Park," 3-4.

women into the Olympics for a month-long outing. By the end of 1908, ranger Chris Morgenroth reported that the Forest Service had both cleared and built "a good many miles of good horse trails and roads."[6] The first systematic plan for trails in the forest was promoted by Forest Supervisor Raymond E. Benedict in 1909. His idea was to develop a system of trails to encircle the forest, mostly on boundary lines, but rugged topography and poor design doomed this plan from the start.[7]

Impact of the 1910 Fires

During the summer of 1910, when the Forest Service was still a relatively new agency, devastating fires burned more than 2.5 million acres of forest in the northern Rockies, mostly in Idaho and Montana. Seventy-eight government firefighters died, along with a much smaller number of civilians. These fires so traumatized both the agency and its personnel that fire fighting became the Forest Service's number one priority for more than half a century. Some Forest Service personnel recognized as early as 1934 that this emphasis on stopping all fires was not effective. Despite this, agency officials redoubled their efforts that year with what became known as the 10 a.m. policy that pushed crews to extinguish all reported fires by 10 a.m. the next day. Memories of the 1910 fires shaped management practices as long as veterans from that fire season remained in the Forest Service.[8]

One of these 1910 veterans, Parish S. Lovejoy, came to the Olympic National Forest in 1911 when he replaced Benedict as supervisor. Although his tenure was brief, he had clear ideas about both fire and trails that he passed on to his successor in 1912. Lovejoy disagreed with the prevailing opinion that the forests of the Olympic Peninsula were not at great risk for fire. "The moss in the tops makes each tree a Roman candle," Lovejoy wrote. "I have been told that I am a fire crank. I was in Montana in 1910."[9]

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[6] Chris L. Morgenroth, "The Olympic National Forest and immediate surroundings," December 1908, RG 95, Olympic National Forest, History Files ca. 1899-1900, box 3, file: Olympic National Forest History, NA-PNR, 10.

[7] Ibid., 9-11; Louter, "The Forest before the Park," 7-9; Gail H. E. Evans, *Historic Resource Study, Olympic National Park, Washington* (Seattle: National Park Service, Pacific Northwest Region, 1983), 234.

[8] Stephen J. Pyne, *Year of the Fires: The Story of the Great Fires of 1910* (New York: Penguin Books, 2001), 201, 215, 256-268.

[9] Lovejoy, Memo for Fromme, 13-14.

Lovejoy believed that the prevailing dismissive attitude toward fire had led to a lack of planning for this possibility on the Olympic National Forest. His ideas to expand the trail and telephone systems and supplement them with tool caches mirrored those of the post-1910 Forest Service. "My general plan is about so," he wrote in 1912.

> Trails and trails and trails all looping into one another and into roads so as to allow cross cuts. All main trails and roads, and bye and bye all trails and roads paralleled with phone lines. Patrol boxes not farther than 5 miles apart on the phone lines. Boxes and lots of tools at or near the patrol tel stations. Houses and sheds and shelters along the trails where they will serve to shelter crews and patrolmen and all traveling officers and where the tools in the boxes can be concentrated winters and protected. Think this very important. We have made a fair start to the shelters this season and the boys have the idea and will develop it if encouraged. Then lots of guards and as nearly as possible regular beats and times, morning tests of the phone lines, specific arrangements for repair in case of trouble. Then lookouts.[10]

In general, subsequent supervisors of the Olympic National Forest followed much of Lovejoy's general plan over the next three decades. As funding permitted, they expanded the trail and telephone system to provide better protection for all parts of the forest. These were supplemented with lookouts and fire patrols to provide an early detection system. Despite the "fair start" to shelter construction in 1912, such structures were probably few and far between until a massive influx of funding in the 1930s.

Recreation in the National Forests

The 1910 fires made forest protection a priority for the Forest Service, and plans such a those proposed by Lovejoy were intended to further this mission. During this time, however, another forest use was quietly increasing. Recreation had been considered an unofficial "use" of national forest lands from the beginning since nearby residents fished, hiked, and camped in the local woods. Legislation in 1899 expanded potential use by

[10] Ibid., 14.

allowing construction of public resorts at mineral springs, such as Olympic and Soleduck hot springs. Over the next several years, federal regulations expanded to include other forms of recreation such as camping or trips for pleasure. The Forest Service began issuing permits for hotels, sanitariums, and summer cabins in 1905, harbingers of the agency's increasing interest in recreation during the early twentieth century.[11]

There were other factors besides changing federal regulations that stimulated the growth of recreation on national forest lands. The back-to-nature movement of the late 1800s and early 1900s introduced Americans to the benefits of the natural world, which was seen as an antidote to everything negative about city life, from its perceived artificiality to the poverty of slums. Intellectuals saw wilderness as a potential substitute for the lost American frontier, a place where wrestling with primitive conditions could develop individualism and independence. Early twentieth century Progressives believed that fresh air encouraged healthful physical activity that led to sharp minds and high morals. These prevailing philosophies fostered the growth of urban parks and a variety of outdoor activities, such as bird watching, in cities. Parents enrolled their children in Boy Scouts and Campfire Girls, and many contributed to Fresh Air funds to send underprivileged children to summer camps. Many families escaped the cities altogether and went camping, believing in the healthful benefits of fresh air as well as the associated exercise. This sport was popular throughout the United States in the early 1900s.[12]

Two other factors combined in the early twentieth century to increase summer tourism and place greater recreation demands on the national forests. First, the amount of vacation time gradually increased for American workers. Between 1900 and 1920, the average work week dropped from 60.1 hours to 49.4 hours, but it did not reach a standard 40 hours until mandated by the Fair Labor Standards Act of 1938. Second, automobile ownership increased rapidly, from one car for every 9,499 people in 1900 to

[11] William C. Tweed, *A History of Outdoor Recreation Development in National Forests, 1891-1942* (Clemson, SC: Clemson University, Department of Parks, Recreation and Tourism Management, ca. 1978), 1-2; Elizabeth Gail Throop, "Recreation Development in the National Forests in Oregon and Washington, 1905-1945" (unpublished ms, 1996), 2.

[12] Nancy F. Renk, "Off to the Lakes: Summer Tourism in Northern Idaho, 1883-1940" (M.A. thesis, University of Idaho, 1992), 57-62.

one for every 13 people in 1920. By then, cars were no longer seen as a luxury but rather as a necessity. Americans expanded their automobile travel as roads increased and improved. When the onset of World War I curtailed European travel, auto tourism blossomed in the United States, boosted by the See America First campaign.[13]

As Americans took to both the outdoors and the open road, they increased their use of public lands. This was expected in the case of national parks, which were established in part to encourage outdoor recreation. But it was new for the Forest Service and the agency was slow to respond. Early visitors did not seem to expect any amenities in the national forests, only the opportunity to enjoy the outdoors. An article in *Collier's Magazine* in 1910 bragged that just a short drive from Seattle "will take you right into the heart of the most primitive forests and wild mountains in the United States – Mount Rainier, the Olympics, the Snoqualmie Forests . . . where you may climb or fish or scrabble over the eternal snows, with the delicious consciousness that most of the forest has never heard a lumberman's ax."[14] In his 1912 annual report, Chief Forester Henry S. Graves noted increased recreational use of the national forests, with particular demand for permits for hotels, cabins, and summer camps. During fiscal year 1913, 1.5 million "pleasure seekers" visited the forests, with the majority only day visitors. These numbers had doubled by 1917, however, when an estimated 3 million visitors spent an average of two and a half days in the forests.[15]

When the National Park Service was established in 1916, its emphasis on recreation added pressure on the Forest Service to expand recreational opportunities on the national forests. Tension between the two agencies stemmed from a long-held antagonism between the Forest Service and those who favored the creation of national parks, due primarily to the loss of thousands of square miles of forests that had been taken for national parks. In northwestern Washington alone, Mount Rainier National Park was carved out of the forest reserve in 1899, and ten years later, Mount Olympus

[13] Ibid., 71-72, 100, 109-110.

[14] Agnes C. Laut, "Everybody's Camping Ground," *Collier's Magazine,* 13 August 1910, 21.

[15] Tweed, *A History of Outdoor Recreation Development*, 2-3; Frank A. Waugh, *Recreation Uses on the National Forests* (Washington: Government Printing Office, 1918), 24.

National Monument was established in the heart of the Olympic National Forest.[16]

To help balance this competition with the National Park Service, the Forest Service hired Frank A. Waugh in 1917 to assess recreational use of the national forests throughout the country. Waugh, a professor of landscape architecture at Massachusetts Agriculture College in Amherst, spent five months doing field work and visiting all forest districts. He recommended trails and roads built to standard specifications to encourage simple forms of recreation, such as hiking or driving. For tourists wanting to stay longer in one spot, Waugh noted the need for campgrounds with good water, sanitation, wood supply, and fireplaces. He stressed that recreation was a valid use of the national forests. To prove this point, he took the 1917 visitor estimates and placed a value of ten cents per hour on a total of 75 million recreational hours, arriving at a value of $7.5 million, "a pretty penny." He concluded that [emphasis his] "*the recreational use of the National Forests has a very substantial commercial value, and that recreation stands clearly as one of the major Forest utilities.*"[17]

Recreation in the Olympic National Forest

Tourists and back-to-nature enthusiasts did not wait for the Forest Service to jump on the recreation band wagon. Instead, thousands of hikers and campers visited forests in the Pacific Northwest in the early 1900s. For instance, on the Olympic National Forest, Ranger Chris Morgenroth reported 5,000 visitors in 1908 and expected this number to rise to 7,000 within a year. One year later, the Forest Service counted 45,000 recreational visitors in the entire North Pacific District. The Regional Forester asked Theodore Rixon to design recreation plans for the increasingly popular Lake Crescent and Lake Quinault areas in 1910. Rixon and his crew laid out public campgrounds and groups of summer home sites to accommodate both horse and boat travel.[18]

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16 Tweed, *A History of Outdoor Recreation Development*, 5.

17 Waugh, *Recreation Uses*, 5-8, 24-26; Throop, "Recreation Development in the National Forests," 5.

18 Morgenroth, "The Olympic National Forest," 22-23; Tweed, *A History of Outdoor Recreation Development*, 3; Fred W. Cleator, "Recreational Facilities of the Olympic National Forest and Forest

After Chief Forester Graves toured parts of the Mount Olympus National Monument in 1914, he recommended returning the south half to the Olympic National Forest and retaining the north half as a potential national park. These boundary changes were confirmed the following year. Although the monument was greatly reduced in size, Graves recognized that it had great recreation potential and urged that it "be protected, fostered, and developed."[19] To meet this goal, he asked Forest Supervisor R. L. Fromme to report on any road and trail projects that would be needed to open and develop the monument "particularly in the interests of recreation and . . . also for increased fire protection and administrative efficiency . . . ."[20]

Fromme's work during the 1915 field season showed that the Olympic National Forest had taken only "a small step . . . toward accomplishing any net work [sic] or unified system of trails." At that time, only the Soleduck-Hoh trail was suitable for horse travel and even part of that was dubious, with "one rather makeshift section of three miles possessing 107 switchbacks and excessively steep pitches." Most of the trail construction to that point had been for administrative and protection needs in high liability areas along the periphery. Despite this slow start, Fromme developed an extensive plan to complete the trail system. Most of the twenty-six trails he described, both existing and proposed, were for protection purposes, with recreation or scenic qualities as an added benefit. One exception was the seven-mile Glacier Creek trail. Fromme noted that while it offered protection, "its most urgent demand at this time is from mountaineers and sight seers, as it will make easily accessible the grandest scenery in the Forest and Mt. Olympus itself." He urged that this project be given priority to please the public. Graves appreciated the report but noted that the projected high costs would block its implementation. He asked Fromme to restrict improvements to administrative needs; the recreational ideas would remain on paper to counter any push to turn the monument into a national park.[21]

Service Plan of Development," (University of Washington) *Forest Club Quarterly* 10 (Winter 1936-1937), 5.

[19] Louter, "The Forest before the Park," 17-18.

[20] R. L. Fromme, Forest Supervisor, to District Forester, Portland, 7 December 1915, RG 95, Olympic National Forest, History Files ca. 1899-1990, box 8 R. L. Fromme Papers, file: Correspondence, NA-PNR, 1.

[21] Ibid., with quotations from 5, 4, and 14; Louter, "The Forest before the Park," 21.

Post-World War I Recreation Development in the National Forests

Recreational use of the national forests increased dramatically following World War I as travelers with cars, money, and leisure time set out to explore the country. This led the Forest Service to hire the first "recreational engineers," in 1919. Within two years, the agency ranked outdoor recreation as one of the major uses of the national forests.[22]

In response to this increased interest, Congress appropriated the first money for recreational developments in FY1923. Officials justified it under forest protection, specifically sanitation and fire prevention, so the $10,000 appropriation went for construction of toilets, fireplaces, and similar simple structures. Congress raised the Forest Service's recreation appropriation to $37,631 in FY1925 to cover campground development, and this amount topped $52,000 five years later. With 110 forests nationwide to divide this pot of money, each got only a modest amount so development was minimal. Most of what could be classed as recreation development was carried out by the rangers as part of their regular duties and included digging outhouses and garbage pits, developing springs, and building simple rock fireplaces at popular camping spots.[23]

The federal government's interest in outdoor recreation was stimulated when President Calvin Coolidge urged the development of a national policy. His call led to the first National Conference on Outdoor Recreation, held in Washington, D.C., in May 1924. One outcome was an inventory of outdoor recreation resources that was used to help guide planning nationwide. The Forest Service took part in a survey of recreational resources on federal lands. This conference met annually through 1929.[24]

Recreation Development in the Olympic National Forest, 1920-1930

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[22] Tweed, *A History of Outdoor Recreation Development*, 8, 10-11; Steen, *The U.S. Forest Service*, 154; Chief Forester, as quoted in Kenneth O. Maughan, *Recreational Development in the National Forests*, Technical Publication No. 45, Bulletin of the New York State College of Forestry at Syracuse University, 7 (May 1934), 24.

[23] Maughan, *Recreational Development*, 25; Throop, "Recreation Development in the National Forests," 6-7, 22, 62.

[24] Steen, *The U.S. Forest Service*, 154-155.

As outdoor recreation was gaining favor within federal agencies, the ideas of wilderness and wilderness recreation also picked up momentum through the writings of Aldo Leopold, Robert Marshall, and others. These were not just abstract concepts in places like the Pacific Northwest. In that region, the Forest Service had hired Fred W. Cleator in 1919 for its newly created recreation office to serve as a recreation examiner for the North Pacific District. He helped develop plans during the 1920s for a wide variety of projects, including limited recreational development of backcountry areas. Such developments fit with wilderness concepts of minimal visitor facilities in places designated as wilderness.[25]

During the early 1920s, Cleator completed recreation plans for both Lake Crescent and Lake Quinault. Assistant Forester L. F. Kneipp sent Cleator's first report to Frank Waugh, who found it "a very good and sensible report." Waugh then went on to muse about the "highly pioneer character" of developments such as this, an early phase of recreation development that would soon be replaced by more intensive development. "This whole recreation problem is one on which we are making some very crude beginnings," Waugh wrote. "We ought to recognize the experimental and temporary character of our work and not be too cock-sure that everything we do today will last for a hundred years." Kneipp was unfazed by Waugh's speculations and noted very practically that there was no need to worry about the next stage of recreation until they got through the first one.[26]

The recreation plans for these two lakes provided an important start for automobile-based recreation in the Olympic National Forest. The Forest Service expanded opportunities for auto tourism during the 1920s by building roads both to popular tourist destinations like the Elwha River and Sol Duc Hot Springs and around the perimeter of the peninsula; this latter road was finally completed in 1931. While some people wanted even more

[25] Hal K. Rothman, *American Eden: The Administrative History of Olympic National Park,* final draft (National Park Service, 2005), 58; Tweed, *A History of Outdoor Recreation Development,* 5, 8, 10-11; Louter, "The Forest before the Park," 24.

[26] Cleator, "Recreational Facilities of the Olympic National Forest," 6; Louter, "The Forest before the Park," 24; L. F. Kneipp, Assistant Forester, to Mr. Cecil, District Forester, 1 May 1922, RG 95, Historical Collection ca. 1902-1985, box 58, file: U-Plans – Olympic, Recreation – Lake Crescent Area [1919-1931], NA-PNR, 1-2.

roads, especially through the rugged interior of the backcountry, such massive projects failed for lack of adequate funding and interest.[27]

The backcountry also attracted others who saw its primitive state as a benefit to the local tourist economy. In 1925, a group of businessmen from Hoquiam investigated the idea of building simple chalets in the Olympic Mountains to provide shelter for hikers and horseback riders. They spent five days that summer along the North Fork trail to Low Divide, returning along the Skyline Trail. Their recommendations to the Hoquiam Chamber of Commerce called for improving access with horse trails but not roads which, they maintained, would not be "in harmony with the type of development that such a splendid scenic region should have." To aid the average traveler, they recommended using trained guides with sufficient saddle and pack horses. They also identified the need for simple shelters or chalets at several locations to accommodate travelers. Other individuals and groups, such as the Seattle Mountaineers, met with Forest Service officials about this time to discuss the possibility of setting aside some of the backcountry as a Primitive Area. The formation of the Olympic Development League stemmed from this interest in opening the backcountry up to tourists.[28]

As increasing numbers of visitors found enjoyment in the wide variety of recreation opportunities in both the Olympic National Forest and the Mount Olympus National Monument, Fred Cleator started work on an overall management plan for both areas. He spent most of August and early September 1927 in the field, accompanied part of the time by Olympic National Forest Supervisor H. L. Plumb; guide and packer Elvin Olson; and W. C. Mumaw, president of the Olympic Development League. The reconnaissance was interrupted twice by fires, and both times Cleator left the pack trip to join the fire lines, even on August 10 when he noted in his field diary, "Celebrated birthday by going out on fire line." In the first of several separate forays into the interior, Cleator and his companions went up the

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[27] Gail H. E. Evans, *Historic Resource Study, Olympic National Park, Washington* (Seattle: National Park Service, Pacific Northwest Region, 1983), 206, 221.

[28] Frank H. Lamb et al., "Report of the Chalet Committee to the Hoquiam Chamber of Commerce," 25 September 1925, RG 95, Historical Collection ca. 1902-1985, box 67, file: L-Recreation – Olympic [1925-1937], 2 of 2, NA-PNR, 1-4; Cleator, "Recreational Facilities of the Olympic National Forest," 6.

East Fork Quinault and Graves Creek to Sundown Pass and Sundown Lake before being called out on the first fire. A few days later, the men resumed their travels up the Duckabush and West Creek to Diamond Meadows and Anderson Pass before backtracking to Dosemeadows and over Hayden Pass to the junction of Hayes and Elwha rivers. From there they continued to Low Divide before leaving for the second fire. A follow-up trip into Low Divide included side trips to Martins Park and Queets Basin. Cleator moved then to the northern access and looked over the Lake Mills reservoir, Sol Duc Hot Springs, and Bogachiel Park, followed by a quick survey of the Hoh, Bogachiel, and Soleduck divides. His last journey to Blue Glacier "was a great trip," he noted.[29]

This extensive field survey led to the development of the *Recreation Atlas* and accompanying map for the Olympic National Forest, better known as the Cleator Plan. Even though Cleator spent more than a month doing field work, he was unable to reach all parts of the rugged interior. His plan and map cover the whole area, however, showing that he gathered information and ideas from others, including the Olympic Development League, who knew the backcountry well. Cleator later described the report as "a classification of recreation values and a coordinated plan of management of these recreation assets along with the utility values of the entire Olympic National Forest." He saw it as establishing "a well balanced system for handling the extremely important and sharply defined multiple uses which were crystalizing [sic] in the Peninsula, and becoming a subject of great public interest."[30]

Cleator proposed some road construction in his plan. He saw the potential for two routes through the interior, one bisecting the area north-south along the North Fork Quinault and Elwha rivers, and the other dividing it roughly east-west along the East Fork Quinault and Dosewallips rivers. Of the two, Cleator favored the east-west route but he admitted that it would be expensive and "would be inimical to the generally accepted wilderness idea of the high Olympics as a whole . . . ." Cleator believed that it was more important from a forest protection standpoint to build stub roads into every

[29] F. W. Cleator, "Field Diary and Travel Record, Aug. 1 to Aug. 31, 1927and Sept. 2 to Oct. 18, 1927, RG 95, Historical Collection, ca. 1902-1985, box 38, NA-PNR.

[30] Cleator, "Recreational Facilities of the Olympic National Forest," 6-7.

major valley to move tourists rapidly through the commercially valuable timber, thus avoiding fire.[31]

There were many trails crisscrossing the interior of the Olympic National Forest by the late 1920s, but Cleator looked at combining both existing and proposed trails into a more coordinated recreational system. Being a practical forester as well as a recreation specialist, he believed that recreational use "should interfere very little, if any, with the accepted road and trail program, since we have here types of use that will fit quite satisfactorily with whatever transportation system is considered administratively desirable."[32]

In his plan, Cleator delineated thirteen geographic units with potential recreation use in the Olympic National Forest. Because he had already done a great deal of work on this forest, nearly half of these units had existing recreation plans on file, even though little or no development had started. Cleator divided the vast interior region into two areas, the proposed Mt. Olympus Snow Peaks Recreation Area and the Olympic Primitive Area. This latter area, which was labeled on the map as the Olympic Wilderness Area, lay south and east of the East Fork Quinault River. Cleator plans called for this to be a true wilderness area as defined by the wilderness standards of the period. The Primitive Area would have only minimal administrative improvements including only trails, telephone lines, and lookouts for forest protection. The only buildings would be a few necessary rough shelters.[33]

The Mt. Olympus Snow Peaks Recreation Area was designed for more extensive development. Although this was a rugged and dangerous area, given to severe storms, Cleator also saw it as "a most wonderfully attractive scenic playground." To ensure the safety and comfort of those who would use this landscape, Cleator proposed establishing both trail depots and safety stations, whose functions appear to overlap. The former were to be a commercial operation, either at the end of a stub road or at an intermediate

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31 F. W. Cleator, *Recreation Atlas, Olympic National Forest*, 25 May 1929, RG 95, Olympic National Forest, map case 5, NA-PNR, 2.

32 Ibid.

33 Ibid., 3.

location. They would include one or more permanent buildings to provide travelers with prepared meals and comfortable, clean accommodations. Safety stations were to be located in the interior, about one-day's travel apart. They would be run by guides who would provide meals and beds in "a permanent building of a rustic nature . . . ." Cleator expected some of these eventually to develop into more substantial chalet operations. At the time, there was one chalet at Low Divide and another proposed along the East Fork Quinault.[34] Although the network of more elaborate trail depots and safety stations did not develop as envisioned by Cleator, the Forest Service built the first documented simple backcountry trail shelters in 1928. Such construction picked up considerably in the early 1930s, and by 1935 many of Cleator's proposed sites became locations of Forest Service trail shelters.[35]

These simple shelters had been built on other national forests since the 1910s. Parish S. Lovejoy wrote that his crews had "made a fair start to the shelters" on the Olympic National Forest in 1912 but he did not specify locations or style. Other forests in both Oregon and Washington were using small, three-sided Adirondack shelters at least by 1916. Initially, such shelters were built for administrative purposes. Trail crews used them while working to maintain both trails and telephone lines, and packers stopped there when hauling supplies to fire lookouts. Shelters were next to trails and usually adjacent to both a meadow and water supply to ensure feed for pack stock. Quite naturally, such shelters also were used by hikers and equestrians, especially on the west side of the Cascades where wet weather was common. When describing the system of trail shelters in the Olympic National Forest, Cleator wrote that they "were frankly intended to be a dual-purpose development," serving both trail crews and fire patrols as well as "the red-blooded fisherman and wilderness seeker."[36]

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[34] Ibid., 2-3.

[35] F. W. Cleator, "Olympic Forest Recreation Plan From Field Survey, Aug – Sept. 1927," map dated 1 February 1928, RG 95, Olympic National Forest, map case 5, NA-PNR; U.S. Department of Agriculture, Forest Service, "Olympic National Forest, Washington," map dated 1935, Olympic National Park Archives, map case 1.04.

[36] Tweed, *A History of Outdoor Recreation Development*, 9; Throop, "Recreation Development in the National Forests," 59-60; Lovejoy, Memo for Fromme, 14; Cleator, "Recreational Facilities of the Olympic National Forest," 7.

Private Development in the Olympic National Forest

Much of Cleator's plan for recreational development of the designated areas of the Olympic National Forest depended on private investment. This was already evident at the hot springs and around the major lakes where summer cabin sites and resorts had been increasing since 1915. Up to that date, special use permits were granted on a year-to-year basis, and many people were reluctant to invest much money and effort into a potentially temporary arrangement. The Term Permit Act of 1915 allowed for longer leases and thus encouraged greater investment in cabins and resorts. In addition to the lake developments, a few hardy souls built summer cabins along the Elwha River, accessible only by foot along the well-used trail. To guide the development of summer homes in the national forests, in 1918 the Washington Office published Waugh's manual, *Landscape Engineering in the National Forest.* In it, he recommended large lots, from one-half to one acre each, to avoid crowding which, he claimed, "inevitably tends to shabbier building."[37]

Business interests in the Gray's Harbor communities wanted to promote tourist travel into the interior of the Olympics by the mid-1920s. The Hoquiam Chamber of Commerce, among others, looked into a system of chalets to provide accommodations in the backcountry. After a five-day trip in 1925, the Chalet Committee recommended a medium-sized chalet at Low Divide; either a chalet or shelter at the head of the planned trail up the East Fork Quinault; and other shelters at regular intervals for use in case of bad weather. Two private companies organized within a short time to undertake such developments, working with Forest Service officials for proper permits and approval. The Olympic Chalet Company had plans for three chalets and a string of twelve shelter camps, but they built only one of each. Crews finished the rustic log chalet at Low Divide in 1927 and added other cabins and a bathhouse over the next few years. They also constructed a shelter at Nine-Mile Post on the North Fork Quinault trail. The company hit hard times in the Depression and dissolved in 1936, and the chalet and cabins were destroyed by an avalanche in 1944. The other company, the Olympic Recreation Company, had more modest goals and greater success. They

[37] Throop, "Recreation Development in the National Forests," 41-42.

completed the Graves Creek Inn in 1930, another rustic log building. They followed it one year later with the larger log building known as the Enchanted Valley Chalet. The company sold the lodge to the National Park Service in 1939, ending large private operations in the Olympic interior.[38]

Recreation Development in the Olympic National Forest, 1930-1933

Outdoor recreation continued to grow during the 1920s, a trend with major consequences for the Forest Service. In just over twenty years, recreational use of the national forests skyrocketed from approximately 400,000 in 1910 to just under 32.3 million in 1931. The Forester's Annual Report that year noted, "This heavy and increasing use continually emphasizes the need for better and extensive improvement of the national forest public camp grounds." The onset of the Depression changed the prospects for recreation development, initially for the worse. Despite a 38 percent increase in recreation use in just 1929, funding for recreation on the national forests decreased by 25 percent in FY1932-1933.[39]

By the early 1930s, the Olympic National Forest was poised for an expansion in outdoor recreation. It was one of the few forests nationwide that emphasized outdoor recreation, ranking it second among the four traditional forest uses (timber, watershed protection, grazing, and recreation). More than 75,000 visitors came to the Olympic National Forest in 1931, a big increase over earlier numbers but far below both Mount Rainier (176,159 visitors) and Mount Hood (686,352 visitors) national forests.[40]

Forest Supervisor H. L. Plumb wrote out a list of the forest's "most urgent recreational needs" in March 1932. Much of his emphasis was on improved sanitation (outhouses and garbage pits) for both automobile camps and for more remote trailside camps. The increasing number of hikers into the backcountry required special consideration. "Due to the frequency of

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38 Lamb et al., "Report of the Chalet Committee," 4; Evans, *Historic Resource Study,* 291-303.

39 Kenneth O. Maughan, *Recreational Development in the National Forests,* Technical Publication No. 45, *Bulletin of the New York State College of Forestry at Syracuse University* 7 (May 1934), 23-26; Throop, "Recreation Development in the National Forests in Oregon and Washington," 7.

40 Maughan, *Recreational Development,* table following 36, table following 146.

inclement weather, it is rather imperative that some form of shelter be provided," Plumb wrote. "Numerous shelters, built in connection with trail construction and maintenance, are heavily used by the public, but many shelters are needed for purely recreational use where trail maintenance shelters are not needed." He hoped that the Olympic National Forest could start meeting this demand during the fiscal year. Such shelters were not just for the convenience of hikers but also for fire protection. Plumb noted that campers built "bark or bough wickiups along the trail . . . which are in themselves excellent fire traps."[41]

Plumb's attached list of specific recreation needs was broken down by district. The larger auto camps called for more improvements while the backcountry ones needed only Wallowa toilets, garbage pits, and sometimes an "ice can stove." Plumb noted that such stoves should be installed both at existing shelters and where new ones were planned. He listed only two specific shelters (Lena Lake in the Hoodsport District and Seven Mile in the Port Angeles District) and he listed five sites that needed shelters (Rainbow Camp and Honeymoon Meadows in the Quilcene District and Winslow Springs, Chicago Camp, and Elwha Basin in the Elwha District). These shelters were projected to cost $75 each. Plumb also noted other places just by name, suggesting that they were popular camping sites where future shelters might be located; all needed some form of sanitation and/or ice can stoves. These included Duckabush, Nine Stream, Brown's Point, and Upper Lena Lake in the Hoodsport District; Ten Mile Camp, Deer Park, Camp Colonel, Diamond Meadows, Doseforks, and Dosemeadows in the Quilcene District; Baltimore, Bankers, Cat Creek, Crackerville, Krause Bottom, and Heather Park in the Elwha District; Hoh Lake, Heart Lake, Mosquito Creek, Blue Glacier, Soleduck Falls, Bogachiel Park, Mink Lake, and Deer Lake in the Port Angeles District; and Wolf Bar, Francis Creek, Sixteen Mile, Graves Creek, O'Neil Creek, and West Fork Humptulips in the Quinault District.[42]

It is not clear how much progress the Olympic National Forest made on its recreation plans during FY1933. Regional Forester C. J. Buck notified

[41] H. L. Plumb, Forest Supervisor, Olympia, to Regional Forester, Portland, 14 March 1932, RG 95, Historical Collection ca. 1902-1985, box 67, file: L-Recreation-Olympic [1925-1937], 1 of 2, NA-PNR, 1.
[42] Ibid., 4-6.

Plumb in mid-July 1932 that his request for $1,317 had been approved for a total of just $350. Buck endorsed improvements at the high camps that fit the limited allotment. One month later, he was able to increase the funds by $600 from the Emergency Relief fund for recreation improvements. Buck specified that one-third of it was to be spent on trail shelters for the high Olympics.[43]

Supervisor Plumb made another list of the forest's most important needs for outdoor recreation in March 1933. Once again, recreational shelters were "urgently needed" in the backcountry which was "used extensively for recreational purposes." Plumb hoped there would be emergency relief funds for four shelters: Cold Springs on the Skyline-Queets Trail; High Divide on the Soleduck; and at both Elkhorn and Elwha Basin on the Elwha District. Each of these shelters would cost $100 since they needed to be substantial enough to withstand heavy snows. He mentioned two existing shelters not listed one year earlier, one at Elk Lake Camp on Jefferson Creek and another at Soleduck Falls. Plumb also recommended construction of more Wallowa toilets at various camping sites including Blackwood Lake, Deer Lake, Elk Lake, Olympus, and Hoh Lake on the Port Angeles District; Boulder Lake on the Elwha District; Deer Park, Cedar Springs, and Three Forks on the Quilcene District; and Moonshine Flats, Tschletshy Creek, Campbell's Bottom, O'Neil Creek, Enchanted Valley, Bob Creek, Graves Creek Basin, Promise Creek, and Low Divide Camp on the Quilcene District.[44]

Recreation Development in the Olympic National Forest, 1933-1938

The election of President Franklin Delano Roosevelt in November 1932 marked the start of a decade of major recreation development on public lands. The country was in dire economic straits when Roosevelt took the oath of office on March 4, 1933. There were 13 million Americans out of work then, with unemployment especially high among young people: 25

[43] C. J. Buck, Regional Forester, to Forest Supervisor, Olympia, 19 July 1932, RG 95, Historical Collection ca. 1902-1985, box 67, file: L-Recreation-Olympic [1925-1937], 1 of 2, NA-PNR, 2; C. J. Buck, Regional Forester, to Forest Supervisor, Olympic, 23 August 1932, RG 95, Historical Collection ca. 1902-1985, box 67, file: L-Recreation-Olympic [1925-1937], 1 of 2, NA-PNR, 1.

[44] H. L. Plumb, Forest Supervisor, Olympia, to Regional Forester, Portland, 14 March 1933, , RG 95, Historical Collection ca. 1902-1985, box 67, file: L-Recreation-Olympic [1925-1937], 1 of 2, NA-PNR, 1-4.

percent of those between the ages of fifteen and twenty-four were unemployed in 1932 and another 29 percent had only part-time work. These young Americans stood little chance of finding work since they had neither experience nor skills. An avid conservationist, President Roosevelt also was concerned with the degraded condition of the nation's forests and rangelands. Just over a month after taking office, Roosevelt signed an executive order to create one of the most popular of the New Deal programs, the Civilian Conservation Corps. As one historian wrote, with the CCC, the president "brought together two wasted resources, the young men and the land, in an attempt to save both."[45]

The CCC operated under the jurisdiction of four cooperating departments. The Department of Labor selected applicants; the War Department operated the camps; and the Departments of Agriculture and the Interior directed the work projects. Those eligible for enrollment included unmarried men between the ages of eighteen and twenty-five. The initial authorization for 250,000 men was supplemented by another 25,000 Local Experienced Men (LEMs); by the time the program ended, 2.5 million men had joined. Enrollee pay came to $30 per month, although each man was required to send $25 home to his dependent family members. Close to 300,000 families benefited from these CCC checks from 1933-1935, with an additional ripple effect spreading to nearly 3 million families.[46]

During Roosevelt's presidency, the Forest Service greatly increased the number of recreational facilities and expanded their scope. This work was made possible by the availability of CCC labor and the increase in public works funding, leading to what one historian described as a decade of "frenzied activity" in recreation development. Much of the initial work dealt with the extensive backlog of projects from years of low budgets. The agency supported the importance of outdoor recreation with the establishment of a new Division of Recreation and Lands in the Washington Office in 1935. Less than two years later, the new office was providing

[45] Executive Order #6101 established the agency officially known as Emergency Conservation Work, which quickly became known by the name supplied by Roosevelt, the Civilian Conservation Corps. John A. Salmond, *The Civilian Conservation Corps, 1933-1942: A New Deal Case Study* (Durham: Duke University Press, 1967), 3-4; Throop, "Recreation Development in the National Forests," 12-13.

[46] Neal McMaster Nelson, "An Historical Inquiry into the Civilian Conservation Corps Movement with Special Reference to the Ninth Corps Area" (Master's thesis, University of Idaho, 1938), 1-47.

local forests with standardized plans for both recreational developments and forest buildings. Recreational facilities expanded from simple campgrounds to more elaborate complexes containing a variety of buildings from bathhouses to playgrounds to amphitheaters to serve the "sharply mounting tide of recreationists."[47]

CCC camps in western Washington fell under the jurisdiction of Fort Lewis in Tacoma. The first enrollees arrived there on May 2, 1933, and soon were dispatched to camps. Four of the first ten camps were on the Olympic Peninsula at Humptulips, Lake Cushman, Quilcene, and Elwha; within a few weeks, three more were added at Snider, Slab Camp, and the Bogachiel-Hoh. Much of the CCC work nationwide focused on both forest health and fire prevention. Crews of young men pulled *ribes* plants as part of a mostly futile effort to eradicate blister rust in white pine forests. Other CCC enrollees built trails, roads, telephone lines, and lookouts to facilitate the Forest Service's increased emphasis on fighting fires after the disastrous 1934 fire season. In the Pacific Northwest, the Forest Service's primary needs were in transportation and communication. The agency set CCC crews to work on trails, roads, and telephone lines throughout the region. After taking a year and a half to bring the backlog under control, they were ready to start what Cleator termed a "scientific recreation development program." CCC crews installed sanitary toilets, water systems, camp tables and stoves, rustic bath houses, and community kitchens in auto camps and picnic areas. More remote areas benefited from improved trails, trail signs, garbage pits, and "strong, rustic mountain shelters." A December 1934 report on Camp Elwha, F-17, listed recreation projects as the primary focus. Progress had been slow, however, because "everyone was in the dark about the methods at first." Nonetheless, the men had been building recreation trails, clearing camp sites, and constructing combination fireplace/stoves for these camps. The following year this camp did extensive improvements at both Elwha and Altair campgrounds nearby.[48]

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[47] Tweed, *A History of Outdoor Recreation Development*, 16-20; Steen, *The U.S. Forest Service*, 199-209; Throop, "Recreation Development in the National Forests," 8-10.

[48] Evans, *Historic Resource Study*, 334-339; F. W. Cleator, "Recreation Work of the U.S. Forest Service In the Pacific Northwest," 14 March 1936, RG 95, Historical Collection ca. 1902-1985, box 56, file: L-Recreation 1936, NA-PNR, 2-3; A. E. Glover, North Pacific Region General Inspection Report for CCC Work Camp Elwha, F-17, 18 December 1934, RG 95, Historical Collection ca. 1902-1985, box 58, file: U-Inspection-Olympic [1933-1938], NA-PNR, 1-9.

By the end of 1936, the results of CCC work on the Olympic National Forest were impressive. Prior to 1933, the forest had spent a total of $11,566.87 on recreation improvements. In just four years, from 1933 to 1936, such spending soared to $109,360.22. People looking for recreation on the forest had 390 miles of roads and 925 miles of trails for access. They could stay in one of the twenty-six auto camps, with accommodations for approximately 2,000 at any one time, or in one of fifty trail camps, with accommodations for 1,000. Visitor counts, evidently done in 1936, showed concentrations at resorts, campgrounds, and shelters. The statistics showed heavier use along the Hood Canal, leading one forest official to conclude that visitors preferred areas that had been logged to areas of virgin timber like that found on the west side of the peninsula. In fact, he suggested, "the thick virgin timber . . . soon becomes monotonous because of the 'shut in' and depressed feeling it produces."[49]

The Forest Service promoted its recreational improvement in a 1936 brochure on the Hood Canal Recreation Area in the southeastern part of the Olympic National Forest. It not only described trails but also places to camp. Some of these had shelters which, the brochure noted, were "especially convenient during inclement weather." These buildings were "open-front log structures constructed along forest trails in the back country. They were built primarily for the use of forest workers, but when not occupied, their use by forest visitors is permitted and encouraged." Such shelters could be found at Intermount Campground, Camp Comfort, Church Creek, and Camp Harps in the South Skokomish-Wynoochee area; Spider Lake, Neby Camp, Upper Satsop Lake, and Satsop River on the way to Wynoochee Guard Station; near the end of Big Creek Road and at Flapjack Lakes in the North Fork Skokomish area; and Five Mile and Ten Mile on the Duckabush River trail.[50]

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[49] [J. R. Bruckart, Forest Supervisor], Olympic, 17 February 1937, RG 95, Olympic National Forest, box 5, file: L/LP-Land Acquisitions and Boundaries, Olympic, Mt. Olympus National Monument, 1938, NA-PNR, 2; Memorandum to accompany Recreational Map (Item #9), Olympia, 1 February 1937, RG 95, Olympic National Forest, box 5, file: L/LP-Land Acquisitions and Boundaries, Olympic, Mt. Olympus National Monument, 1938, NA-PNR.

[50] U.S. Forest Service, Department of Agriculture, Olympic National Forest, "Hood Canal Recreation Area," Washington Guide No. 18, 1936, RG 95, Olympic National Forest, box 5, file: L/LP-Land Acquisitions and Boundaries, Olympic, Mt. Olympus National Monument, 1938, NA-PNR.

Mount Olympus National Monument, 1933-1938

Just as the Olympic National Forest was poised to greatly expand its recreational opportunities, jurisdiction for Mount Olympus National Monument was transferred to the National Park Service as part of a larger reorganization of the government. The transfer of nearly 300,000 acres, completed on June 10, 1933, was a bitter pill for the Forest Service to swallow, and hard feelings persisted for many years. In 1936, Fred Cleator claimed that the transfer disrupted twenty years of recreation planning by his agency. "Under the chaotic conditions which now prevail," he wrote, "long time constructive recreation planning is pretty much at a standstill in the Olympics, awaiting the 'will of the people.'" Cleator and most others in the local Forest Service actively opposed formation of a national park, right up to the end.[51]

The National Park Service did not take over the actual administration of Mount Olympus National Monument until February 1934. At that time, Owen A. Tomlinson served as the superintendent for both the monument and for Mount Rainier National Park. Preston P. Macy handled the day-to-day administration and was appointed custodian for the monument in the fall of 1935.[52]

To help the new administrators see both the lay of the land and the existing improvements (roads, trails, and structures), Macy organized a tour of the monument in May 1934. David H. Madsen, head of the National Park Service's Wildlife Division, and George A. Grant, the chief photographer for the agency, accompanied Macy. They issued an initial report in late July which described the spectacular scenery, forests, and wildlife. They also noted that much of the area was inaccessible due to the poor trail system that included about 150 miles trails that were only second or third class, "wholly unsuited for the purposes of a National Park or a National Monument." In a dig at their rival agency, they noted that the National Park Service had given the Forest Service $2,000 to clear trails for the season, but as of late July many of the trails remained unopened and others were "unsatisfactory for

51 Cleator, "Recreational Facilities of the Olympic National Forest," 7-8.

52 Rothman, *American Eden*, 64, 89.

public use." A proposed budget requested funds for staff positions as well as money for improving trails and building two patrol cabins ($1,500 each) and three "Shelter Cabins" ($350 each).[53]

After his first full season in the field, Macy and his coauthors issued an updated version of the above report. In addition to the descriptions of scenery and wildlife, they noted that the Forest Service had given special use permits for two privately run chalets as well as four summer homes. While these were grandfathered in, the men agreed with the almost universal opinion that the monument "should remain free from the development of roads, hotels, etc. That adequate trails and shelters for the convenience of the public should be provided, but the area should for all time remain as nearly as possible in its primitive condition."[54]

As Macy roamed the monument to assess its needs, he noted shelters and other buildings. He compiled a list in August 1934 that included seven shelters (four on the Elwha, two on the Upper Sol Duc, and one on the Hoh). All measured ten feet square and were in good condition. These shelters were popular with hikers, and Macy noted that most of them along the Elwha had been filled during the month. In late December 1934, Macy submitted an extensive list of proposed projects to use public works funding. It included camp sites and shelters at Hoh Lake, Blue Glacier, Low Divide, Elwha Basin, Baltimore Camp, Enchanted Valley, Little Elkhorn, Dosemeadows, and Cold Springs; patrol cabins at Hoh River, Low Divide, Enchanted Valley, Hee Hee Creek, Honeymoon Meadows, Kirks Lake, and Home Sweet Home; and barns at Olympus Guard Station, Enchanted Valley, Dosemeadows, and Honeymoon Meadows. All of these projects were disapproved in December 1935.[55]

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[53] Preston P. Macy, George A. Grant, and David H. Madsen, "Primary Report on Mt. Olympus National Monument," 28 July 1934, Preston P. Macy Papers, Accession No. 3211, box 1, file 32, University of Washington Libraries, Special Collections Division, 3, 6.

[54] [Preston P. Macy, George A. Grant, and David H. Madsen], "Preliminary Report on Mt. Olympus National Monument," 5 October 1934, Accession No. OLYM-438, Administration Files, Catalog No. OLYM-18414, box 1 file 8: 1936-1948, History, Olympic National Park Archives, 7.

[55] Macy's measurement of 10 x 10 for the shelters appears to be an estimate since his itemized list one year later listed all the shelters as either 14 x 14, the standard Forest Service design, or 14 x 16. Preston P. Macy, Narrative Report [hereafter called Superintendent's Narrative Report], 2 September 1934, 5-6, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file: 1, 1934, Olympic National Park

The backcountry shelters took a beating during the winter of 1934-1935. Macy reported in May 1935 that one had washed away in high waters, another had collapsed under the snow, and a third was hit by a tree. The list grew the next month with news that the Lower Sol Duc Park shelter was lost in an avalanche. He later found that the Seven Mile shelter on the Sol Duc River had nearly collapsed during the winter, but he hoped to be able to salvage enough material to rebuild it. The winter had been hard on trails as well but despite the damage, Macy found heavy recreational use of the monument. On his trips through the area in August, he found the shelters filled almost every night, with the overflow crowd camping nearby. "The need for additional shelters is very apparent," he noted, "but it takes more than a lack of shelters to keep the lovers of the wilderness at home." Many of the existing shelters also needed improved sanitation facilities. Some were equipped with a Forest Service portable toilet, described by Macy as having "neither roof or sides and in almost no case is there a door to a toilet. These conditions will be remedied as fast as possible," he promised. "The strange part of it is that no one complains about it."[56]

Macy provided a detailed itemized list of buildings in the monument in August 1935, giving dimensions, age, water source, sanitation facilities, and location. He listed the following twelve shelters by district:

Duckabush District
- Duckabush, 14 x 14 feet, 9 years old [1926]
- Diamond Meadow, 14 x 14 feet, 6 years old [1929]

Elwha District
- Camp Baltimore, 14 x 16 feet, 2 years old [1933]
- Camp Little Elkhorn, 14 x 16 feet, 2 years old [1933]
- Elkhorn Ranger Station, 14 x 16 feet, 2 years old [1933]
- Hayes River Camp, 14 x 16 feet, 4 years old [1931]
- Chicago Camp, 14 x 16 feet, 4 years old [1931]

North Fork of the Quinault District

Archives; Jacilee Wray, "Statement of Historic Context for USFS/ONP Historic Landscapes, 1898-1942," draft, 5 September 1996, Appendix, 11.

[56] This toilet design was known within the Forest Service as a Wallowa toilet. Superintendent's Narrative Report, 4 May 1935, 3, 3 June 1935, 1-2, 1 August 1935, 4, 1 September 1935, 5, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file: 2, 1935, Olympic National Park Archives.

Sixteen Mile, 14 x 16 feet, 5 years old [1930]
Hoh District
Sol Duc Park, 14 x 16 feet, 4 years old [1931]
Sol Duc Crossing, 14 x 16 feet, 3 years old [1932], badly damaged
Elk Lake, 8 x 10 feet, 8 years old [1927]
Olympus shelter/wood shed, 14 x 32 feet, 3 years old [1932].[57]

In addition to the shelters, Macy also provided the same detailed information on other buildings he found within the monument boundaries. Administrative structures included the Elkhorn Ranger Station (new station, old station, and horse barn); Hayes River cabin; Olympus Ranger Station (new station, old station, and the combined wood shed/shelter described above). There were also two fire lookouts, one at Bogachiel Peak and the other at Dodger Point. Two private companies had developments in the monument. The Olympic Recreation Company owned the Enchanted Valley Chalet and a smaller cabin at the same site, while the Olympic Chalet Company had a log hotel, four shake cabins, and a bath house at Low Divide. Private individuals owned summer homes, including Mr. Drum, Judge Remann, H. H. Botten, and Dr. Ball. In addition, one cabin was simply labeled as the June Creek cabin, with uncertain origins. Several months later, in February 1936, Macy also listed a ranger station at Dosemeadows which apparently was just a small cabin.[58]

Before the end of the 1935 season, Macy's crews had added four new shelters. These were located at the Elwha-Quinault (Low) Divide, Home Sweet Home, Honeymoon Meadows, and Hayes River. Since there was already a shelter at Hayes River, it is not clear if this was in a slightly different location or if it replaced the existing one. These new shelters were larger than those built by the Forest Service, measuring 14 x 18 feet. But like the earlier ones, they were designed for a dual purpose, to shelter Park Service trail crews as well as recreational visitors. The staff concentrated on

[57] Preston P. Macy, Acting Custodian, to Marlow Glenn, Accountant, Mount Rainier National Park, 24 August 1935, Structure Files, file: 304-A Olympus G.S., Olympic National Park Archives.
[58] Ibid.; Preston P. Macy, Acting Custodian, to O. W. Carlson, Assistant Superintendent, Mount Rainier National Park, 8 February 1936, 1, Preston P. Macy Papers, Accession No. 3211, box 1, file 19, University of Washington Libraries, Special Collections Division.

improving sanitation at the shelters during the 1936 season, adding outhouses and providing chlorinated lime for use in both the outhouses and garbage pits.[59]

Olympic National Park, 1938-1941

The many years of park advocacy finally paid off when President Roosevelt signed a bill on June 29, 1938, to create Olympic National Park. Macy's responsibility increased with nearly double the acreage (634,000 acres) as well as additional access roads, hundreds of miles of trails, and a variety of buildings, including many trailside shelters. The first order of business was a survey of the new park in July 1938 to provide the basis for a management plan to guide development. Members of the team from the National Park Service included Acting Superintendent Macy; Owen A. Tomlinson, Superintendent of Mount Rainier National Park; David Madsen, Supervisor of Fish Resources; E. Lowell Sumner, Regional Wildlife Technician; and E. A. Davidson, Regional Landscape Architect. They were joined by Harold L. Ickes, Secretary of the Interior, and Irving Brant, Representative of the Secretary and well-known conservationist.[60]

The management guidelines developed by this distinguished group emphasized preservation of wilderness. This wilderness policy was to guide - and limit - all new improvements, a new concept for the National Park Service at the time. Road construction would be minimal, with emphasis instead on an extensive system of trails. Since visitors would be traveling by foot or horse, the new park required additional shelters, with the more popular camping areas needing either larger shelters or multiple smaller ones. "Very careful planning should go into the design of trailside shelters," the group advised, "so that they may be most practical and efficient types, yet give no impression of sophistication. Use of native materials which may be obtained at the site is, of course, most desirable." The group recommended providing bunks in the shelters to prevent users from cutting

[59] Superintendent's Narrative Report, 2 November 1935, 4, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file: 2, 1935, Olympic National Park Archives; 3 August 1936, 6, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file: 3, 1936, Olympic National Park Archives.

[60] Rothman, *American Eden*, 85; National Park Service, "Statement of Controlling Development Policies," [ca. 1938], B-1, OLYM-621, Olympic National Park Archives.

boughs from nearby trees. A few months later, Ickes elaborated on this policy in a talk in Seattle. "It is our intention to build overnight trail shelters for hikers and horseback parties," he said, "but those who want all the comforts of home, including facilities for reading while taking a bath, will have to look for them in the communities that encircle this park at the base of the mountains."[61]

Macy supplemented his limited budget with help from three popular New Deal programs, the Civilian Conservation Corps (CCC), the Public Works Administration (PWA), and the Works Progress Administration (WPA). (While the first two programs benefited projects around the park, WPA work was concentrated at park headquarters.) The CCC had been actively working in the adjoining Olympic National Forest since 1933 but had not extended its projects into the boundaries of the national monument. When the federal government tried to reduce the number of CCC camps in March 1938, it listed Camp Elwha among those to be closed. The Forest Service was ready to abandon the camp but protests from the local chamber of commerce, as well as interest from the newly formed national park, facilitated a transfer of the camp from one agency to the other. The National Park Service took over the camp on December 1, 1938 and changed the number from FS-17 to NP-1 (later NP-9). Olympic National Park was given a second CCC camp in August 1940. NP-10 was located at the Norwood Guard Station near Lake Quinault. Crews from both camps worked on road and trail construction; maintenance of telephone lines; installation of water and sanitation systems; and construction and landscaping of campgrounds, shelters, patrol cabins, and administration buildings.[62]

The National Industrial Recovery Act of 1933, written to benefit the construction industry, established the Public Works Administration (PWA). Most PWA money funded public buildings, such as schools and courthouses, but some money was designated for more modest buildings, roads and bridges, or even acquisition of privately owned lands. Soon after its establishment, Olympic National Park got its first PWA allotment of $205,500, which included $115,000 for construction projects such as the large public buildings at the park headquarters as well as a fire lookout,

61 Ibid., B-2 - B-4; Ickes quoted in Evans, *Historic Resource Study*, 222.

62 Evans, *Historic Resource Study*, 347-351.

patrol cabins, trailside shelters, outhouses, and communication systems. The remaining $90,500 went for trail construction.[63]

Assistant Landscape Architect Max Walliser began work as the park's Resident Architect on August 29, 1938, with a primary focus on plans for the new headquarters. He also found time to draw up plans for several types of patrol cabins, shelters, and outhouses. CCC enrollees built two outhouses of the approved design that fall, both at Soleduck Falls. Macy noted that this was the beginning of a program to improve sanitation throughout the park, something he had been advocating for years. Crews also selected sites for new trailside shelters, but they were not able build any before snowfall ended the 1938 construction season. Instead, CCC laborers from Camp Elwha split shakes and cut timbers for the fire lookout, patrol cabins, and shelters, and they prepared the materials for packing into remote sites once the weather improved.[64]

During the summer and fall of 1939, CCC crews constructed two new shelters and nearly finished a third one before bad weather set in. Thirty-one enrollees from Camp Elwha set up a side camp that summer at the Eagle Guard Station and lived there while they worked on projects in the area, including the Soleduck Falls shelter. It was a new design (OLY-2003-B) for a shelter, more elaborate than the simple Adirondack-style buildings scattered around the park. The T-shaped log shelter was built in the rustic style so popular with both the National Park Service and the Forest Service of this period. The same plan was used in the other two shelters at Moose Lake and Hoh Lake.[65]

Following the completion of these three buildings, no other shelters were built in Olympic National Park until after World War II. Most of the new construction from 1940-1941 was concentrated at park headquarters both on

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[63] Superintendent's Narrative Report, 3 October 1938, 1, 3 November 1938, 1, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file: 5, 1938, Olympic National Park Archives; Evans, *Historic Resource Study*, 361-362.

[64] Superintendent's Narrative Report, [no date, ca. November 1938], 1-3, 2 December 1938, 2-3, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file: 5, 1938; 4 January 1939, 3, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file: 6, 1939, Olympic National Park Archives.

[65] Superintendent's Narrative Report, 7 July 1939, 3, 9 August 1939, 2, 12 September 1939, 3, 3 November 1939, 1, 4, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file: 6, 1939, Olympic National Park Archives; Wray, "Statement of Historic Context," A-17 – A-20, A-25.

buildings and landscaping. Smaller projects around the park included patrol cabins and outhouses; utilities; communication systems, both telephone and radio; and trail construction. One of the larger projects was a new winter sports area at Deer Park, constructed by a small CCC crew stationed there in a side camp. During this same period, the park acquired more than 187,000 additional acres from the Forest Service, bringing in trails and roads, auto camps, guard stations, shelters, and other buildings, "all of which," Macy noted, "require time and attention in bringing them up to National Park Service standards."[66]

Olympic National Park during World War II, December 1941- August 1945

The Japanese attack on Pearl Harbor on December 7, 1941, brought the United States into World War II. On the west coast, fears of a full-scale Japanese invasion spurred the development of a coastal defense system, especially on the vulnerable Olympic Peninsula which bordered the crucial Strait of Juan de Fuca and provided a barrier for the Puget Sound shipyards at Bremerton and ports at Seattle and Tacoma. The Army, Navy, and Coast Guard all mobilized in defense of this strategic region during the war. Initial actions included reactivating aging defensive facilities, installing anti-aircraft weapons, and stationing troops along the coast.[67]

Olympic National Park and its staff immediately plunged into the war effort. CCC crews working on the new park headquarters were shifted to building a new airfield, and the park loaned both materials and equipment for the project. Landscape Architect Frederick Leissler was detailed to advise the military on "natural arrangements for camouflage of gun emplacements."[68]

The park's largest role in the war effort, however, was with the Aircraft Warning System (AWS). The U.S. Army established this program early in 1942 with observation posts in remote mountains and coastal areas not

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66 Superintendent's Narrative Report, 10 June 1940, 2-3, 10 September 1940, 4, 10 November 1940, 4, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file: 7, 1940, Olympic National Park Archives.

67 Evans, *Historic Resource Study*, 377-379.

68 Superintendent's Narrative Report, 9 January 1942, 1-3, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file: 9, 1942, Olympic National Park Archives.

covered by conventional radar. Pairs of specially trained civilians, often a married couple, staffed these posts around the clock. They noted any aircraft sighted and transmitted information about these flights with "flash" messages over telephone and radio. In addition to cooperating with the Army, the Park Service worked with the Forest Service, which served as the coordinating agency for the AWS.[69]

Because of their location on the Olympic Peninsula, both the Olympic National Park and the adjacent Olympic National Forest contained sites considered strategic for the air surveillance work. In fact, during several years preceding the war, the park had been cooperating with the military by conducting airplane observation tests and thus was prepared to continue such work. The tests had located a number of useful observation posts within the park which provided unobstructed views of the ocean and the strait. Just one month into the war effort, park staff at the Deer Park lookout were reporting plane sightings to the Army.[70]

Following the organization of the AWS early in 1942, the staff at Olympic National Park worked long hours to establish a network of lookouts in the park. Rangers and other staff had to haul supplies to the remote outposts, keep telephone lines and radios repaired, and monitor flash messages. By late March, the park had three lookouts staffed for defense purposes and expected to have another five locations chosen soon. Macy reported that six men had spent two days hauling supplies to Hurricane Lookout, using toboggans to cross more than three miles of snow. Another eight men had to carry four hundred pounds of supplies to the other lookouts. He recognized that maintaining these posts would be difficult. Park rangers spent much of their time during the fall of 1942 supplying the AWS stations in the park and maintaining both the trails and telephone lines to the stations. The strain on the staff only worsened as the war continued and rangers were called into the military, leaving the park shorthanded.[71]

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[69] Evans, *Historic Resource Study*, 388-391.

[70] Superintendent's Narrative Report, 9 January 1942, 2-3, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file: 9, 1942, Olympic National Park Archives.

[71] Superintendent's Narrative Report, 9 April 1942, 3-4, 12 November 1942, 4, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file: 9, 1942, Olympic National Park Archives; 13 January 1943, 2, 11 February 1943, 1-3, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file: 10, 1943, Olympic National Park Archives.

Initially, AWS stations were established at existing structures. The first ones to be staffed were the fire lookouts at Hurricane Ridge, Deer Park, and Dodger Point. The list later expanded to include the chalets in Enchanted Valley and Low Divide as well as Elkhorn Guard Station. Since there were not enough existing structures to provide full coverage, the park constructed several new lookouts and associated access routes. For instance, in mid-September, park staff began to build a new trail to Pyramid Peak to facilitate transportation of supplies to the site. Joe Sherman did most of the construction at the site but did not complete the lookout until late in the fall, shortly after a temporary post, housed in a tent, was destroyed in a severe windstorm in early November. Sherman and his wife then operated the AWS station. By the end of 1942, there were thirteen such AWS stations operating within the park, including other new ones at Warkum Point, Indian Pass, and Geodetic Hill. Communications expanded in 1943 with the addition of a UHF radio system. The lookouts continued to note planes and send flashes until the AWS program was abruptly disbanded on June 1, 1944. The park then converted many of the outposts to fire lookouts for the remainder of the season.[72]

The life of a wartime lookout was a challenging one of isolation, cramped quarters, and continuous duties. Mary and Leath Johnson served initially as relief observers, working about two weeks at an AWS post to give the permanent staff a respite; they later worked on a more long-term basis at posts within the park. Mary recalled substituting for the legendary Herb and Lois Crisler who were stationed at Hurricane Ridge. Lois asked that Mary bring a permanent wave kit with her so that she could get a perm before returning to visit friends in town. Mary also remembered that the two people stationed at Elkhorn had such a bad case of cabin fever that they were

[72] Superintendent's Narrative Report, 12 October 1942, 3, 14 December 1942, 1-2, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file: 9, 1942, Olympic National Park Archives; 10 April 1943, 5-6, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file: 10, 1943, Olympic National Park; 12 June 1944, 4-5, 12 July 1944, 4, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file: 11, 1944, Olympic National Park Archives. Archives; Evans, *Historic Resource Study,* 391; Jack Nattinger, interviewed by Paul Gleeson, 27 September 2007, tape 2, side 1.

no longer speaking to each other and had divided the cabin with a chalk mark down the center of the floor.[73]

In addition to the AWS, the military operated a second defense system along the west coast. A few months after the United States entered World War II, the U.S. Coast Guard, under the command of the Navy in the 13th Naval District, established an extensive system of lookouts along the coast of Washington and Oregon. By late April 1942, the system included twenty-six lookout stations and another thirteen lifeboat stations staffed by both military personnel and civilian volunteers who watched for suspicious activity and regularly patrolled the remote coastal beaches using guard dogs.[74]

During the war, there were three centers of Coast Guard operations either within or near the boundaries of Olympic National Park. The primary base was the Ozette Lake Coast Guard Station which took over for the Army there in September 1942. Beach patrols covered the area from Shi Shi Beach to Cape Johnson, working from outposts located at Seafield, Cape Alava, Sand Point, Wink Trail, Yellow Banks, Township Trail, Allen Trail, Lone Tree Rock, and Cape Johnson. These were supplemented by three lookouts at Cape Alava, Eagle Point, and the mouth of Starbuck Creek. Farther south, the Coast Guard also operated Beach Patrol Stations at La Push and Kalaloch. As the perceived threat from invasion declined, beach patrols were reduced. All patrols at Lake Ozette were discontinued by the end of March 1944.[75]

Olympic National Park during the Postwar Years, 1945-1955

The end of World War II in August 1945 brought new challenges to Olympic National Park. There was a backlog of maintenance and construction projects, work that had been postponed when the wartime staff was stretched thin with the demands of servicing the AWS stations. Tourist

[73] Mary Johnson, transcript of a talk with Jack Nattinger et al., no date, transcript on file, Olympic National Park Archives.
[74] Evans, *Historic Resource Study*, 379.
[75] Ibid., 383-385.

visits began a steady rise while budgets remained stagnant. It was a dilemma shared by parks throughout the country.

Despite these constraints, Olympic National Park launched a major push during this period to improve accommodations for backcountry travelers. Park staff constructed fresh garbage pits and pit toilets in many locations, part of the routine maintenance often done by trail crews. Then in 1949, they began an ambitious program to build shelters. Park construction and maintenance crews completed five new shelters (two at Lake Angeles, two at Glacier Meadows, and one at Seven Lakes Basin) that year and left a sixth (Sol Duc Park) partially done. Nine more followed in 1951, making a total of fifteen in just three years. The latter group included two in the Elwha Valley, two at Heart Lake, and one each at Mary's Falls, Canyon Camp, Stony Point, Camp Wilder, and Seven Lakes Basin. In addition, crews restored three other shelters in the Elwha drainage. [76]

Having two shelters in one location was a new idea for the park. Some of the prewar shelters, like the one built at Anderson Pass, were considerably larger than the earlier 14 x 14 footprint. Such large shelters sacrificed some privacy in an effort to fit in larger numbers of hikers. After the war, the move to pairs of smaller shelters served to accommodate large numbers without compromising on privacy. The new arrangement proved popular with hikers.[77]

One of the key personnel involved in shelter construction during this period was Dan Landers, an experienced woodsman from Vashon Island. "Anything you needed," Jack Nattinger later remembered, such as "carpenter work, why you send Dan up there and he would do it." Landers was a temporary employee until the early 1950s when he was hired on a

[76] Superintendent's Narrative Report, 13 September 1945, 3, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file: 12, 1945, Olympic National Park Archives; 12 October 1949, 2, 10 November 1949, 3, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file: 16, 1949, Olympic National Park Archives; 14 June 1951, 3, 12 July 1951, 2, 13 August 1951, 2, 10 October 1951, 2, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file: 18, 1951, Olympic National Park Archives.

[77] Jack Nattinger and Ted Sullivan, interviewed by Paul Gleeson and Fred Walters, 27 September 2007, tape 1, side 2, transcript on file, Olympic National Park Archives.

permanent status. Nattinger also recalled that these shelters were all small, "something like the first USFS shelter" but with four bunks.[78]

Olympic National Park experimented – unsuccessfully – with metal roofs on shelters in the postwar years. Metal was considered a practical solution both for shedding snow and preventing vandalism; visitors frequently used shakes from shelters to start campfires. Crews hauled long pieces of metal to distant shelters for the roof upgrades. This innovation was a failure, however. Jack Nattinger recalled that the Upper Soleduck shelter had a metal roof that "leaked like a sieve." Park crews were replacing these metal roofs with shakes by 1958. They completed this work on the shelters at Elkhorn, Canyon Camp, Mary's Falls, and Lower Cameron that fall, and during the next winter, they split more than two thousand shakes to continue repairs in 1959.[79]

Olympic National Park and Mission 66, 1955-1966

The period of stagnant budgets for the National Park Service ended in the mid-1950s with the launch of an ambitious program to upgrade accommodations at parks nationwide. Named Mission 66, the effort was to culminate in 1966 on the 50th anniversary of the National Park Service. Fred J. Overly, who had replaced Preston Macy as superintendent at Olympic National Park in September 1951, used the Mission 66 program to further his vision of the park as a playground for visitors, moving away from the original emphasis on wilderness. Visitation to the park increased greatly during the 1950s, rising from just over 400,000 visitors in 1950 to nearly 1.2 million in 1958.[80]

While Overly's monthly narrative reports are strangely devoid of any mention of shelter construction, such work continued during his

[78] Nattinger and Sullivan, 27 September 2007, tape 1, side 2, transcript on file, Olympic National Park Archives; Jack Nattinger to Paul Gleeson, 29 September 2007, letter on file, Olympic National Park Archives.

[79] Nattinger and Sullivan, 27 September 2007, tape 1, side 2, transcript on file, Olympic National Park Archives; Jack Nattinger to Paul Gleeson, 29 September 2007, letter on file, Olympic National Park Archives; Superintendent's Narrative Report, 21 October 1958, 6, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file: 24, 1958, Olympic National Park Archives; March 1959, 7, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file: 25, 1959, Olympic National Park Archives.

[80] Rothman, *American Eden*, 345.

administration. Jack Nattinger recalled that Jack Broadbent, the first permanent field ranger in the Elwha District, wanted to orient new shelters toward a view, and he took responsibility for laying out the sites before Dan Landers erected the building. In a report in 1954, Overly recommended new trails, bridges, and shelters in the backcountry. Such work presented "problems in logistics and design," however, since "[n]ative materials must be used in shelters and pit toilets where practical." At that time, just one shelter was under construction at Graves Creek (Project B-187), for a cost of $909.69.[81]

Once Mission 66 got underway, construction funding increased for various projects within Olympic National Park. By February 1958, five new trailside shelters had been built since the fall of 1951; it is unclear whether or not these were actually completed before Mission 66 began. One month later, in March 1958, Overly laid out plans for the coming season. Park staff was preparing a project construction proposal to repair existing shelters using day labor, for a cost of $6,000. Of the seventy-five shelters then in the park, fifty-three dated from the Forest Service period. "Needed repairs consist of new roofs, straightening, replacing foundations, shakes, logs and bunks and constructing new privies and garbage pits," noted Overly. "No plans or additional supervision would be required." At the same time, the superintendent proposed Project B-195 to construct four new trailside shelters for a total of $6,000. This was part of the much larger project, included in the Master Plan, to build a total of thirty such shelters. These first four were to be built by day labor using standard plan NP-Oly-2191.[82]

Increasing use of the backcountry by the late 1950s evidently led the park to request a report on the situation. The Back Country Study Committee, chaired by Ray W. Murphy, completed a preliminary report by January 1959, which was printed one year later. Backcountry visits nearly doubled

[81] Nattinger and Sullivan, 27 September 2007, , tape 1, side 1, transcript on file, Olympic National Park Archives; Fred J. Overly, United States Civil Service Commission, Position Description, 3 December 1954, 12-14, on file, Fred J. Overly Papers, Accession 2214, box 2, file 5, University of Washington Libraries, Special Collection Division.

[82] Olympic National Park, Construction Projects Tabulation, September, 1951 to February 20, 1958, 3, on file, Fred J. Overly Papers, Accession 2214, box 2, file 12, University of Washington Libraries, Special Collection Division; Fred J. Overly to Regional Director, Region Four, 24 March 1958, 9, on file, Fred J. Overly Papers, Accession 2214, box 2, file 8, University of Washington Libraries, Special Collection Division.

from 1953 to 1959, rising from 27,657 to 49,061. The committee found that by the late 1950s, 90 percent of these visitors were hikers, with only 10 percent arriving on horseback. The huge increase in use had led to a degradation of the backcountry, with many unauthorized camps, toilets, and trash dumps. Chief Ranger Stanley McComas recognized that the park's protection of the backcountry had been "inadequate" up to that point, but he stressed that his staff had increased coverage and visitor contacts during the 1958 season. He noted that more money and staff would be needed to adequately address the situation.[83]

The report made a series of recommendations to address the deteriorating backcountry campsites. These included additional campsites with water, sanitation, and wood supply; more shelters, especially in heavily used areas; new patrol cabins and additional backcountry staff to increase protection; and an upgrade and expansion of the telephone system for added visitor safety. It also included specific suggestions to guide the park in locating and building additional shelters in the backcountry. The report stipulated that no new shelters should be constructed within five miles of a road since closer locations were vulnerable to vandalism. New shelters should be concentrated in areas of heavy use to help control damage at such sites. Shelters should be spaced an easy day's walk apart. They were meant to "be used solely as havens during times of inclement weather, not . . . as required facilities for each overnight stop." They did not need to be larger than the standard four-bunk size.[84]

Chief Ranger McComas generally agreed with the committee's recommendations. He believed that construction of patrol cabins was an important step because it would enable rangers to increase patrols. Trail maintenance crews would also be able to use such cabins, freeing up shelters for visitor use only. The park's Mission 66 plans called for just six such

[83] Back Country Study Committee (Ray W. Murphy, chairman), Olympic Back Country Study, January 1960, 1-4, on file, Accession OLYM-463, Olympic National Park Archives; Stanley McComas to Superintendent, 11 January 1959, 1, on file, Shelter Notebook, Paul Gleeson's office, Olympic National Park.

[84] Back Country Study Committee (Ray W. Murphy, chairman), Olympic Back Country Study, January 1960, 14-24, on file, Accession OLYM-463, Olympic National Park Archives.

patrol cabins, but the committee recommended a total of eight. Nonetheless, these were considered low priority for the Mission 66 program.[85]

By the late 1950s, the overworked park staff got seasonal assistance from the Student Conservation Program, later known as the Student Conservation Association (SCA). The nationwide program began in 1957 under Mission 66 as a way to supplement regular park staff as well as provide work experience for the student volunteers. At Olympic National Park, under the supervision of Jack Dolstad, two groups of boys put in three hundred person-days in 1959, much of it in the back country. Work there included construction of a shelter with four bunks, digging garbage pits, building toilets, clearing trails, and splitting one thousand shakes to reroof the Enchanted Valley Chalet.[86]

Shelter construction continued in Olympic National Park through 1971. Although Superintendent Overly had alluded to plans for thirty new shelters, far fewer were built. The SCA continued to build one or two shelters each year. These included two at Sand Point in 1960; one at Low Divide in 1961; one at Mosquito Creek in 1962; and one final one at Scott's Creek on the coast in August 1963. The park hired outside labor in 1963 to build eight more shelters: one each at Olympus, Elwha Basin, Mink Lake, and Nine Stream on the North Fork Skokomish, and two each at Elk Lake and the North Fork Quinault trail. Seven more that were planned for the 1964 season were never built.[87]

Passage of the Wilderness Act in 1964 essentially ended construction of new shelters in Olympic National Park. By 1966, Superintendent Bennett Gale recommended three roadless areas within the park as wilderness, including

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[85] Stanley McComas to Superintendent, 11 January 1959, on file, Shelter Notebook, Paul Gleeson's office, Olympic National Park.

[86] Back Country Study Committee (Ray W. Murphy, chairman), Olympic Back Country Study, January 1960, 8, on file, Accession OLYM-463, Olympic National Park Archives.

[87] Superintendent's Narrative Report, July 1960, 8, August 1960, 7, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file: 26, 1960, Olympic National Park Archives; August 1961, 9, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file: 27, 1961, Olympic National Park Archives; August 1962, 8, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file: 28, 1962, Olympic National Park Archives; June 1963, 8, July 1963, 8, August 1963, 6, 8, September 1963, 8, October 1963, 6, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file: 29, 1963, Olympic National Park Archives.

more than 770,000 acres in the backcountry. Nonetheless, both SCA and park crews continued to maintain and rebuild these shelters each season through the 1960s. In addition, the Youth Conservation Corps (YCC), another volunteer program, helped construct Toleak Point shelter in 1971. This was the last new shelter built in the park.[88]

After 1970 management of park shelters changed dramatically. Between 1970 and 1975, park staff burned down forty-five of approximately ninety shelters under the belief that the shelters created damage by focusing visitation and were not needed in potential wilderness. The review of the issue did not take into account that visitation was increasing greatly as a side effect of the baby-boom generation coming of age.

There was direction in the 1974 Olympic Wilderness EIS to remove some shelters and to retain other for emergency use. This policy was echoed in the 1976 general management plan. But when the 1976 backcountry management plan listed only twelve shelters to be retained, the public objected to this level of removal. There was the threat of lawsuits that the park was not adhering to the Wilderness EIS and to the park GMP. It also was clear that the park had no objective criteria for which shelters to retain and which ones to remove. After a number of public meetings the park produced a criteria statement for shelter management. Twenty-two shelters were selected to remain in the park. This list was reviewed yearly up through the mid-1980s.

In 1988 Congress designated 870,000 acres, amounting to 95 percent of Olympic National Park, as wilderness. After that, the park staff seemed to return to the earlier process of removing the shelters without reference to the either the retention criteria or to the list of shelters to retained. During this period, maintenance of the shelters also was reduced. As a result, three shelters collapsed in 1998. The repair strategy called for replacement shelters built off site according to specifications and then airlifted into place. This was done to reduce impacts to wilderness values. This raised concern with wilderness advocacy groups and resulted in a lawsuit enjoining the park from flying in the replacement structures. The judge denied the plaintiffs

[88] Historic Property Inventory Report for Toleak Point Shelter, recorded 18 December 2006.

request for $90,000 in attorney fees and then made the following observation:

> (T)his case brought into conflict the values of historic preservation and wilderness preservation, which was a matter of first impression and one that created difficult questions. The United States reasonably attempted to harmonize the competing interests and legal authorities. This task was not an easy one. The United States was substantially justified in its position and, consequently the Plaintiffs are not entitled to an award of attorney's fees.

In 2009, the park general management plan was approved. The plan addresses the issue of historic structures throughout the park and sets the following specific objectives:

1) The historic character of historic buildings and structures, including shelters and buildings related to USFS and NPS management of the park, recreational resorts and cabins, and homestead settlements, are managed in accordance with Section 5.3.5.4 of 2006 NPS Management Policies, Historic and Prehistoric Structures. Historic structure inventories and reports are prepared, and existing reports are amended as needed. Actions identified in historic structure reports are implemented and a record of treatment added to the reports.

2) Identified and evaluated historic structures are monitored, inspected and managed to enable the longterm preservation of a resource's historic features, qualities and materials.

The strategy called for management reports:

> Create design guidelines and/or historic structure/cultural landscape reports for all developed areas in the park to preserve the architectural and landscape-defining features. Include design review oversight to ensure the compatibility of new planning, design, and construction.

In terms of achieving these objectives within designated wilderness the strategy would be as follows:

> Comply with cultural resource protection and preservation policies and directives, and the wilderness minimum requirement concepts in

wilderness areas, for the maintenance of historic structures and cultural landscapes.

The park will comply with binding case law on balancing wilderness preservation and historic preservation.

This report is a historic structures report to implement part of the Olympic National Park 2008 GMP.

III
Introduction
To
Assessment, Evaluation and Recommendations

This Historic Structure Report was prepared as part of the implementation of the Olympic National Park General Management Plan (approved August 8, 2008 • See Appendix 1) and in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties.

This Historic Structure Report addresses forty-two structures. The Historic Context and Design Development have provided a general framework of understanding the historic forces and environment whereby these structures were conceived and created. Within the following sections of the report, the structures have been organized around three primary subjects associated with various aspects of the park's history: Homesteads and Recreation Structures, Forest Management and Fire Prevention, and World War II, with the Forest Management and Fire Prevention section divided further into four subdivisions.

At the beginning of each primary section or subsection, there is an opening overview and general discussion concerning more specific aspects of the construction of the buildings from a design and material aspect.

Prior to making decisions on Conservation Treatments for the structures, a series of basic "conservation goals" are presented to establish a basis from which to make recommendations. The basis of these goals is a general park cultural management program founded on two primary conservation principals. The first is to maintain and preserve at least one of each style of historic structures. The second is to maintain and preserve the structures within the context of their association as elements of a system of shelters, trails, and ranger stations like found along the Hoh River trail. It is equally important to recognize that this context of association applies to grouping of buildings such as found at the ranger stations. The stations were a collection of several buildings and an open area for stock, and this functional

relationship needs to be maintained and preserved in the same manner as individual structures. In certain instances, lost historic buildings could be restored where new functions are required for park administration purposes.

Following those conservation goal(s) a summary statement is provided on those significant elements and character defining qualities that must be included in the formation of a conservation plan and treatment policy.

Where pertinent to multiple structures, a discussion of universal conditions may be included to address commonly found issues.

Last, a separate report is presented on condition assessment and recommendations for each individual structure.

Such a format, when the report is taken as a whole, presents a degree of redundancy that must be recognized. Conversely though, it allows a better contextual and more cohesive discussion of the each primary section.

IV
Homesteads and Recreational Structures

Olympic National Park contains a small, but diverse, collection of historic backcountry buildings pertaining to early settlement and seasonal recreational use. These buildings span some thirty years at the beginning of the 20th century.

Homesteads:

The Grant Humes Ranch cabin and the Peter Roose homestead reflect a life style of self-sufficiency, but from different perspectives.

Grant Humes made a living by what the landscape gave him. He was a guide for hunters and fishermen. He forged trails and offered packing services to those wanting to experience the wilderness. His home site choice was deep into the mountains on a side hill bench overlooking an open meadow and the Elwha River. Grant Humes did not want to tame the wilderness, but to be a part of it.

In contrast, Peter Roose established his homestead near the coast on fairly level ground. He managed the landscape based in many ways on the Swedish traditions. The cultural landscape included a cleared farmstead, a pattern of building location based on husbandry of stock and crops, and a heritage of construction design. To understand the Peter Roose house, one has to understand its place in a controlled setting. He wanted to create his own environment within the wilderness.

Recreational Structures:

These structures, unlike the homesteads, were not envisioned for settlement, but for the experience of the wilderness on a seasonal basis. The creation of these buildings rested on the belief that spending time in the wilderness, removed from the comforts of civilization, would be healthy for one's spiritual and mental well-being.

Both the Botten and Remann cabins are small single room log structures that attempt to hide in the landscape and try to blend into the mountain environment. While Michael's Cabin was constructed more in an open clearing where stock could be managed, it was a more a place of refuge for the man they called "Cougar Mike" in a wilderness setting. In all three of these instances, the buildings represent individuals seeking a direct connection with nature and her uncivilized world.

The Enchanted Valley Chalet was a business venture constructed to accommodate visitors that sought to satisfy their desire for a wilderness experience. It needed to be remote as part of the wilderness experience was the journey away from civilization. The building had to be rustic to harmonize within the setting. The clients, though, paid for their opportunity to come into contact with Nature, and in exchange they expected some return in the form of catered meals, private rooms, and companionship. It was a shared experience of the wilderness for those who did not want to be alone.

Conservation Goals

These homestead and recreational structures provide a valuable perspective on Parkland history and development. They are a vestige of history beyond the park itself, giving insight and context for a better understanding of the Olympic Peninsula. Through the character of their settings and scale of construction we gain a greater appreciation for how the land was regarded and what it meant to the people who valued it.

These historic resources should to be addressed under a conservation policy of Preservation. Original material should be preserved and kept functional through a well-designed maintenance program. This program would include coordinated periodic inspections, essential annual maintenance task such as insuring good site drainage and roof cleaning, and where necessary restoration of deteriorated material and replacement in-kind of material and assemblies that have reach their service life. Such an investment will be a benefit to the Park and the resources under its care.

Elements of Significance and Character Defining Features:

Homesteads:

Both of these homestead structures characterize, though in different manners, the last settlement efforts within some of the most rugged frontier of the contiguous United States. The structures should be conserved for their historical association with this type of cultural encounter, but conservation goals need also to extend beyond the immediate buildings and consider the setting within the surrounding landscape. At the Humes cabin this would mean some management of the landscape to recapture and retain the view of the Elwha River and meadow below. It would assist the visitor in understanding the reason why Grant Humes' selected this site in which to live. For the Peter Roose homestead, much of the same conservation reasoning is needed to manage this farm scape. There was order and cultural patterns imposed on this landscape to express civilization in the wilderness. Conservation goals should include the continued maintenance of the open clearing, repair and rehabilitation of the fence around the house, and preservation of the pathsways from house to barn and other outbuildings. These will expand a visitor's understanding of this remarkable example of old world culture in a new setting. Both these historic homesteads are visitor interpretation sites associated with the history of the park.

Recreational Structures:

The conservation approach to the Botten and Remann cabins, and to a degree this is true of Michael's cabin, is much the opposite from the homesteads. Beyond keeping good drainage patterns immediately around the buildings and limbs off of roofs, there should be only be minimal landscape management to keep the vegetation from encroaching on the struccture. These buildings were meant to withdraw into the forested settings. The focus of conservation goals is keeping the structures in good condition. The buildings are open to visitors and maintenance personnel for shelter from inclement weather on an emergency basis and should continue to be managed in such a manner.

The Enchanted Valley Chalet is more challenging in that it is a larger structure designed for a communal experience in a very popular setting. It is understood that a seasonal ranger is stationed at the chalet and the building is a destination for many backcountry Park visitors. With such visitor usage and its value as an administrative resource, the chalet should have a high priority in a conservation program. With the potential for large groups visiting the chalet, management of the structure should include a policy of limited usage of the second floor for overnight accommodation (maximum of nine persons even when equipped with fire escape ladders) since there is only a single exit stairs. No overnight usage should be made of the upper most floor under any circumstances.

In terms of significant character defining elements, as discussed above the landscape site and the location of the buildings within the site are of vital importance. Keeping the open nature of the sites and the relationship of the structures is critical. For the most part, the structures have retained a high degree of integrity regarding design, materials, and function. Continued maintenance using material that matches the original construction is vital. Retaining the wood windows, shake roofs, milled board doors, wood flooring, and log frames/walls all contribute to preserving the history of the site. Refraining from additional buildings or additions to existing structures is important. If new functions are needed, or lost functions restored, they should first be evaluated in terms of either using existing space in the structures, or restoring the structure associated with the lost function. If a new building is needed, then very careful attention needs to be paid to location in the setting and to the historic buildings. In all cases of proposed work, the cultural resource staff and park historical architect must be consulted during the planning process.

IV.1
Humes Ranch Cabin

Figure No. 1: Humes Ranch Cabin, June 2006

Constructed in 1905, the Humes Ranch Cabin "…has been through two occupancies and two major restorations." [1] It began as Grant Humes's early subsistence home on the upper reaches of the Elwha River. Thirty-five years later the cabin became the residence of the wilderness advocates Herb and Lois Crisler. As with most new homeowners, they made "improvements" to the building, including removal of the ceiling and ceiling joists. A decade later, the cabin was acquired by the National Park Service . The cabin and surrounding ranch land was "cleaned up" and "restored" in the late 1950's by the Student Conservation Program. By 1968, the structure was found to be suffering from deterioration and a study recommended the ranch be rehabilitated as "…an interpretive exhibit of homestead life." [2] A major

component of the program was restoration of the ranch cabin in 1970. The work included replacement in part or total of 38 logs, or approximately 50% of the original building. The building was roofed, windows covered with wire cloth, and the doors locked. Thirty-five years later, in 2005, the building was again suffering from deteriorating conditions. A study was undertaken to assess and evaluate the existing conditions. Completed by Russ Dalton of Olympic National Park, the study was thorough and comprehensive. In lieu of repeating the work of the Dalton Report for this document, the assessment and evaluation comments below build upon, and in some cases expand, the Dalton report findings and recommendations. The complete Dalton Report can be found in Appendix No. 2 of this study.

Site:

Two critical site elements were noted in the Dalton Report in regards to the immediate area around the cabin. First was the essential need for better grade drainage around the cabin. The second was the original site context of the cabin. Sitting on the edge of a bench, the cabin looked over the south pastureland of the ranch and river below. Grant Humes had cut most of the vegetation away from the slope south of the cabin, allowing a sweeping view from the only window in the log portion of the cabin. This vegetation has re-grown over the years, contributing to a build-up of leaf litter on the roof, keeping the cabin damp and moist most of the year from shade, and, equally important, creating a false sense of landscape context for the building.

Recommendation:

The immediate improvement to the site grading around the cabin recommended in the Dalton Report is strongly endorsed. Site drainage is a critical element of a preservation program. In addition to soil removal around the cabin, consideration should be given to restoring the creek ditch and sloping grade to the ditch at the north and west sides.

Beyond the trimming of just a few limbs to reduce leaf litter and the saving of all the heirloom fruit tree stock, the vegetation in the ravine south of the cabin should be trimmed back to restore the original viewshed from the cabin. In addition to providing an historic context to a cabin that Grant Humes had signified as "Riverview," the open site would allow for better air movement, reducing the moist environment around the cabin.

Structure:

In 1994, an extensive floor frame was installed that cantilevers out and supports the log walls of the cabin. Even with this system, the soil build up on the north side of the cabin deteriorated the sill log causing settlement of the cabin structure. The Dalton report lists optional treatments for the floor and wall support system from making the floor independent of the walls to just replacing deteriorated logs and keeping the current floor frame.

Recommendation:

It would be far better to select the option for the log walls of the cabin to rest on their own stone pier foundation, keeping sill logs off the ground and allowing for air circulation under the structure. The floor frame can remain on its pier block supports, but be independent of the walls.

Log Walls:

The log walls of the main cabin utilize half dovetail notching at the corners. In the 1970 restoration work, nearly 50% of all the logs in the cabin were replaced. During this work, many log were "spliced" instead of being replaced in total. This technique is valid in certain conditions, but not all. Log cabins depend a degree on continuity of connections at the corners for stability. Of course, some discontinuity occurs at door and windows, but solid upper and lower wall logs are present to "tie" the corner.

With the current deterioration of the north sill log, the cabin is listing and torquing out of square. On the east wall, from the door head nearly to the peak, all the wall logs have been "spliced". These splices are now opening up due to the cabin settlement. A continuity of connection has been lost.

According to the Dalton report, the Crislers removed the ceiling joist and ceiling boards in the 1940's. Only the evidence of "notches" on the south wall remains. A board ceiling connected to sidewalls provides an important quality of lateral stiffness even to a log building.

Recommendation:

As part of any work on the cabin, it is recommended that in addition to the noted log work of the Dalton Report on the east wall, logs E-9, E-10, ad E-11 be replaced completely, providing a secure connection to the east ends of the north and south walls.

Though there is no surviving physical evidence for the size or character of the original log ceiling joists, we know the number and location. Assuming the boards were on the underside of the joist, any conjectural concerns about replacing the ceiling would focus on the character of the boards, i.e. size, texture, and finish (if any). Given that the Crislers were photographers, some evidence may exist to show the ceiling. If such evidence could be found, it is recommended that the ceiling be restored for increased structural integrity and a stronger sense of space/volume context of the original cabin.

Roof:

The findings of the Dalton Report show the need to replace the roof of both the cabin and kitchen addition. The roof was leaking badly during the 2006 assessment.

Recommendation:

There is strong photograph evidence showing the original four-course roof on the cabin and the addition, and restoration to this pattern is recommended.

Windows:

There was only one window in the main cabin, looking south over the pasture and river. While there is no physical evidence of the sash, evidence from the rough opening and from historic photographs could provide enough information for a sash replacement.

Recommendation:

Replacing a window in an unoccupied remote structure is always vulnerable to vandalism. The 1970 treatment of covering the opening with wire fabric is a good treatment in that it keeps out environmental litter but allows strong ventilation. In lieu, though, of just covering the rough opening, it would provide a better sense of the original structure if the sash was replicated and then wire fabric was installed instead of glass.

Door:

The Dalton report did not find any original doors. Presently, the rear cabin door has been terribly repaired with galvanized nails.

Recommendation:

Doors are obviously needed on the structure, and if new ones are required, then approximate replicas based on the other buildings constructed by Grant Humes would be reasonable.

Interior:

The current floor of the cabin is described as un-planed hand split cedar planks. The earliest NPS description from the report of 1969 just states one-inch planks. Again, some documentation may exist in the Crisler photographs to give a better description. The floor does match the work attributed to Grant Humes on the Botton Cabin.

Recommendation:

Until further evidence immerges, the current floor should be retained.

Porch(s):

There is clear documentation on the design and changes to the front porch of the cabin. The original porch was a simple shallow sloped shed roof with log supports. It was altered in the 1940's to a steeper slope hip roof. The hip design is suspected to be more one of trying to achieve a steeper slope to the roof than a stylistic decision. What should be noted is the original roof design gives a different scale and reflects the horizontal lines of the logs. The hip roof provides a mass to the front of the structure. The change to the hip roof significantly alters one's interpretation of the appearance of the original building.

Recommendation:

The front porch should be reconstructed to the original design based on historic photographic evidence.

Kitchen Addition:

The kitchen addition was a very early alteration to the cabin. The pole frame is supported on sill logs at the wall line while the extended porch has a separate support system. Replacing the sill logs of the main section is needed. The pole frame appears to be in good condition. Discussion of the replacement of the roof and repair of the purlins was addressed previously under the cabin roof. The four most pressing issues for the

preservation work are the repair of the back porch to original dimension, the restoration of interior plank floor, the replacement of the exterior wall sheathing with in-kind original full-length planks, and how to treat the window openings.

Recommendation:

The replacement of the sill logs for the kitchen addition is a crucial element of its preservation.

The extension of the porch to original dimensions is well documented in historic photographs and should be completed.

The exterior wall sheathing is an important visual element of the original building appearance and should be restored. The Dalton Report recommends not installing the window casings and it is assumed this is based on historic documentations. Casing in this context is referring to the outside trim and not the actual frame around the sash.

Replacing the floor in the kitchen would provide unity to the rear porch and the cabin.

As a protection from accumulation of leaf litter/duff inside the building, it is preferred the window opening be screen. As with the cabin, this allows for ventilation. As with the cabin, it would be preferred if a replica sash were installed with the screen to provide more definition to the original cabin.

Epilogue:

In the fall of 2008, conservation measures were undertaken by NPS staff to stabilize and preserve the Humes Cabin as part of the stewardship of this structure.

The work included lifting the structure to level and cutting the cantilevered floor joists that had been installed to support the outer north and south log walls. This left the floor independent of the walls. Then all sill logs and the 2nd log of the south walls were replaced with new cedar logs. The sill logs are supported on a new river stone foundation. The roof was removed and a continuous log installed on the east gable to correct the lack connection in the wall. Most of the east gable logs were also replaced. Both plate logs on the north and south walls were replaced. All the roof purlins were replaced due to decay. The purlins were installed utilizing original notches in the west gable. The front porch was reconstructed in the original three post design with cedar sill, pole joists, and split cedar deck.

Extensive restoration was completed on the kitchen addition. New sills were installed. The wall poles adjacent to the cabin were replaced. The gable wall was retained, but all the plates, rafters, purlins and collar ties replaced. All of the framing of the back porch was replaced. The non-original window on the north was omitted and the window on the south wall reconstructed to original size. The back porch was reconstructed to original width with stairs on the south side. The kitchen floor was restored with 6" sleepers on rock piers and covered with 1 1/4" random width cedar boards.

The grade around the building was excavated and sloped away from the building for positive drainage. Vegetation around the cabin was removed to enhance air circulation. A portion of the wagon road to the south meadow was opened up, though, not full width. The bridge over the ravine was not reconstructed. Instead a 3-foot wide puncheon bridge was provide for pedestrian traffic.

The focus of the work was to restore the cabin and surrounding landscape as much as possible to the Humes brothers era of c. 1910-1912. Cedar was used for longevity and site work to promote long-term positive drainage.

[1] Historic Structure Report – Building #699, Humes Ranch Cabin, Russ Dalton, NPS, May 30, 2005. p. 10.

[2] Ibid., p. 10.

IV.2
Peter A. Roose Homestead

Figure No. 1: Roose Prairie Homestead

Located roughly a mile west of Ozette Lake in the far western reaches of Olympic National Park, the Peter A. Roose Homestead is a site significant to the secondary generation of Scandinavian settlers of this region. Arriving in the early years of the 20th C, Peter Roose established a small subsistence farm just inland from the Pacific shore. Apparently a quiet, but resourceful man, Mr. Roose lived at the farm for around 40 years. He cleared sites for the homestead and pasture land. He constructed a number of structures, of which four remain in various states of repair.

The buildings though are only one element of the larger cultural landscape of the Roose Homestead. Once on his small property, additional qualities of

the landscape expand the character of the site beyond the structures. One sees patterns of spatial organization and the extent of land uses and activities. Within these patterns are the relationships of buildings to circulation arrangements, vegetation, boundaries, and the natural environments.

This discussion focuses on the buildings extant at the site. Excellent studies though have been produced on the cultural legacy embodied in the site and the larger context of the cultural landscape. Dr. Brian B. Magnusson's paper on *Observations on the Material Culture of the Scandinavian Immigrant Settlement at Lake Ozette and Royal (1880-1910)* provides an understanding of the cultural influences at the site stemming from Scandinavian traditions.[1] In 1989, the Department of Landscape Architecture at the University of Oregon conducted studies of historic landscapes, including Roose Prairie Homestead.[2]

At present, the buildings on the Roose Prairie Homestead consist of the house, well, and barn and root cellar.

House

Figure No. 2: House, Roose Homestead

The Roose Homestead House is a remarkable vernacular structure. It is a testament to Peter Roose as a craftsman and the independent subsistence lifestyle of one of the last homestead settlers.

The building is exactly twice as long as it is wide. It consists of two rooms, the parlor and kitchen. The parlor is an exact square, while the kitchen is slightly smaller. As the formal room, the parlor is wallpapered. The kitchen is exposed natural wood. The complete house construction appears to be fabricated entirely from clear cedar, including the framing. The principle fenestration is on the east wall for morning light. Only one small window and the entry door appear on other weather sides of the north and west. The building has an exterior sheathing of tapered lap siding with only a 3" exposure. At the corners, the siding does not have trim, but rather a simple square corner bead. The eaves of the shake roof are extended for

protection. The structure is raised on foundation piers for ventilation. The building is well constructed and in an overall good condition.

Site:

The site around the house is open with no decorative landscape or trees. It is a relatively flat site with only a shallow slope from southwest to northeast.

Recommendation:

The vegetation around the house should be kept cut down and positive drainage grade maintained away from the base of the building.

Structure:

The structure consists of primary end beam and secondary transverse beams bearing on creosote wood piers. According to NPS staff at Ozette Lake ranger station, the cabin was lifted and the piers installed in 1970.

The walls are composed of 4 x 4 primary studs at corners and around doors and windows. Intermediate flat 2 x 4 infill studs are used between the primary studs. There is a 1 x sub-sheathing.

The rafters are 2 x 4 at roughly 2 feet o.c. Collar ties are 4 x 4 members, mortised around the rafters 10" above the plate. The ceiling is at the collar tie elevation, creating a hipped interior wall.

At the north entry door, a small set of stairs must have existed for access. These stairs are no longer present, allowing exposure of some of the sill and wall framing to be exposed to the elements.

There is a small area of deterioration in the longitudinal sill beam at the southeast corner, but it appears stable and sound enough for continued use.

Recommendation:

The structure is generally in good condition. Creosote piers will eventually deteriorate though, and periodic inspections should note their condition. Eventually more permanent piers will be needed in the future.

To protect the exposed framing at the entry door, either the stairs should be reconstructed or a non-historic infill panel should be installed. At present, there is no photographic evidence of the stairs. Until more evidence is available or there is some seasonal on-site management of the site (when some form of access stairs will be needed), it would be better to install a weather panel assembly at the stair location to protect the sill and framing members from the weather.

Siding and Trim:

The walls are sheathed on the exterior with a narrow tapered lap siding. The siding is only 4 1/2' long, tapering from 3/4" to 1/4". It is lapped one inch, allowing an exposure of 3". Most of the siding is in serviceable condition. There is an area of siding missing at the southwest corner. At the base of the siding is a water table board. The board needs to be re-secured in selected locations and a broken section on the west side replaced. A small section is missing at the northeast corner. Below the water table board are two courses of foundation skirting boards. These boards are missing on the south, west, and north elevations.

Trim around the windows is 1" x stock and in good condition. The corner trim is square stock with the siding butting into it. There is a small section of the corner trim missing on the northwest corner.

There is evidence that the house was painted on the exterior at one point in time with the main portion white and a minor element of red on the doorjambs.

Recommendation:

To protect the wall framing, the missing siding, water table board, and skirting should be restored.

Some consideration should be given to repainting the house for both material preservation and original appearance. In his report, Dr. Magnusson states there were traditional painting schemes associated with Swedish settlements and these are reflected in the Roose house. [3] The body of the structure should be painted white and all the trim with red, such as the doorjamb, painted red. Some addition research on traditional painting schemes may be required to identify the correct color for trim elements that have completely lost all paint evidence. If no information can determine original color for some trim elements, then paint them white as a preservation measure.

Roof:

The roof is composed of five courses of cedar shakes, double laid, 32" long with 24" to the weather. They appear relatively new. They are laid over spaced sheathing in the attic and solid sheathing at the eaves and gables. There is a small area of deterioration in the roof sheathing at the southeast corner.

The attic shows no sign of leakage and is very dry. The shakes were installed with over long nails, resulting in nail points exposed in the sheathing.

Rafter tail trim and molding is missing along the eaves of the roof. They should match the trim and molding of the east gable.

Recommendation:

The roof appears to be watertight and in good condition. The eave trim should be replaced. In the future, shake nail sizing should not allow for sheathing penetration.

Windows:

There are four windows in the Roose House, two fixed multi-paned on the east elevation, one 1 over 1 double hung on the south elevation, and a single lite fixed window on the west elevation.

The frames of the east windows appear sound but the glazing is failing. The frame of the double hung is weathered and needs partial sash replacement or repair, and then reglazed.

Recommendation:

Maintenance attention to the windows should include reglazing, sash repair and painting.

Door:

There is only the single, solid entry door on the exterior. The door appears in sound and serviceable condition.

Recommendation:

The door should be included in any historic painting scheme.

Interior:

The interior is composed of two rooms, the parlor, or "fine room", and the kitchen, where domestic activities took place.

In the parlor a flower patterned wallpaper is used for the walls and a plain wallpaper for the ceiling. The wallpaper is stained in various locations from roof leaks. Furnishings are present, but in an abandon form. A wood stove with associated chimney piping and a modern stepladder are stored in the parlor.

The kitchen is also filled with scattered items of food cans, worn clothing, and various domestic materials in an abandon manner. The interior is a natural wood surface, functional but not decorative.

There are no records in the archives associated with an historic inventory of the contents of the building. It is difficult to judge what items were associated with the Roose occupancy period.

Recommendation:

Treatment options for the interior should be based on future anticipated function. Options can range from preservation in the current state, restoration for interpretation, or even potential seasonal occupancy. Until such a decision is made, the contents should not be disturbed. If some alteration or improvements are considered, then a basic object inventory should be conducted.

In terms of preservation, keeping a sound building envelope will insure long term care of the interior for the present future.

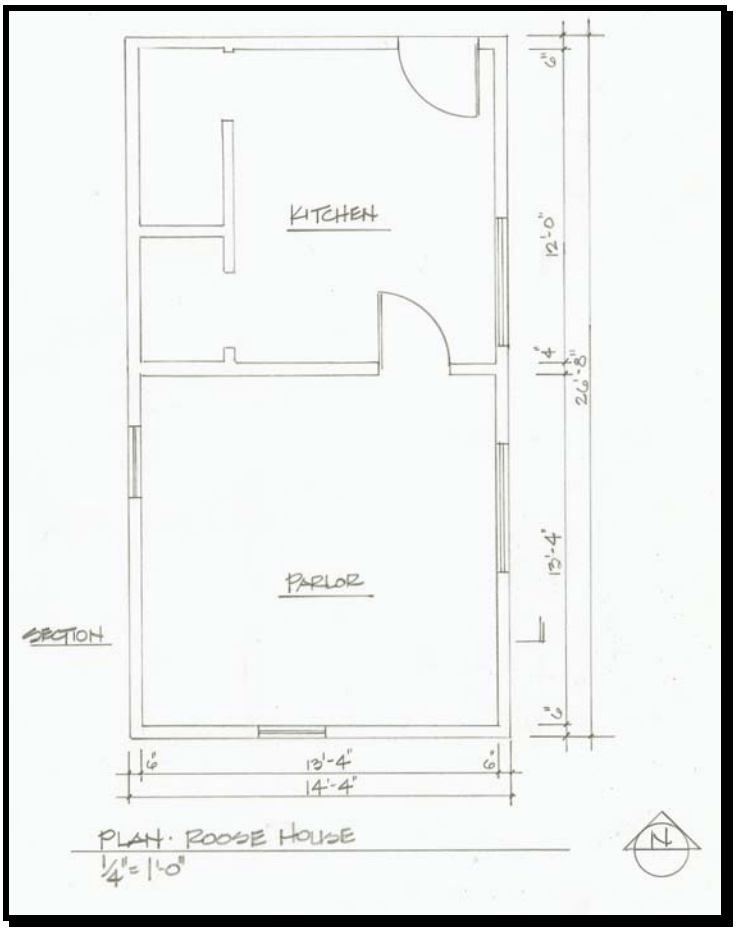


Figure No. 3: House Plan, Roose Homestead

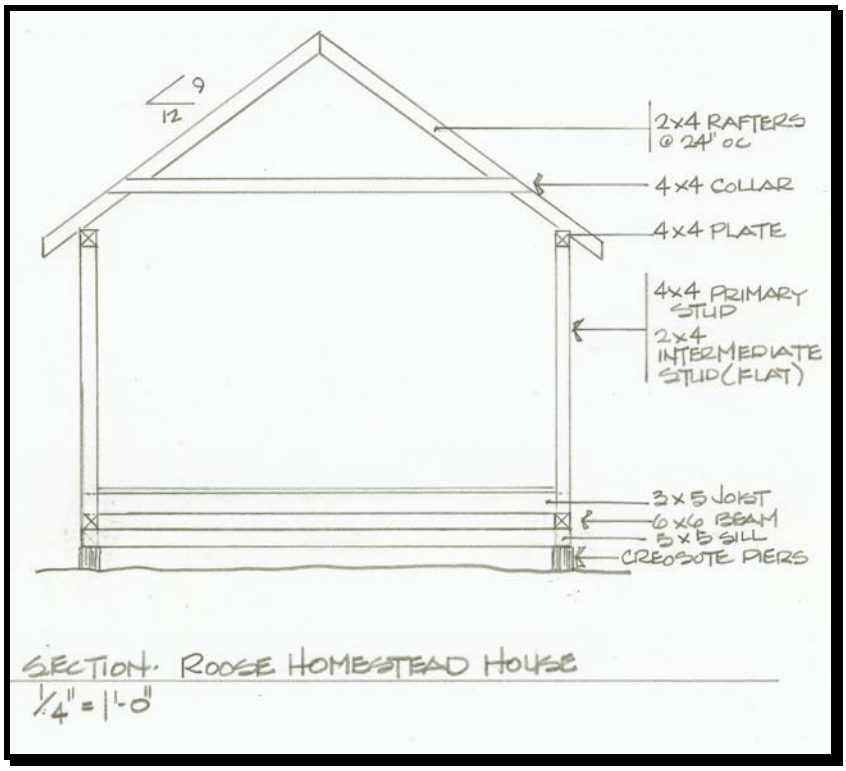


Figure No. 4: House Section, Roose Homestead

Well

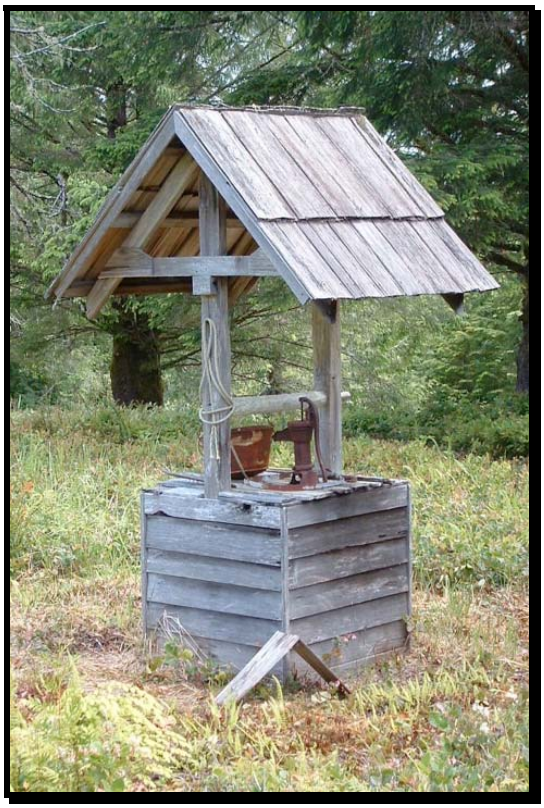


Figure No. 5:Well, Roose Homestead

The Roose Homestead well is an iconic element of the sustenance lifestyle and adds greatly to the character of the site. It is not listed on the National Register Nomination as an element of the site but is included on the list of Classified Structures for the Park. It is included here as a structure that should be preserved as part of the cultural landscape.

The Well Structure:

This small wood frame structure is in a weathered but serviceable condition from the level of grade above. It covers a small round well hole where water level is only two feet below the ground surface. The base of the structure below ground is seriously deteriorated and the structure can easily be "rocked" back and forth. It is an easy candidate for simply being pushed over.

Recommendation:

The superstructure of the well house should be preserved, but the wood foundation casing around the top of the well needs to be replaced. Consideration should be given to "planking over" the well at grade level just as a precautionary safety measure.

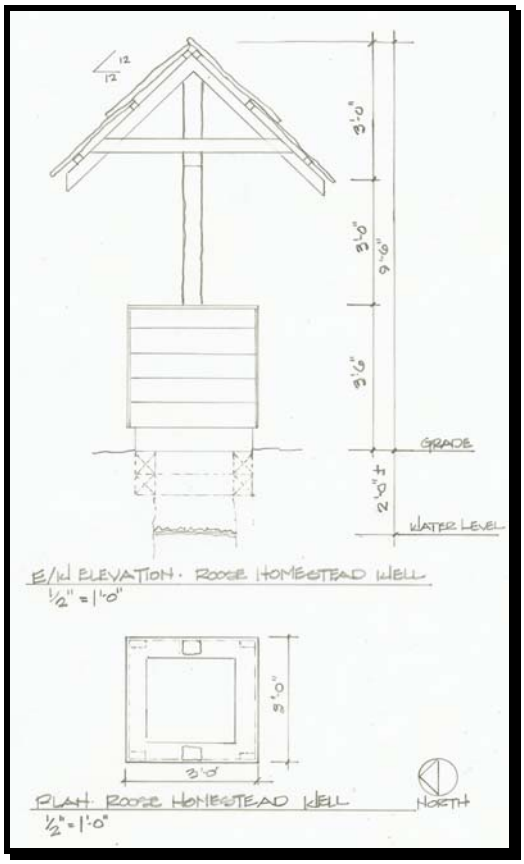


Figure No. 6: Well, Roose Homestead

Barn

Figure No. 7:Barn, Roose Homestead

The Roose Homestead Barn was completely reconstructed in 2001 to match the original structure. All the building material is new, including new concrete pier blocks, sill beam, frame, siding and roof. The building is in very good condition and will just need periodic maintenance inspections from possible storm damage.

Figure No. 8: Interior corner of Roose Homestead Barn showing sill beam and base of frame.

Figure No. 9: Interior corner of Roose Homestead Barn showing corner post, plate and rafters.

Root Cellar

Figure No. 10: Root Cellar, Roose Homestead

Located west of the house at the edge of the clearing, the grade begins a gradual slope downward into thick vegetation. Aligned normal to the slope is a small structure referred to as the "root cellar" or "root house".

The structure has a lower level off of grade from the down slope wall and a second level just three feet below the wall plate line. The west elevation has a door opening and only a partial lower wall section of horizontal boards. On the other elevations, there is a lower band of split cedar plank that skirt the walls at roughly three feet above grade. Then the exterior walls changes to a tapered lap siding with a "water table" board at the base of the siding. The siding is only 5' – 6" in height on the eave walls (some siding is missing on the east wall). The siding and water table terminate at the west wall in uneven lengths, extending out beyond the wall line.

There is something troubling about this structure. It does not have the characteristics of a roof cellar built into the grade where the temperature is tempered by the ground. Peter Roose was acknowledged as an accomplished craftsman, and the work on the house attests to his talents. This structure does have lap siding similar to the house and a very well executed water table at the lower termination of the siding.

Figure No. 11:Watertable, Root Cellar, Roose Homestead

The workmanship of the building below this line is incongruous with what Peter Roose exercised on the house. Then there is the uneven termination of the siding at the west wall, suggesting at one time it extended further. It strongly appears this structure was altered after Roose' death by either having a portion of a building moved to the site, or an existing structure lifted. Without further historical research, it is difficult to understand how this building evolved.+.

Site:

The site around the building has grown and elevated above the main floor level, allowing moisture to penetrate into the floor and sub-structure of the support frame.

Recommendation:

The grade around the building needs to be changed to control roof runoff and environmental moisture away from the base of the building.

Structure:

There is serious deterioration in the floor and structure at the base of all walls. At least one wall is beginning to list. If left unattended, the building will continue to have differential distress and fail.

Recommendation:

Treatment options for stabilizing the structure are 1) install temporary bracing, but acknowledge some deterioration would continue, 2) install semi-permanent shoring and hold the building in situ, or 3) to permanently re-build the deteriorated lower portion of all the walls. Until more evidence can be developed on the provenance of the building's history, semi-permanent shoring is the recommendation.

Roof:

The roof structure and shake roof appear to be in good condition.

Recommendation:

Monitor for condition.

Interior:

The interior of the building is strewn with discarded metal, paper and cardboard. Much, if not all, will need to be removed for any shoring work.

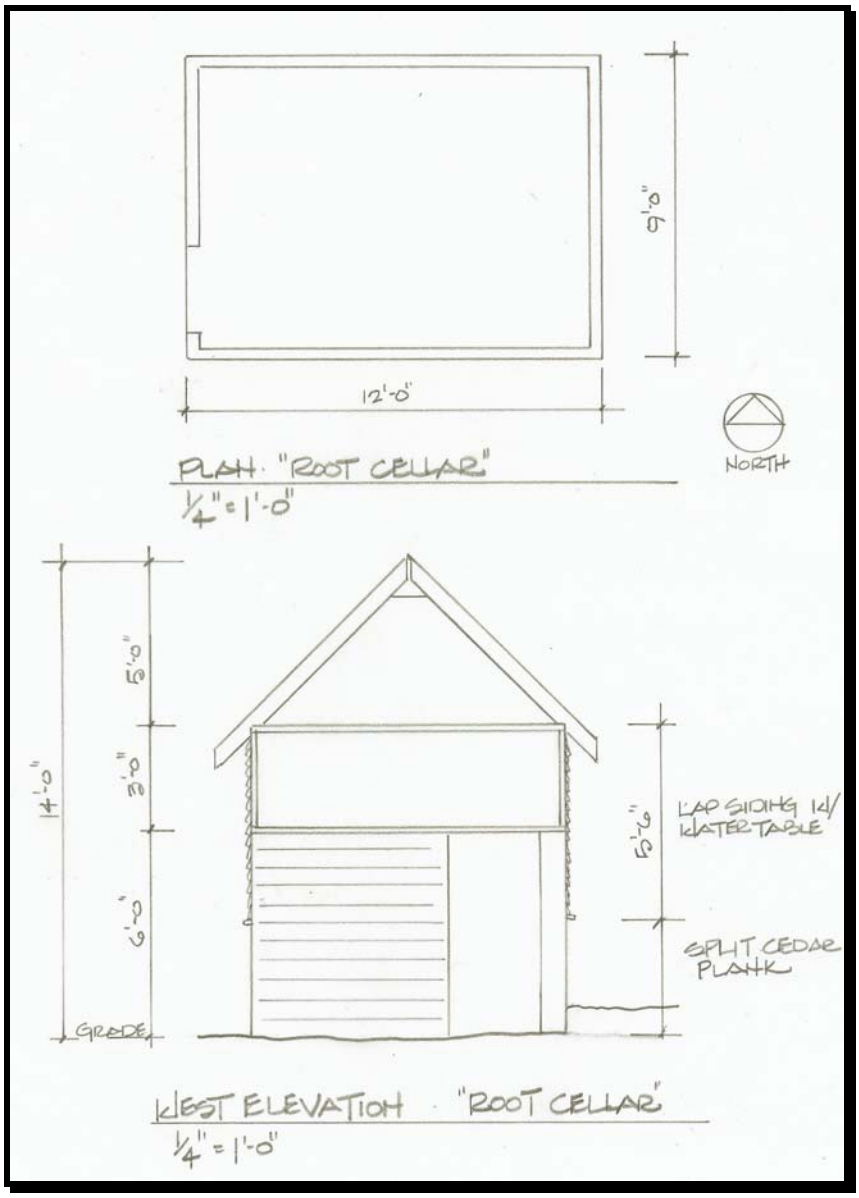


Figure No. 12: Root Cellar, Roose Homestead

Fence

Figure No. 13: Fence, Roose Homestead

Around the perimeter of the Roose Homestead are remnants of a fence. These sections of wood fence have a delicate and refined character. The fence is more than a boundary for stock. It is a statement of domestication and order within the wilderness. A site condition assessment drawing completed by NPS in 1999 illustrated an extensive series of fencing throughout the homestead.[4] By 2009 most of the fencing had been lost to undergrowth and decay. The fence design and system defined the homestead and adds greatly to the character of the site. It is included here as a structure that should be preserved as part of the cultural landscape.

Recommendation:

Building on the work done in 1999, the NPS should conduct a cultural landscape inventory to verify the fencing system and its defining qualities in understanding the homestead.

The Fence Structure:

The fence consists of 4" x 8" primary posts. In the presently existing portion of the fence the posts are roughly 11' x 0" on center. The 1999 assessment documents this condition varied depending on where the fence was located. Two 2 1/4" x 3" horizontal rails span between posts. Attached to the rails are 1" X 1" vertical pickets of alternating height. The fence was painted red, the same color as the trim on the house. The fence is in poor condition with deteriorating posts.

Recommendation:

The fence should be preserved. New posts will be need, but many of the original pickets can be reused. While all the site fencing need not be restored, a selected section of fence should be preserved/reconstructed.

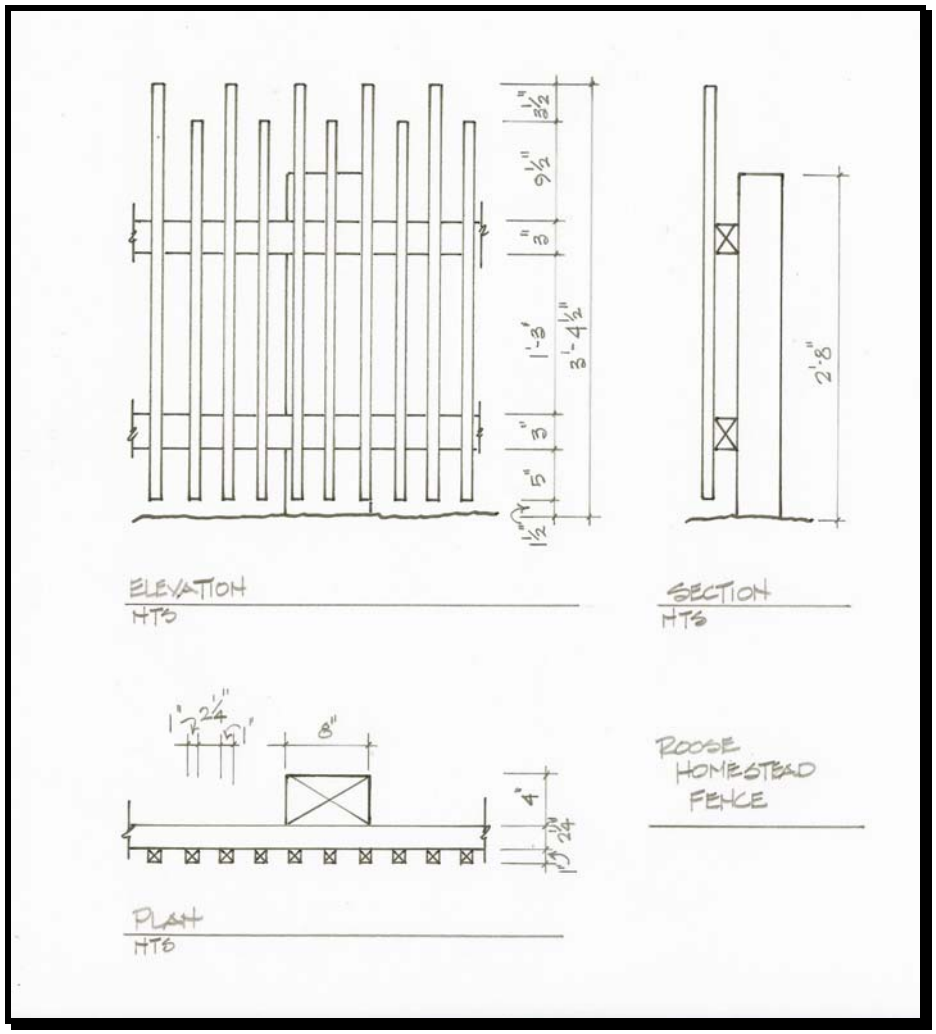


Figure No. 14: Fence, Roose Homestead

[1] Magnusson, Brian B. Ph. D., Observations on the Material Culture of the Scandinavian Immigrant Settlement at Lake Ozette and Royal (1880-1910), December 15, 2000, archives of Olympic National Park.

[2] Roose's Prairie Homestead and Kestner-Higley Homestead: a Study of two Historic Homesteads, conducted for the Pacific Northwest Regional Office, National Park Service and Olympic National Park, Department of Landscape Architecture, University of Oregon, December, 1989.

[3] Op.cit., Magnusson, page 36.

[4] Nels Roose Homestead, 1999 Site Condition, conducted by Keith Garnett, Portland, Oregon; on file at the archives of Olympic National Park.

IV.3
Remann's Cabin
(Elk Lick Lodge)

Figure No. 1: Judge Frederick Remann's Cabin

This cabin was constructed in 1926 by Grant Humes for Judge Frederick Remann as a seasonal recreational structure. Judge Remann was an ardent trout fisherman. The date of construction is the same year the road was completed to the Glines Canyon dam site. Due to the threat of flooding, the cabin was dismantled and moved to the current site in 1939. Judge Remann continued to use the cabin seasonally until his death in 1949.

The cabin is constructed of round logs with simple lap notching at the corners. It is a small one room structure measuring 14' x 16' with a five foot roof extension over a former front porch. The gables ends are log pole framed and covered with cedar shakes. Pole rafters and end frames support

a series of purlins that act as the nailers for the shakes. The rafters are tied at the wall plate level by log ceiling joists. The complete roof framing is exposed on the interior. There is a wood floor supported by log joists bearing on the side sill logs.

In general, the cabin is in good condition with the notable exception of the log sills.

Site:

This structure sits amongst a mature stand of hemlock and fir trees. Even on a sunny day, little light reaches the forest floor, reducing dry conditions. Around the cabin, the site is deep in moist needle duff, extending in places completely over the sill logs. The cabin sits in a slight depression on the knoll overlooking the river. There does not appear to be any real positive drainage pattern for the present, though just a few feet from the front of the cabin the knoll drops off towards the river.

Recommendation:

A positive drainage pattern is needed around the building. This will required substantial removal of ground duff and the creation of drainage swales to the edge of the knoll. It will be a challenge at this site to keep the site drainage clear.

Structure:

Round logs of roughly 8" to 9" in diameter form the walls to the plate line. The logs have simple rectangular tenon laps at the corners. Unless spiked or drift pinned at the corners, there is no connection other than the force of gravity.

The portions of the log walls at or below grade are in poor condition. At least the sill log and the course above are seriously deteriorated. This

deterioration has caused settlement in the southwest corner, distorting the plane of the wall and causing logs to begin to slide out of the notching. In addition, there are serious signs of powder post beetle activity in the logs.

Figure No. 2: Corner notching, Judge Frederick Remann's Cabin

The floor structure is composed of hewed log joists, notched into the sill logs and then decked with 1 x 6 full dimension boards. The joists are rotted at the sills and there are missing/rotted deck boards.

Log columns under the extended plate logs originally supported the present cantilevered roof section. Most likely there was a porch deck also.

Recommendation:

The cabin will need to be raised and at least six to eight new sill and lower wall logs replaced. In this process the sill logs need to be supported by new natural stone piers that keep the lowest logs at least 8" off the grade.

Existing sound floorboards can be salvage, with replacement of all the rest of the floor, along with complete replacement of the log joists.

At a minimum, log columns should be installed to support the front roof overhang. It would be preferable if photograph evidence exists to rehabilitate the front deck too, but it is not necessary to stabilize the building.

Figure No. 3: Ridge log, gable framing, and rafters.

Roof:

The roof frame of central ridge log, log pole rafters, and pole purlins, along with the gable pole frames are in very good condition. The 34" shakes appear to be relatively new and are in good condition. The location of the cabin creates heavy accumulation of duff on the roof.

Recommendation:

During periodic monitoring for condition, the roof should be cleaned of annual accumulation of needles and duff.

Windows:

There were originally three windows in the cabin, a single six lite fixed sash on the north and east elevation, and a double sash slider window on the west elevation. Currently, the north wall window is completely missing. The east wall window is present, but has been installed backwards. Only one of the sash remains on the west wall. All the windows have milled lumber frames.

Recommendation:

Depending on management objectives, either the open windows or window frames need to be covered with screen cloth to allow for ventilation but reduce an incidence of animal or insect entry, or the sash should be repaired and reglazed if seasonal occupancy is planned.

Door:

The front door is composed of two 1 x 18 rough sawn boards and 1"x cross buck braces. The door is in good condition.

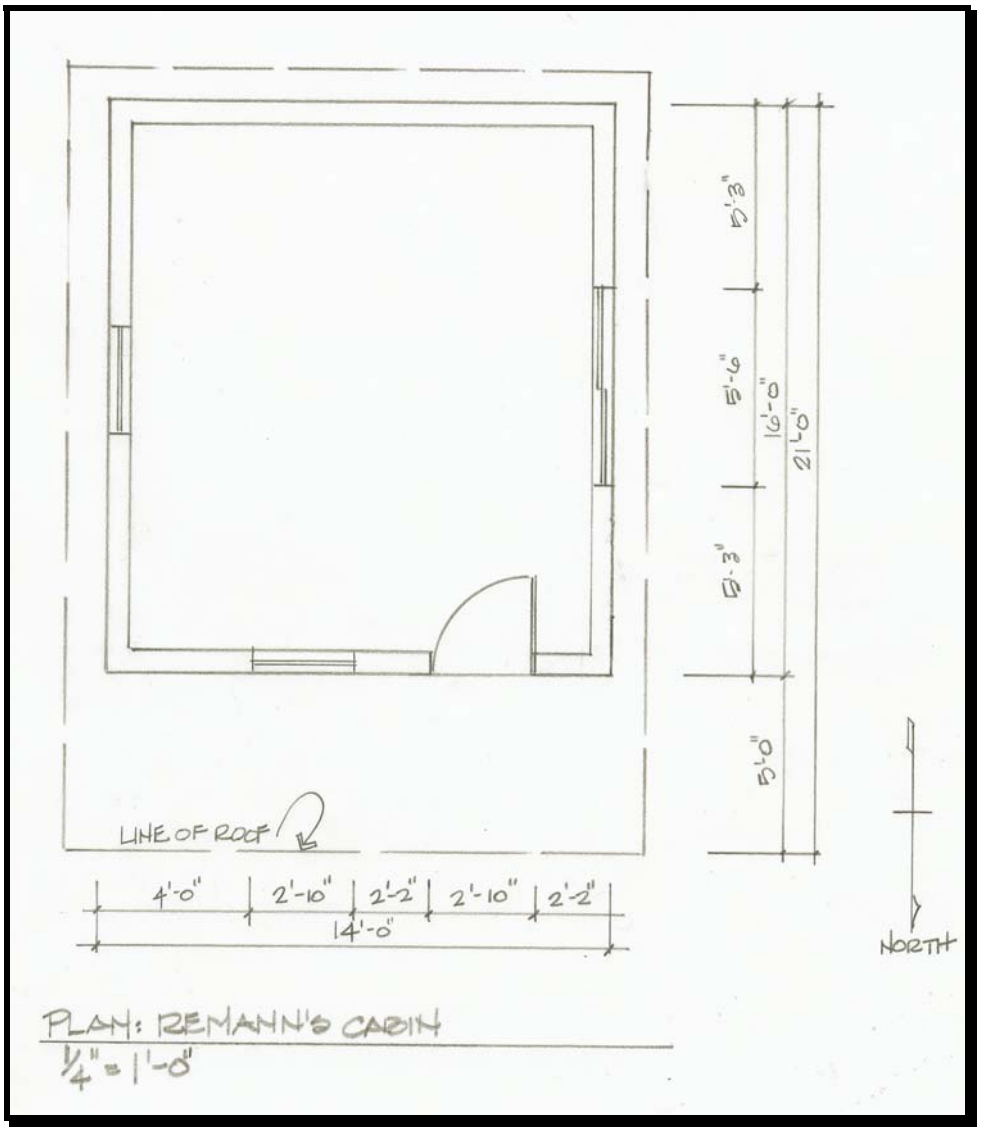


Figure No. 4: Plan, Remann's Cabin

IV.4
Botten Cabin
(Wilder Patrol Cabin)

Figure No. 1: Botten Cabin

Two years after constructing the Remann's cabin, Grant Humes was commissioned to build another seasonal recreational cabin. This time it was for civil engineer Henry. H. Botten of Seattle. The Wilder Cabin as it was first known, was located 8 miles beyond Remann's cabin further up the Elwha River, or roughly 21 miles from the current trailhead at Whiskey Bend.

The cabin is a near replica of the Remann's cabin. The Botten Cabin is 14' in width, same as Remann's, and 18' in depth, or just 2 feet long than Remann's. It is constructed using log for the side wall with simple lap notching at the corners. There is a single front door and two double sash 4 x 4 casement windows. The roof is composed of pole gable frame, pole rafters, and a central ridge log. The most noticeable different is the use of

split cedar planking for the floor, though this is similar to Humes own cabin. The cabin was assessed for condition in1998 and 2006.

Site:

The cabin sits in a deep canopy of mature trees and undergrowth next to Leitha Creek with view overlooking the Elwha River. The leveled site was created on a shallow side slope. There is little drainage away from the structure, especially on the uphill side. Combined with accumulated duff, the lack of drainage has led to severe deterioration in lower portions of the walls.

Recommendation:

As part of the repair to the sill logs, it will be important to create an effective drainage pattern on all sides of the cabin.

Structure:

The round log walls have significant areas of deterioration. Three primary sill logs run lengthwise under the long sidewalls and down the center of the building. All these logs are deteriorated beyond repair. At the northeast corner, the severity of the deterioration is causing the structure to settle, which in turn is twisting the building, resulting in the wall displacement at the northwest corner.

The floor joists were not accessible for assessment, but it may be presumed that the severity of deterioration in the sill logs has led to some deterioration in the floor joists logs.

It appears also that an open joint in the courses of the roof shakes at the southwest corner has led to moisture penetrating the upper courses of the wall logs. This has resulted in severe deterioration of the notches and, most likely, deep along the full log. This probably resulted in the twisting of the structure moving the roof framing and splitting roof shakes.

Recommendation:

It will entail substantial repair work to stabilize the cabin. The cabin needs to be lifted and have new sill logs replaced. The logs range in size from 13" to 19" in diameter. They should be placed on stone piers with at least an 8" elevation from grade. At the same time, in leveling the building, the northwest corner will need to be rotated back to plumb and the notching realigned. Some adjustment will probably be required to square the doorframe. The degree of repair needed to the sill logs is not known, but if it occurs only at the end notches then a new introduced ledger board on the new sill log may be the optimal solution.

Figure No. 2: Right: Rotational twist in NW corner due to deterioration of sill logs; Left: Deterioration of joints in the upper wall courses at SW corner.

The repairs to the log deterioration at the southwest corner occur in the upper logs of the walls. There are only two complete logs across this

elevation due to the door and window openings. These logs therefore are the "tie" between the front corners and need to be replaced either completely, or if a partial log replacement is done, the joint between new and old section of logs must be a secure tension joint like a notched and pinned scarf joint. It would probably just be easier to replace the complete log.

Roof:

It was noted in the 1998 assessment that the 34" roof shakes appeared in good condition with no signs of leakage. By 2006, deterioration was observed at the end of the shakes along the eave edge. Given the movement in the building, the buildup of duff on the shakes, and the current underside staining of the shakes at the eaves, the shakes are probably reaching their point of serviceability.

Recommendation:

Since there will be substantial lifting and realignment in the process of log replacement, all the nailed joints of the roof frame should be re-secured. This will require removal of both gable end shakes and roof shakes. Therefore, as part of the overall strategy of a repair project, the replacement of the roof shakes with new should be included in the program.

Windows:

The two windows in the cabin appear in good condition. Weathering though has most likely caused some glazing failure and the twisting of the building may have resulted in some misalignment of window stops.

Recommendation:

The windows should be checked for alignment and tightness for weather protection and re-glazed as part of a maintenance program.

Door:

The settlement of the cabin has misaligned the door frame, though the door appears to be in good condition.

Recommendation:

Following all the log replacement and work on the log walls, re-install the door in a true and square manner.

Interior:

The interior is exposed log walls, an open roof frame with partial storage loft of split cedar planks, and a split cedar plank floor. The floor may have to be removed for sill and floor joist work.

Recommendation:

If possible, leave the floor in place during log work, or remove and salvage just needed portions as required.

Porch:

The cabin has a small, independently supported porch deck just outside the entry door. It is supported by round wood blocks and a separate horizontal log, and decked with two layers of split cedar planks. It is in poor condition and should be replaced.

Recommendation:

Given the attention to craftsmanship by Grant Humes, the porch seems incongruous with the rest of the cabin. If there are any historic photographs of the Botten Cabin that show an earlier version of a porch, then consideration should be given to restoring the original design. Without such evidence, then the current porch can be replaced in-kind.

IV.5
Michael Cabin

Figure No. 1: The Michael Cabin, April 2006.

According to the National Register Nomination, the Michael Cabin was constructed around 1937. This is a curious time in the history of Olympic National Park. The National Park Service had accepted administration of the Olympic National Monument, but the remainder of the future park was not transferred from the Forest Service to NPS until 1938. The site of the Michael Cabin is just off the northeast corner of the old National Monument boundary. The cabin was built on National Forest land just about as close to the monument one could come without being in it. Yet, the National Register Nomination states E. O. Michael, Jay Gormley, and Gus Peterson constructed the cabin. At the time, Michael, Gormley, and Peterson worked for NPS building trails and used the cabin on a provisional basis maintaining

trails . [1] As late as 1947, trail crews were still using the cabin.[2] Given the rivalry between the Forest Service and National Park Service at the time, it seems difficult to image the Forest Service issuing a permit to NPS to build the cabin. However it occurred, the Michael Cabin appears to have been constructed primarily for trail crews, and not as a recreational cabin. In this context, the cabin is significant for its association with the early NPS management of the national monument.

Site:

The cabin sits in an open clearing just off the Elwha River trail. The clearing has a slight but continuous gradient to the west. A level bench appears to have been cut into the slope for the cabin site. Only minimal low growing grass and vegetation surrounds the immediate building site.

Recommendation:

There is a natural drainage pattern around the structure, but the creation of the bench for the cabin site altered that pattern. A high point exists at the entry step to the porch and moisture is directed to each side of the cabin. This design though needs to be improved to keep water from going under the cabin. Just some simple shallow grade swales beyond each side of the cabin would allow the foundation of the cabin to stay drier and require less future maintenance.

Structure:

Unlike the larger logs of the Remann or Botten cabins, and to some extent the Humes cabin, the Michael cabin utilized somewhat smaller logs of around 6” diameter. Instead of the robust character of a large log construction, the smaller logs give the Michael cabin a more restrained feel in scale and appearance.

The log walls bear on wood piers atop stone footings. There is a shake foundation skirting on the sidewalls that is in very poor condition. Many

of the wood piers are showing signs of deterioration on the north and south (gable ends) of the building. On the south and north walls at least the lower four courses of logs are deteriorated and the sill log of the front wall looks questionable. There is evidence on the north wall of powder post beetle.

The roof framing is very similar to Remann and Botton cabins, with pole rafters, pole ceiling joist ties and log pole purlins as shake nailers. This assembly appears to be in good condition. When the cabin is re-roofed (see below) all the connections in the roof frame should be inspected.

Recommendation:

The rotted wood piers and all of the lower courses of logs on south and north walls should be replaced. A shake skirt should be install around the foundation. Consideration should be given to treating the infestation of powder post beetle with a borax-based application. This application will need to be reviewed with the environmental staff as borax can act as a herbicide and should not be used around sensitive or protected vegetation.

Roof:

In contrast to the small logs of the walls, the roof is composed of 32" split cedar shakes. In proportion, the shakes dominate one's view of the cabin, and this is one of the characteristics of the building that should be retained.

The condition of the roof shakes is relatively poor. There was no sign of leakage during a recent inspection, but the weathered surfaces suggest the shakes are reaching their serviceability.

Recommendation:

The cabin should be re-roofed with new shakes. All the connections and members of the roof frame should be inspected to insure they are secure and adequate.

Windows:

The cabin has four window openings. Three of the windows appear to have a semblance of a sash frame. One window has no sash frame. The frames are without glass, and instead covered with screen fabric for ventilation.

Recommendation:

The windows should be inspected periodically to insure the screen fabric is in good condition.

Door:

Both the front and back doors of the cabin are constructed of 1 x 6 cedar boards with cross bucks and a single diagonal. Both doors are in good condition.

Recommendation:

The doors just need to be inspected as part of periodic maintenance and repaired in-kind as required.

Interior:

On the interior 1 x 8 shiplap is used for the wall, ceiling, and floor. The ceiling and floor are in good condition, while the floor is fair and has a few loose floorboards in the northwest corner.

Recommendation:

The loose floorboards need to re-secured and inspection of the floor part of periodic maintenance.

Front Porch:

The front porch is constructed with two sill logs on wood piers with a split cedar deck. Four pole columns support a pole framed roof frame. The porch roof is cedar shakes.

The sill logs and most of the wood piers are in poor condition. Most of decking appears to be in serviceable condition at present. The wood pole columns and the roof frame are in poor condition as are the roof shakes.

Recommendation:

The front porch should be dismantled and completely reframed and re-roofed. It should be noted that the shallow pitch of the porch roof is not conducive to long-term durability of shakes. Shake roofs require at least a 4/12 slope for reasonable service. A shallow roof slope as the front porch will require both a shorter interval of periodic inspection and a shorter interval in the service lifetime of the shakes. The porch shakes will most likely have to be replaced twice as often as the main roof.

Rear Shed:

A semi-enclosed rear shed is attached at the back of the cabin. It is constructed with a pole frame. Both the roof and sidewalls are split cedar. The shed is in poor condition. The bases of many of the pole support columns are rotted. Most of the cedar siding is deteriorated where in contact with the ground. The roof shakes are highly weathered.

Recommendation:

The rear porch should just be stabilized by replacing the wood pole columns on stone footings and the frame squared. Some rot is present in the end grain of the roof rafters. Frame connections should be re-secured and questionable rafters replaced. The new shakes are needed on the roof. As with the front porch, the shallow slope of the shed roof is not favorable to long-term durability of wood shakes and they should be inspected more often for condition and weathering.

Epilogue:

In the spring of 2008, conservation measures were undertaken by NPS staff to stabilize and preserve the Michael Cabin as part of the stewardship of this historic structure.

Figure No. 2: Beginning of the Project

The work entailed removal of the i1 x 8 shiplap interior walls sheathing and floor sheathing in order to replace deteriorated wall logs. Five complete wall logs were replaced along with a number of crown ends. The floor was

supported on random placed cedar piers. A new fir log center girt was installed on new cedar piers. New interior sheathing was installed on the floor and walls. 25% of wall sheathing is new and 70% of the floor sheathing is new. Missing pieces of door and window trim were installed to match existing. The framing for both the back and the front porch was replaced due to decay.

Figure No. 3: Rear Porch Framing

20% of the front porch deck was replaced with split cedar to existing. Complete new split cedar shake roofs were installed. The deteriorated roof jack was replaced to match. The existing flashings for the front porch and ridge were in good condition and reused. All skirt framing and pickets were replaced, and the site regarded for positive drainage.

Figure No. 4: The Michael Cabin, March 2008.

[1] See National Register Nomination for Michael Cabin, on file at Olympic National Park Archives, and Interview with Ted Sullivan by Dave Skinner and Jacilee Wray January 30, 2001; Transcribed by Heather Hennum April 27, 2001; on file at Olympic National Park Archives, p. 8

[2] Interview with Ted Sullivan by Dave Skinner and Jacilee Wray January 30, 2001; Transcribed by Heather Hennum April 27, 2001; on file at Olympic National Park Archives, p. 13

IV.6
Enchanted Valley Chalet

Figure No. 1: Enchanted Valley Chalet, 2005.

After the Olympic Chalet Company was chosen over the Olympic Recreation Company to construct the Low Divide Chalet in 1926, the Forest Service then asked the Olympic Recreation Company if they would be interested in a chalet on the east fork of the Quinault River. At this time, the Forest Service was considering building a road up the valley. Counting on the road being eventually built, the Olympic Recreation Company took out a special use permit in 1928 and received design approval for the chalet in 1930.

Constructed in the summer of 1930 by T. E. Chrisswell and son Glenn Chrisswell. The 2 1/2-story structure was 28 x 42 feet, and made of silver fir

logs. The logs were hand hewn with the first story 10" wide and the second 8" wide. The building was completed and opened to guests in early August 1931. It was a successfully operation in the initial years, but by 1936 the climate of the Depression eventually led to the decision to sell the buildings to NPS and not close the lodge. Meanwhile, the lease was transferred to the National Park Service and discussions began in 1939 for NPS to acquire the property. During World War II, the Chalet was used by the Aircraft Warning System and Superintendent Macy wrote to NPS San Francisco office that he desired to station a fireguard at the Chalet that summer.

Eventually, Congress authorized purchase of the property in 1944, but it was not until 1951 that price negotiations were resolved and the government official took ownership of the building. Hikers used the building during this period, but without any formal management. In the early 1950's NPS made some repairs to the building, stationed a seasonal summer ranger there, and opened it to public use.[1]

Little attention appears to have been given the condition of the Chalet for the 30 years, and by the early 1980's, it had become "…so rundown that most of it was closed to the public." [2]

A coordinated effort was organized in 1982 by the National Park Service, the Olympians Hiking club of Grays Harbor, and the Weyerhaeuser Company Foundation to restore the historic chalet. With the help of a grant from the Weyerhaeuser Company Foundation military helicopters ferried in 14,000 pounds of materials for the project. The materials included 4-30' logs, 2-22' foot Douglas fir logs, 4-12' logs, 20 shutters, 16 windows, extra glass, 20 concrete pier blocks, 4-4x4 10' posts, 10 120 lb bags of pre-mix concrete, 4 bags of lime, 16 bags of sand, 100 bricks, tools, fuel, food, and two outhouses. Walls logs were replaced, the chimney repaired, windows restored, and extensive painting and repair of the interior, along with applying preservative to the exterior surfaces of the log walls. The work lasted through the summers of 1983 and 1984. When completed in 1984, the project was the largest single cooperative project between private citizens

and the Pacific Northwest Region of the National Park Service for that season.

The work was so extensive that when a condition assessment was conducted the following year (1985), the chalet was considered to be in excellent condition for its age and building type. Recommendations from the repair make no reference to any needed repairs, listing only cyclic maintenance and inspection.

A condition assessment thirteen years later in 1998 found the structure to continue to be in excellent condition with only some shallow surface rot on the lower courses of logs and many areas of missing chinking between the wall logs. Recommendation was to chink the logs with fiberglas insulation to help control rodent problems in the building.

The winter of 1998/99 was very harsh. A condition report in the summer of 1999 noted that shakes were missing from the roof, leaks had developed, and snow sliding off the roof had torn off the roofs over the entry door and the bulletin board. Bricks were spalling off the chimney. Many of the logs in the lower wall courses were deteriorating, especially on the north wall with the exception of those replaced in 1984. Windows needed repair and repainting. While it appears the building had reached another period of repairs though there is little documentation on actual work that addressed these issues.

The last condition assessment of the structure occurred in 2004. It was conducted by the National Park Service Historic Preservation Training Center. The assessment addresses many of the concerns from the 1999 report. Deterioration was observed in the logs of the north wall with a recommendation for replacing nine logs. Site re-grading was recommended at the base of the structure below the eave lines of the roof to try and direct moisture away from the building. Maintenance painting of all windows and shutters needed to occur and replacement of the roof over the door recommended, but redesigning it to be a shed roof in lieu of the former gable canopy. The top of the chimney was noted as needing some brick

replacement, though the extent and quantity was not discussed. The most extensive recommendation was for the complete replacement of the shake roof. It was felt that as of 2004 the roof had only a few more years of service left.

Figure No. 2: Enchanted Valley Chalet, 2004

Site:

The issue of site drainage is always critical around structures, but especially so for log buildings. It is good maintenance practice to insure the exterior of a structure has a positive grade slope away from the building. On level sites, this is best accomplished with grade swales constructed as a collection basin and then gently sloped for drainage.

Often the concept of foundation drains is discussed in regards to site drainage, and in instances of a perfectly level site and the reluctance for site alteration or restraints, they can be useful. The performance of foundation drains is affected by soil type, frost depth, organic decomposition and method of installation. In remote locations, grade swales are easier to maintain and construct that foundation drains.

Concrete foundations like under the chalet will always transport a degree of moisture. Without a damp proof barrier on top of the foundation, ground moisture can and will migrate to the underside of the sill log. As future work is conducted to replace logs in the wall, consideration should be given to installation of a damp proof barrier to reduce at least one source of moisture into the sill log.

Recommendation:

Grade swales should be maintained around the chalet for moisture control and when replacing sill log a damp proof course should be insert to reduce foundation moisture migration.

Structure:

A persistent issue with log structures in heavy snow country is the deep accumulation of the material along eave walls as the roof sheds snow. During a long, slow spring melt, the moisture from the snow saturates those courses covered under the snow. As this moisture evaporates, the cold temperature of the snow creates a microclimate of high humidity next to the building, encouraging fungal growth.

Removing the snow in a remote location is impractical. An application of log preservative has been applied to the logs of the chalet at least once in 1984. The challenge with topical applications of preservative is their length of service and environmental effects.

The most promising and a widely used material currently in the wood preservation industry is borate. Borate is effective for fungal and insect control. Both topical and solid rod inserts are available. In conditions like at the chalet, the use of borate rods inserted into the lower courses of logs would aid in reduction of the degree of fungal activity. A small hole is drilled in the log, a borate rod inserted, and the hole plugged with a wood dowel. The borate rod remains inert until in contact with moisture. Then some of the material dissolves to migrate through the wood and prevent fungal activity. When the moisture in the log is reduced through drying, the rod will go back to an inert status. One of the problems with borate is its effectiveness as an herbicide. The borate material can leach from the logs under high moisture content and if there are sensitive plantings around a building they sometimes can be affected. The use of any borate preservation treatment should be reviewed by the Integrated Pest Management officer at the Park for approval.

Borate preservative of course will not repair deteriorated logs, and in the instance of severe rot, the log must be replaced. Depending on the depth of a log, some logs can continue to be utilized with a borate treatment when there is only minor surface deterioration.

Some instances of powder post beetle activity have been recorded on the chalet walls. If active, a borate treatment can again be used.

In all instances, preservative should be utilized in a managed and controlled manner for specific problems. Indiscriminate use is never justified.

Recommendation:

Deteriorated sill and lower course logs on the chalet should be replaced. During the process a borate preservative treatment can be incorporated. For those logs still serviceable, in place treatment can be considered.

Roof:

The roof of the chalet was noted in 2004 as reaching its service life. In addition to the actual shakes, during a re-roofing project the flashing around projections like a chimney should be replaced and correctly installed.

Recommendation:

Planning should proceed with replacement of the shake roof in the near future. As part of the project, all flashing should be replaced.

Chimney:

Observations have been made on the chimney of brick failure and spalling. In general, there are two primary causes for such action. First is the quality of brick, and second is the character of the mortar used in the assembly. Lightly or moderately fired brick is too porous and will adsorb enough moisture from snow melting off the top of the chimney to be effected by freezing. Too hard a mortar will not respond thermally to temperature changes in the chimney.

Bricks used for chimneys in extreme climates should be specified as "SW – Severe Weather". These bricks are the most durable and least porous of standard manufactured brick. Mortar for a chimney should be of a Type 'N', mixed on site and not pre-mixed in a bag. Such a mortar will respond better to thermal movements and still retain a high degree of bond.

Since repairs are needed on the chimney, it is usually better to rebuild from the roofline up. This would also allow incorporation of new roof flashing during replacement of the shake roof.

Recommendation:

Repairs/rebuilding of the chimney should be done with SW brick and a non pre-mix Type 'N' mortar.

Windows:

Painting and re-glazing of wood windows is cyclical maintenance preservation procedure. In 2004 it was observed the windows were in need of painting. The North Cascades Preservation Building team works out of a shop on Whidbey Island in Ebey's Landing National Historical Reserve. The team members have extensive training and experience in the preservation treatment of historic windows. They have developed the best treatment procedures for historic wood windows in the Pacific Northwest. They should be consulted for the most durable glazing and paint for the project.

Recommendation:

As part of the preservation program for the chalet, the windows should be completely primed, re-glazed and painted.

[1] Geerdes. Raymond. [Seasonal Ranger] Enchanted Valley and its Chalet. 1954. [OLYM Archives, Superintendent's Office Files, Accession No. 438, no box #, File 30; Enchanted Valley Chalet, 1983-1985.]
[2] Weyerhaeuser Company Foundation, 1983 Annual Report. . [OLYM Archives, Superintendent's Office Files, Accession No. 438, no box #, File 30; Enchanted Valley Chalet, 1983-1985.]

V.1

Ranger Stations

With the creation of the Forest Service in 1905, the new director Gifford Pinchot had already devised an administrative organization for the agency. Each of the new national forest would have a supervisor who reported directly to Washington D.C. Under the supervisor were the rangers, a colloquial synonym for "range riders" and "forest guard." A ranger was assigned a district within a national forest. His job was to patrol and protect the forest reserves of the district. By 1908, the Forest Service policy was to furnish or construct at government expense a cabin for the ranger. Initially the limit was $300, but was raised to $650 the following decade, a sum that could easily construct a small building.[1]

Meanwhile, Congress passed the Forest Homestead Act in 1906, which opened agricultural lands in forest reserves to settlement.[2] To secure good sites for administrative operations with good pasture for stock, the Forest Service began withdrawals of sites within the forest. On January 8, 1907, the Forest Service withdrew 40 acres from the public domain for an administrative site at the location of the present Elwha Ranger Station. [3] As the trail system expanded and both recreational and management use increased, additional withdrawals were made. A withdrawal was filed for the original Olympus Ranger Station on November 13, 1912, and one filed for the Elkhorn Ranger Station on April 11, 1914. [4]

As part of Gifford Pinchot's administrative program for the Forest Service image was very important. As a reflection of the agency, the rangers who lived and worked at these stations, along with the stations themselves, would be the immediate public face of the agency. Pinchot required the rangers to maintain a high level of professional appearance and to keep clean and sanitary ranger stations.[5] In keeping with this ethic, the character and design of the stations was not to be left to chance. In 1908, the Forest Service issued a series of standard plans for buildings on Ranger Stations. [6]

Twenty-nine standard plans were developed, including fifteen (15) for ranger cabins, four (4) for residential structures, two (2) for bunkhouses, four (4) for stables, two (2) for storehouses, and one (1) for typical details for frames houses, and one (1) for typical details for log houses.

While standardized plans were published for structures, the early years of the Forest Service is characterized by minimal administrative guidance in site planning. Gifford Pinchot's 1906 Use Book merely says the privy was to be fifty yards from the house and the American Flag was to fly over the headman's tent. It also envisioned a ranger station in every township within the forest, a concept that was quickly found to be impractical. There were though many unstated, but practical, provisions that were employed in the location of a ranger station. Consideration had to include:

- Ease and access to different parts of the unit being managed
- Accessibility to best serve the Public
- Appearance
- Natural setting
- Exposure
- Drainage
- Accessibility
- Fuel
- Shade
- Shelter
- Water
- Pasture

A southern or southwest exposure was preferred for maximum sunshine. Domestic water supply was critical. Open pasture for stock and a level, or slightly level site, for building placement while maintaining adequate drainage. It was preferable to have an open area around the cabin.

By 1915, a log cabin ranger station building was constructed at Olympus Ranger Station. A log cabin ranger station was also constructed at Elkhorn

and Elwha around the same time. In both instances, the buildings and site reflect many of the early planning and design considerations that would evolve into the planning manual of the 1930's.

As the Forest Service matured and the roads began to penetrate the districts, ranger station became a term for a more central administrative operation and the former remote ranger stations began to be called guard stations. The term guard was a position below a ranger, often seasonal but not always, and more associated with fire protection than broader organizational responsibilities. Thus, locations like Elkhorn and Olympus evolved into "Guard Stations" from early ranger stations. Of historical importance though, they retained the concept of an early ranger station in having a small cabin that acted both as office and residence, a barn and small pasture area for stock, and a woodshed/storage shed.

During the early 1930's, new "Ranger Cabins" were constructed at both Elkhorn and Olympus. In an August 1935 report, Preston Macy, appointed administrative custodian of the Olympic National Monument in 1934, noted that Elkhorn had both a new and old ranger stations (cabins), a horse barn and a shelter (shelter dated as 1933), while Olympus had both a new and old ranger station, plus a combination shelter/woodshed (dated as 1932).

According to an August 24, 1935, report by Preston P. Macy, Acting Custodian for then Mount Olympus National Monument, the Forest Service constructed a Hayes River guard station ten years prior to his report, or in 1925. He described the cabin as being log, and 8' x 10' in size. [7] It is indicated on a Forest Service map of 1930. When the National Park Service began administration of newly established Mount Olympus National Monument in 1934, Acting Custodian Preston Macy noted the Forest Service had, "…removed some trail tools from Hayes River GS (sic) in spring of 1934." [8] A year later, in a memo to Superintendent Tomlison, Macy mentions that phone service had been established to Hayes River. In 1936, responding to a request of Asst. Director, Conrad L. Wirth, Macy noted that only three ranger stations were used in the Monument during the summer months. The stations included Elk Horn, Olympus, and

Dosemeadows. No mention of the guard station at Hayes River being utilized.[9] By 1940, after creation of the national park, the Park Service developed a map to noted existing all shelters, ranger stations, fire lookouts, campgrounds, resorts, and "patrol" cabins. The patrol cabins were then noted as Flap Jack GS, Hyak GS, Olympus GS, Elkhorn GS, Dosemeadows GS, and Hayes River GS.[10] Eight years later (1948), in a list, compiled by Preston Macy, of National Park Service accomplishments since taking over the national monument and the creation of the national park, there is an entry for a new ranger station at Hayes River.[11] Given the Forest Service cabin is described as being only 8' x 10', and the current cabin is roughly 18' x 20', it appears the Hayes River Patrol Cabin was a construct of the National Park Service sometime between 1940 and 1948.

Conservation Goals

The guard stations at Elkhorn and Olympus still provide valuable administrative services within the Park. Both are used on a seasonal basis as backcountry visitor contact stations and area centers for park management programs like trail maintenance, conservation programs, and emergency coordination. They perform these services while retaining many of the qualities and character of early Forest Service ranger stations. They are located at early Forest Service sites and the buildings continue to characterize Forest Service values in scale, materials, and design. This combination of practical use and historic context makes these early ranger stations valuable landmarks in understanding the development of the National Park.

The Hayes River Patrol Cabin is of the National Park Service era, but it illustrates the continuing historic concept of having seasonal personnel stationed in the backcountry as part of an administrative program. It continues to be a functional resource.

These resources should continue to be addressed under a conservation policy of Preservation. Original material should be preserved and kept functional

through a well-designed maintenance program. This program would include coordinated periodic inspections, essential annual maintenance task as insuring good site drainage and roof cleaning, and where necessary restoration of deteriorated material and replacement in-kind of material and assemblies that have reach their service life. Such an investment will be a benefit to the Park and the resources under its care.

Elements of Significance and Character Defining Features:

Early Forest Service "Guard Stations" provide a direct historical association with the development of the national forest and the foundation of many of the trail and development of what became Olympic National Park. In this context, the concept of significance plays a vital role in establishing maintenance policy. For historic structures, significant elements are those qualities of the building that provide historic meaning and understanding.

At Elkhorn, Olympus, and the Hayes River Patrol Cabin, in terms of significant character defining elements, the landscape site and the location of the buildings within the site are of vital importance. Keeping the open nature of the sites and the relationship of the structures is critical. For the most part, the structures have retained a high degree of integrity regarding design, materials, and function. Continued maintenance using material that matches the original construction is vital. Retaining the wood windows, shake roofs, milled board doors, wood flooring, and log frames/walls all contribute to preserving the history of the site. Refraining from additional buildings or additions to existing structures is important. If new functions are needed, or lost functions restored, they should first be evaluated in terms of either using existing space in the structures, or restoring the structure associated with the lost function. If a new building is needed, then very careful attention needs to be paid to location in the setting and to the historic buildings. In all cases of proposed work, the cultural resource staff and park historical architect must be consulted during the planning process.

[1] Smith, Elizabeth M., History of the Boise National Forest, 1905-1976, Idaho State Historical Society, Boise, 1983, p. 41-44.
[2] Muhn, James and Stuart, Hanson R., Opportunity and Challenge: The Story of the BLM, U.S. Department of the Interior, 1988, page 34.
[3] Land Status Records and Withdrawals, Card 36, Microfiche files, Olympic National Park Archives, Olympic National Park; Elwha SW/SW Sec. 9, T29N, R7W, Transaction No. 3.
[4] Ibid., Card 35.
[5] Lewis, James G., The Forest Service and The Greatest Good, Forest History Society, 2005, p. 50-51.
[6] *Bills of Materials Accompanying Standard Plans for Buildings on Ranger Stations,* Department of Agriculture, Government Printing Office, 1908.
[7] Macy, Preston P., Acting Custodian, to Marlow Glenn, Accountant, Mount Rainier NP. 24 August 1935. [OLYM, Shelter Notebook, Paul Gleeson's office.]
[8] Macy, Preston P., Acting Custodian, to O.A. Tomlinson, Superintendent, 3 October, 1935. On file, University of Washington Libraries, Special Collections Division, Prestion P. Macy Papers, Accession No. 3211, Box 1, Folder 18.
[9] Ibid., folder 19
[10] Ibid., Box 2, Folder 6.
[11] Ibid, Box 1, Folder 33.

V.1.1
Elkhorn Ranger Station

The Elkhorn Ranger Station, also known as the Elkhorn Guard Station, is located roughly 17 miles up river from the Elwha Ranger Station. The Station complex consists of four (4) structures: Ranger Cabin, Woodshed, Shelter and Barn. The cabin and woodshed are in their original location, while the barn and shelter were re-sited in the mid 1990's due to a change in the river channel and a fear of losing the structures.

Site: General

Located in a small open meadow close to the river, the site afforded room for keeping stock while having a local spring provide water for the cabin. The cabin and woodshed are positioned on a modest bench just below the hillside the east of the river. Looking out below the cabin to the west is a five-acre open pasture bordering the river. The barn and shelter are sited at the north end of the pasture at the base of the hillside

The structures are in open clearings surrounded by widely spaced deciduous and conifer trees. Lower ground cover grasses and native plants fill in the clearing and pasture.

Recommendations:

It appears the good drainage patterns are being maintained around the buildings. This practice should be continued to allow airflow around the sill logs and to reduce moisture content of local grade.

Ranger Cabin

Figure No.1:Elkhorn Ranger Cabin, October, 2006.

The Ranger Cabin is a simple singe story rectangular log structure whose building plan is very similar to one of the Forest Service 1908 standard plans (See Figure No. 2). The original plan had two rooms, and up until the 1970's, the Elkhorn Ranger Cabin also has a front and backroom with an intermediate partition. A recent remodel altered the original plan to a single open room. There is now a storage loft in the front section of the building over the ceiling rafters.

The cabin was assessed in late 1990's. It was found to be in generally good condition. The only noted deficiencies were the ends of some floor joists raised out of the notch in the sill log at the NW corner causing a movement in the floor, a deteriorated sill log on the back porch, and a deteriorated area under the sink. In the spring of 1999, the floor was sanded and painted, windows glazed except for ones with cracked panes, some cupboard doors replaced, screen doors fixed, and the sink plumbing repaired.

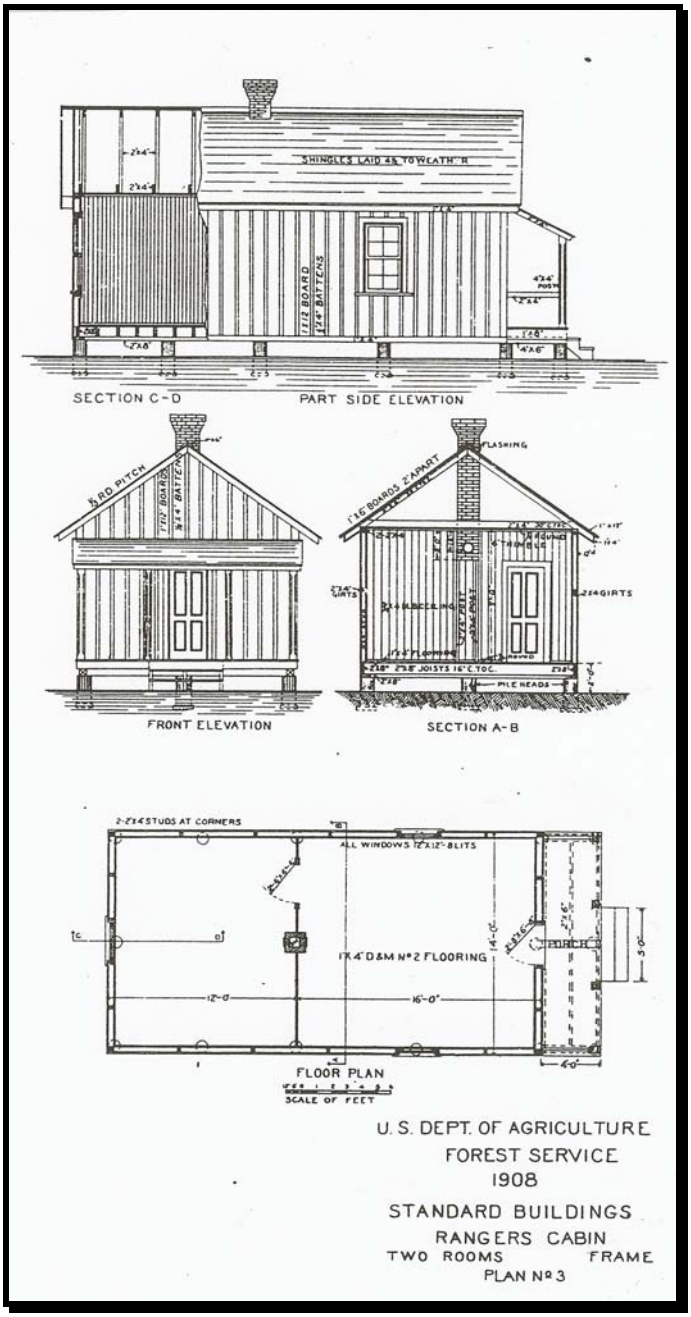


Figure No. 2: Standard two-room ranger cabin.

Site:

(See General observations)

Structure:

The cabin is constructed with log walls resting on a flat river rock. The log corners are saddle notched. The logs are tightly laid with only some areas of wood chinking on the interior of the walls. There are log sill logs on the north and south sides, but the two courses immediately above the sill logs have been replaced with 6" x 6" fir beams. The gable end walls are log. The roof structure consists of longitudinal purlins on either a two or three log spacing of the gable log courses. In the 1990's it was recorded that log rafter were present under the purlins at the gable ends and one at the center. Since then three additional rafter braces have been added at each ceiling joist location in the storage loft section of the roof.

Figure No. 3: Note fir beams replacing logs in sidewalls.

It is unknown when the 6" x 6" fir beams were put into the sidewalls. It is suspected that the sill logs and the upper two courses deteriorated requiring their replacement. The building could be "lifted" to insert the new sill log, but to insert any new upper wall logs required separating the "notch" at the corners. In lieu of installing new wall logs, the fir beams were just slipped in.

There are two conditions in the structure of concern. First, the southwest corner of the building is subsiding. It was noted in the 1990's assessment that there was "substantial dry rot on ends of lower logs at SW corner." This movement is causing a slight twist in the building. In turn, since the log floor joists are notched into the sill log, the floor will torque. It is suspected this is the cause of the raised floor joists noted in the 1990's assessment.

The second concern is the added rafter braces under the purlins. It is doubtful these are original except for the ones at the gable ends. The original interior wall would have added support for the purlins. By removing the wall, the span of the purlins was increased with additional bending. The rafter braces were added apparently to compensate for the removal of the partition wall. It obviously has held for the past several decades, though additional rafter braces have been added since the assessment of the late 1990's. The concern is that the rafters bear on the ceiling joist at a point close to their bearing on the log walls. This creates a strong shear force in the ceiling joists. In addition, a center brace from peak to ceiling joist adds further load. Park staff did say that when installing the new shake roof, the purlins "flexed" noticeably, and they indicated that in an unusual winter, snow depth could reach two to four feet in the roof. Under a very heavy snow load, this could place excessive stress on the ceiling joists. For the present, since no indication of failure is apparent, the condition should be monitored. This would entail an annual inspection of the ceiling joists and purlins each spring when opening up the cabin. Each member should be inspected for excessive checking, cracks, or other indicator of excessive loads. This should just be considered a prudent maintenance precaution. If any sign

of excessive stress is noted, then corrective action should be taken. This could include the re-establishment of the interior partition, or other support solutions.

Last, just as an observation, small remnants of red log oil can be found on the original wall logs. At last once in the history of the cabin it had a red exterior coating. This was a common treatment of CCC work in the 1930's.

Recommendation:

For present, the settlement at the SW corner should be monitored. It is presumed the settlement occurred following the replacement of the sill log and has generally stabilized with a permanent twist in the wall.

Each spring the roof structure should be inspected for any indications of excessive stress and strain from winter snow loads.

Roof:

The roof consists of six courses of barn shakes and a ridge board. The 34" shakes are nailed to the purlins with a 10" exposure and 10" eave projection. The shakes are relatively new within the past decade and are in good condition.

There are two penetrations in the roof for the insulated stovepipe and a skylight. Both appear tight and in good condition.

Recommendation:

The shake roof should be kept clear of any accumulating duff or leaves. Otherwise it should be serviceable for many more years.

Doors

Both the front and back doors are rustic board formed assemblies with a cross brace. Each doors also has a screen door for ventilation. The doors are in good condition. The doors are painted on the interior and natural on the exterior.

Recommendation:

Maintenance coatings of the doors will need to be done on a periodic basis.

Windows

There are four 6 over 6 double hung wood windows in the cabin and one single 6 lite hopper sash over the kitchen sink. The windows are in good condition. They are painted on the interior and unpainted on the exterior. Each window has a sawn board frame but half-log exterior trim. The windows were re-glazed in 1999.

With the evidence of the red oil coating on the logs, it is reasonable to assume the windows were painted at one time. The assembled joinery of a wooden sash should have a protective coating. If they are to be left in a natural weathered state, the sash can be given a preservative coating and then stained.

Recommendation:

Consideration should be given to applying a protective coating to the windows simply from a preservation perspective.

Interior:

Floor

The floor of the cabin is composed of 1 x 6 board with sections of pieced in 1 x 4. The floorboards rest on log joists that are notched into the north and south sill log. The floor is painted grey, last being painted in 1999. The paint is wearing from traffic and use.

Recommendation

The floor is due for another maintenance painting, especially around the kitchen sink area.

Walls

The interior surfaces of the log walls are painted white along with the underside of the log ceiling joists. Only portions of the log walls have interior wood chinking between courses. It is difficult to ascertain whether chinking has been removed or the interior was only partially finished.

There are areas of paint loss where clothing and equipment are hung from the walls and ceiling joists.

Recommendation:

From purely a maintenance and appearance viewpoint, the painting should be periodically redone.

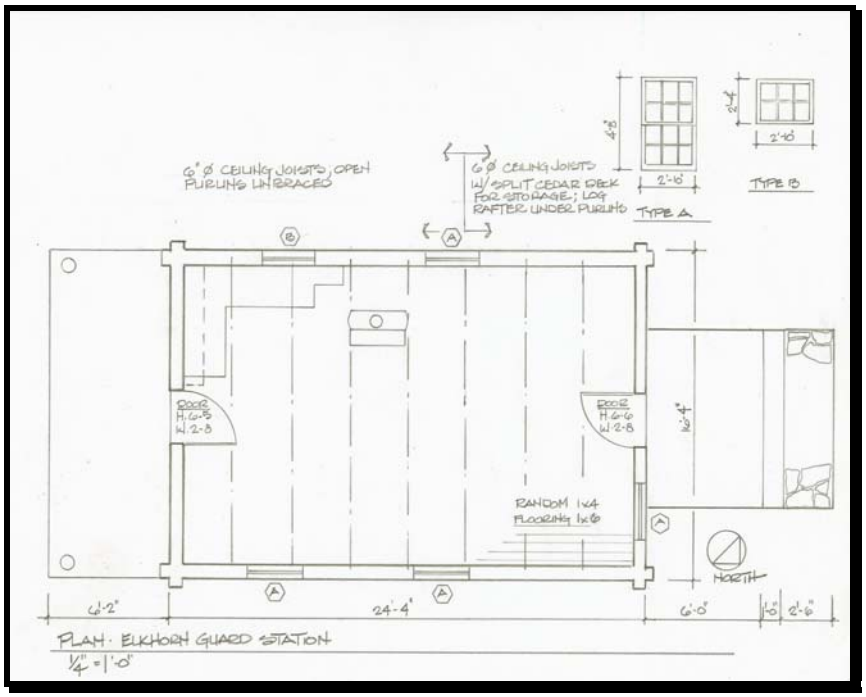


Figure No. 4: Plan

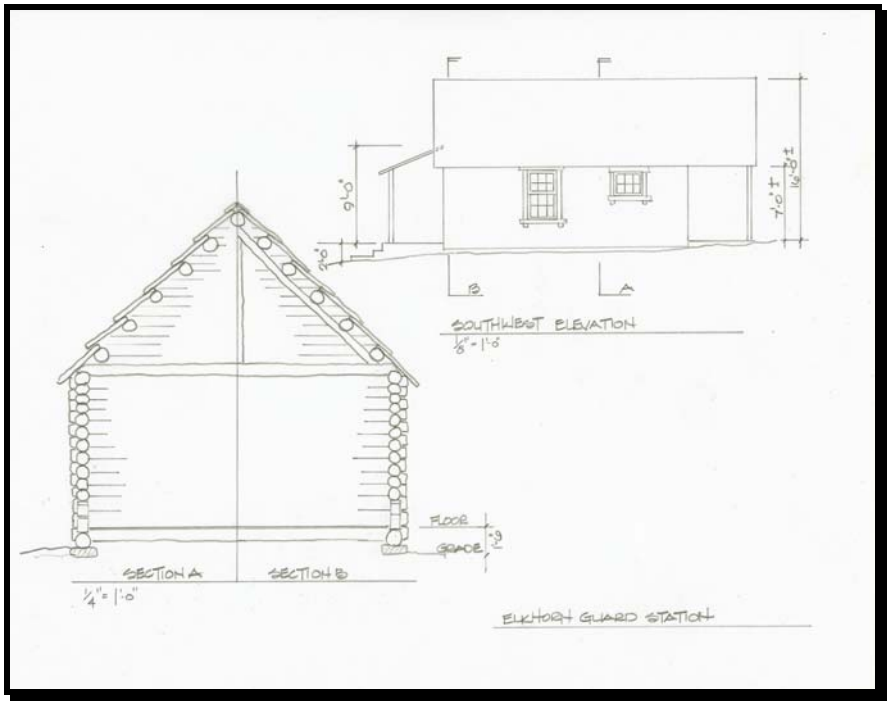


Figure No. 5: Section and Elevation

Woodshed

Figure No. 6: Elkhorn Woodshed , October, 2006.

Immediately behind the Ranger Cabin is a small 10' x 12' wood and tool shed. When the building assessment was conducted in the late 1990's the original structure was found to be in poor condition with rotting floor, sill beams, open holes in the shake roof and some deterioration of the wall frame. In the spring of 2000, a plan was implemented to completely reconstruct the woodshed. The building was sited three feet upslope from the original structure. The new shed is assembled from milled cedar. The rafters are clear vertical grain cedar. The roof and sidewalls are covered with cedar shingles. The building is in excellent condition and needs no discussion on its condition.

Shelter

Figure No. 7: Elkhorn Shelter, October, 2006.

The Elkhorn shelter is a standard Forest Service L-4 plan from the early 1930's. Exact date of construction is unknown, but was in existence by 1940 and is attributed to the Forest Service as part of its trail system up the Elwha River. Originally sited closer to the river, the shelter was moved in the mid 1990's to the current location due to concern of flooding from spring runoff. (See section V.2, Period 1 of this report for more background on this type of shelter)

Site:

(See General observations)

Frame:

The frame consists of the typical log assembly. 10" x 12" sill logs support an exposed braced log frame. The sill logs on the north and east sides appear to have been replaced when the shelter was moved. There are signs of minor powder post beetle activity in the non-replaced sill. The log frame members all look to be in good condition.

Recommendation:

Monitor condition of sill logs and base of vertical members for powder post beetle activity.

Sidewalls:

The sidewalls are board and batten. This is most likely replacement of original cedar shakes. It was common to replace the shakes in the 1950's with board and batten. The north and east walls look to have been replaced during the move. The boards on the south side have shades of red oil coatings, similar to what is found on the cabin.

Recommendation:

Conduct periodic inspection maintenance inspection of condition.

Roof:

The roof is composed of 32" shakes with an 8" lap over pole rafters. Compared to an 1980's photograph it appears the roof and rafters were also replaced after the move of the shelter. It is in good condition.

Recommendation:

Maintain roof cleaning on a periodic basis for long -term durability of roof shakes.

Interior:

This shelter has two bunk frames and a wood floor on the interior. The bunks and floor are in serviceable condition.

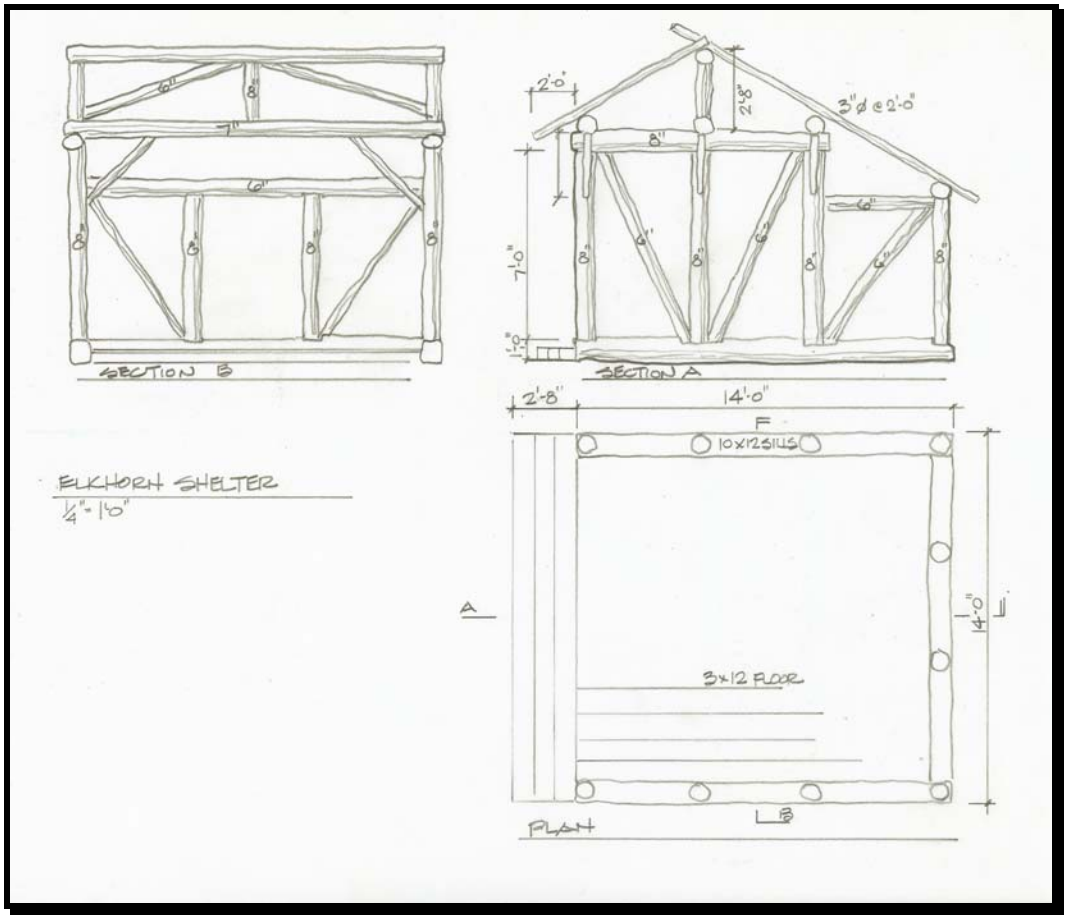


Figure No. 8: Elkhorn Shelter.

Barn

Figure No. 9: Elkhorn Barn, October, 2006.

The Elkhorn Barn is a log-framed structure with a steep gable roof. According to the National Register Nomination, the barn was constructed by the Civilian Conservation Corps (CCC) in the summer and fall of 1933. The structure has undergone substantial changes since construction. The function of the building evolved from a barn to a modified trailside shelter. By the 1970's the stalls, mangers, and hayrack had been removed and the wall of the two side bays had been opened. Similar to the Elkhorn shelter, the barn was moved in the mid 1990's to the present location due to concern with river erosion. In the move the building was turned 180°, reversing all former orientation descriptions of the building. Since it was standard practice for Forest Service barns to have a stock door on a gable end and the current sidewall nailer poles for the shake siding are not framed for a stock door, the stock door and its frame apparently were removed when altering

the building to a shelter type function. During an assessment in the 1980's it was noted that there were two shake covered doors on the south wall (now the north side). There is currently only one door on the north side. In addition, a considerable number of the log frame members appear to have been replaced at the time of the move in the 1990's, including sill logs and knee braces. Considerable portions of the north and east walls have had their shakes replaced also. On those shakes not replaced there are faint traces of red log oil. On the interior, the front half has a dirt floor while the rear half has a floored landing.

Site:

(See General observations)

Structure:

The log frame of the barn consists of three primary braced plate and ridge frames on a north-south axis. These frames are connected on an east-west axis by a series of log shake nailer poles. These nailer poles, plus two small angle braces at the open bays, provide the lateral resistance for the building. 5" pole rafters span between the ridge and wall plates, and in turn support 2 x 6 milled boards for the roof shakes.

Recommendation:

The frame appears to be in good condition. The horizontal shake nailer poles of the sidewalls give the structure stability and should be monitored for any connection failure or deterioration.

Sidewalls

The shake-covered sidewalls are generally in good condition. There are though several shakes on the east rake of the north gable wall that are deteriorated. These shakes protect the connections of the frame.

Recommendation:

Replace north gable wall shakes.

Roof:

The roof consists of 34" shakes with a 6" lap. The roof shakes appear to have been installed in the 1990's during the move. Except for a minor accumulation of duff and leaves, the roof is in good condition.

Recommendation:

Conduct periodic maintenance inspection for winter damage or loss of shakes.

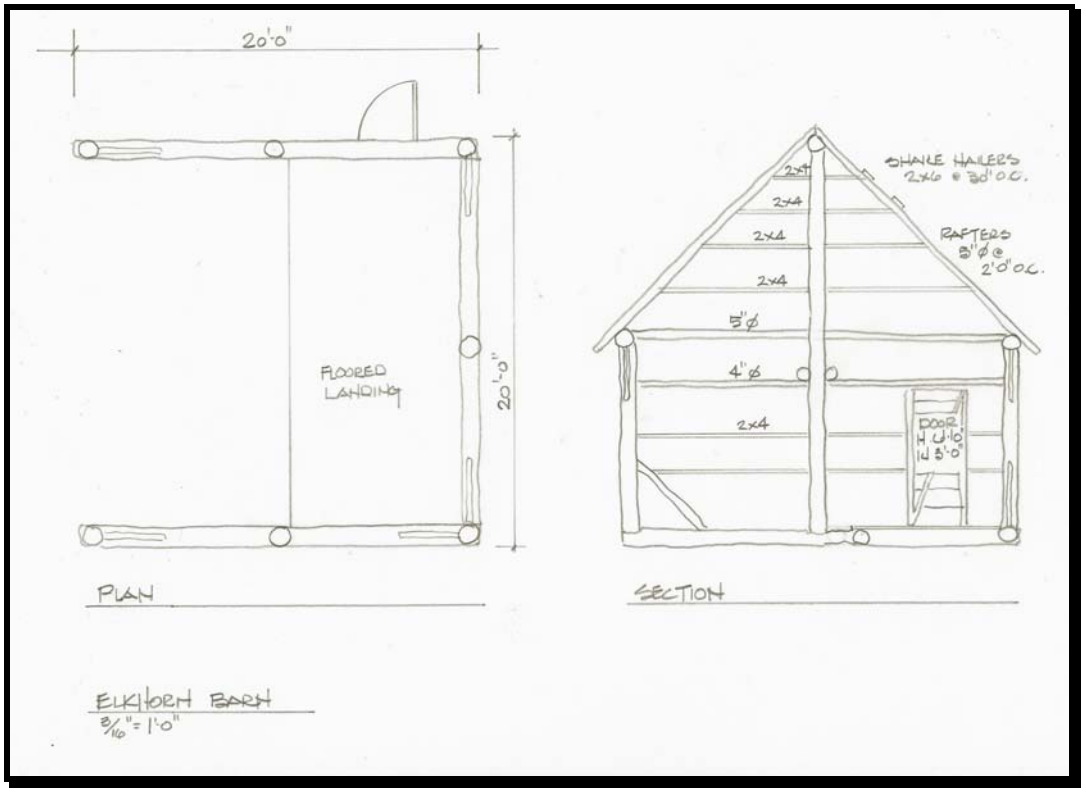


Figure No. 10: Elkhorn Barn

V.1.2
Olympus Ranger Station

The Olympus Ranger Station, also known as the Olympus Guard Station, is located roughly 9 miles up the Hoh River from the Hoh Visitor Center. The Station complex consists of three (3) structures: Ranger Cabin, woodshed, and Shelter.

The cabin is historic in origin, constructed by the Forest Service prior to National Park Service administration. The shelter was constructed in 1963 and the woodshed in 1998 by the Park Service, replacing original ones lost in a tree fall. The focus of this report will be on the history and condition of the historic cabin and shelter.

Site: General

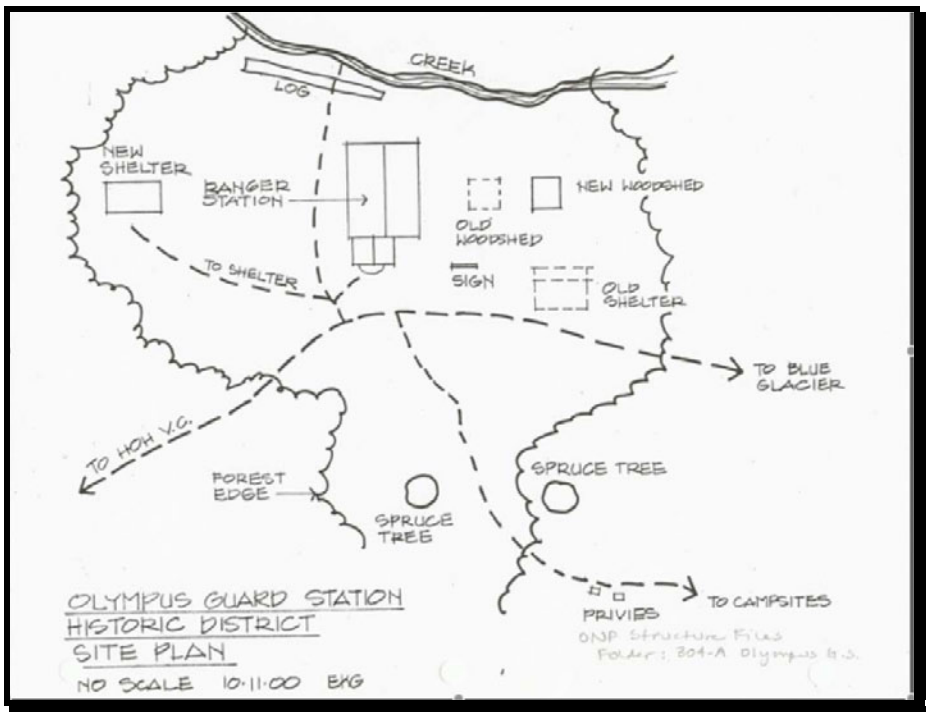


Figure No. 1: Olympus Ranger Station Site Plan, October 2000.

Located in a small clearing close to the river, the site afforded room for keeping stock. The cabin is sited close to a north/south axis and is flanked by the new woodshed to the east and the shelter to the west.

A conifer forest surrounds the clearing. Lower ground cover grasses and native plants fill in the clearing and pasture.

Recommendations:

It appears the good drainage patterns are being maintained around the buildings. This practice should be continued to allow airflow around the sill logs and to reduce moisture content of local grade.

Ranger Cabin

Figure No. 2: Olympus Ranger Cabin

Numerous dates have been proposed for the construction of the Olympus Ranger Cabin, ranging from the late 1920's to the early 1930's. Perhaps the most intriguing reference comes from retired National Park Service employee Will Muller. In a 2000 oral interview, Mr. Muller attributes the design of the building to then Forest Service District Ranger Sanford Floe about 1930. He states the actual construction was executed by Alex Boroff, a Russia woodsman "…who was great with a broad axe." [1]

Based only on circumstantial evidence, it appears the building was originally constructed utilizing a modified1908 standard design for a two room Rangers Cabin, matching the 1930's Elkhorn Ranger Cabin, the Mechanic's Residence at Elwha Ranger Station, and the original Elwha Ranger Cabin. The Olympus Ranger Cabin measures 16-foot by 24-foot in plan, which is the exact same dimensions as the other three structures. The building has an offset gable porch matching Elwha building # 27 and the original Elwha Ranger cabin. [2] In addition, a 1952 survey of the Olympus Ranger Station

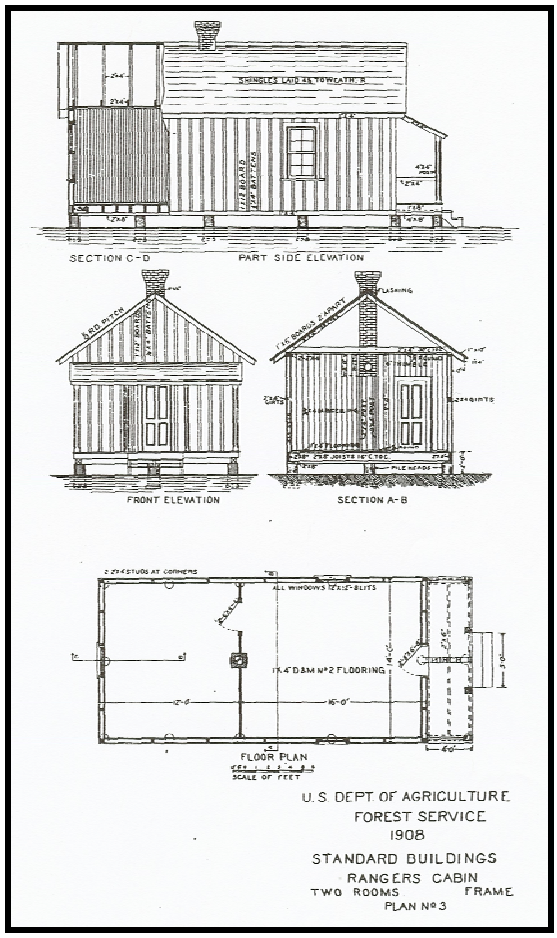


Figure No. 3: The rear portion of the current Ranger Station on the right was the original structure and was identical to the 1930's Mechanic's House shown on the left. Note the location of the entry door and the offset gable porch. Above is a 1908 Forest Standard plan for a 'Ranger's Cabin", which though detailed as 16 x 28, embodies the simple two room plan.

included a floor plan that shows an internal partition strikingly similar to the 1908 design. To have four structures with identical building footprints plus having many attributes of a Forest Service Standard plan suggests all these buildings were based on the same plan. At the time of the Olympus Ranger Station construction, the Forest Service was both trying to establish a style of structure that both expressed a Forest Service identity and its purpose. To that end, the Forest Service encouraged each region to design its buildings in the traditional or native architecture of their location. The style of construction appears to have been more a function of available materials and construction skills, with Olympus hand-hewn cedar logs, Elkhorn round log, and the two buildings at Elwha dimension lumber with log siding. All were an expression of prevailing Forest Service policy.

The Hoh is a challenging environment and there has been a long history of work on the Ranger Cabin. As early as 1944 the Park Service was requesting funds to re-chink the log walls and repair the shake roof. The request describes the building as "two room, typical of the Forest Service style." [3] By 1952, an NPS assessment found the building in good condition.

Some rehabilitation work appears to have been done sometime in the 1960's. The original 4 lite slider windows were replaced with single pane. Some work must have been done on the foundation and lower logs for in 1998 chain-sawn beams were discovered under the building. Chain-sawn spruce beams and milled red cedar beams were present in the lower courses of the walls, replacing the original hand-hewn beams. New tension rods were installed to resist rafter thrust on the walls. This was most likely the period when the internal partition was removed and the loft space with access ladder created. The reason this work is dated in the 1960's is the fact that the shelter was constructed in 1963. The design of the shelter is one that utilizes chain-sawn logs similar to that found in the cabin work.

A 1976 condition assessment found the building to be in "good" condition, but by 1985 signs of deterioration were beginning to show on the lower courses of logs. Recommendations were made to improve site drainage and remove vegetation at base of the building to promote drying. Some concern

was expressed that limited access to the crawl space prevented complete assessment and deterioration was probably developing around the complete perimeter and under-floor area. The roof was found in good condition, though the Plexiglas skylights should be removed. Recommendations also supported replacing fixed windows with historic 4 lite slides.

The 1985 assessment proved to be correct in its assumption of serious deterioration advancement in the floor and lower log walls. By June of 1996, field reports were noting settling of both the east and west walls, a pronounced lean in the south gable above the door, and gaps developing between the wall logs.

By 1998, a major rehabilitation program had developed and was implemented that summer. In involved a complete replacement of the former nine concrete block piers with fifteen cast concrete piers. New pressure treated beams were installed and concealed by new skirt board and watertable. The former three courses of chain-sawn spruce logs were replaced on the east and west walls. The sill log on the north wall was replaced as were the two lower courses on the south walls. A complete new floor structural system and 2 x 8 floor installed on the first and loft floors. A new stair was made for the loft. Other improvements included replacing two fixed windows with 4 lite sliders and one single upstairs, all operational for ventilation and fire escape. The front porch was completely rebuilt along with a new door. Single wall stovepipe was replaced with triple wall pipe. A new kitchen counter and tables were made. A new dry well was dug.

Present Condition:

Given the extensive work of the 1998 project, the cabin is in good condition. The ventilation under the floor and site drainage will always require annual maintenance to insure a conducive environment for long-term preservation. Of major concern is the condition of the roof. The 1985 assessment found the shake roof to be relatively new, but given a factor of 25 years of service, the roof needs to be monitored closely and likely scheduled for replacement in the next five years. The skylights should be removed along with the loft.

Historically, the cabin would have had a full ceiling, no stairs, and only a scuttle (attic access panel).

Being a vital visitor contact station and administrative site, the cabin should receive a high priority for fiscal maintenance support.

Olympus Shelter

Figure No. 4: Olympus Shelter

Completed in 1963, the Olympus Shelter was part of the last National Park Service trailside shelter construction program. These shelters were characterized by having the upper portion of the sidewalls made of beam members fabricated with a free-hand chainsaw process. The square beams were cut from logs just using a chalk line for guidance. Resting on a series of vertical log slabs, utilization of the square logs allowed for a solid gable wall of timber for the shelter envelope. The gable roof had a long slope to the back and a short overhand at the front, with the shake extension over the rear slope. The Olympus Shelter is one a six extant shelters of this design left in the Park.

The shelter condition was reviewed during the 1998 work on the cabin. The only work done to the shelter was to install a complete new shake roof.

[1] Interview with Will Muller by Jacilee Wray, June 22, 2000; Transcribed by Heather Hennum July 27, 2000, p. 11; on file at Olympic National Park Archives.

[2] Bills of Materials Accompanying Standard Plans for Buildings on Ranger Stations, U.S. Department of Agriculture, Forest Service, 1908, Plan No. 3.

[3] National Park Service Major Repair and Rehabilitation Program, Index 201-36, Olympic National Park, October 23, 1944; OLYM Archives, Superintendent's General Files, Acccs. No. OLYM-438, Catalog No. OLYM 18405, Box 3, Folder 3/3.

V.1.3
Hayes River Patrol Cabin

Figure No.1: Hayes River Patrol Cabin

The Hayes River Patrol Cabin is located roughly 22 miles up river from the Elwha Ranger Station. The cabin is a single story log structure measuring roughly 18' wide and 20' long. It has a full width, 7' deep porch across the front. The cabin was totally rebuilt in 1970 as a Youth Conservation Corps project.

Site:

It sits in an open clearing on a slight bench above the creek. Vegetation is clear of the cabin on all sides.

Recommendations:

It appears the good drainage patterns are being maintained around the building, though the deterioration in the sill logs (see discussion below) suggests more positive drainage is needed on the eave walls to encourage drying of the sill logs. This practice should be implemented to allow airflow around the sill logs and to reduce moisture content of local grade.

Figure No.2: Hayes River Patrol Cabin

The cabin logs are flat notched at the corners, with full log gables. The 8/12 roof has full length log purlins and ridge log to carry 36" long cedar shakes. The floor is 1 x 4 tongue and groove fir. The door is fabricated from log planks, 2 1/2" wide x 15" thick. There is a 29" x 34" window on each elevation. The interior has two built-in bunks.

The cabin was last assessed in 2006. It was found to be in generally good condition. Recent repairs include significant work on the porch. This work included new sill logs, floor joists, deck, fascia board and steps. Deficiencies, though. were noted.

Structure:

Both the north and south sill logs were observed to have significant deterioration. The north wall sill log was 40% rotten, all along the bottom face. The south log was 30% rotted in the bottom half.

Recommendation:

Both sill logs will need to be replaced. This should be done in conjunction with some probable repair of the stone foundation and site grading.

Roof:

Many loose and out of place shakes at the southeast corner of the roof. From the inside there are open holes and white mold on the underside of the shakes. In addition, the guy-wires on the stovepipe have failed.

Recommendation:

The roof shakes need to be replaced for a watertight weather envelope. If the shakes are from the rebuilding of the cabin in 1970, then a complete new roof needs to be installed.

V.2

Trailside Shelters

At Olympic National Park, the history of trailside shelters use and development can generally be followed through six periods of construction and design expressed in either extant structures or park documents. These cover both Forest Service and National Park Service administrative periods.

Period I: 1905 to 1934

The Forest Service administered both the Olympic National Forest and Mount Olympus National Monument during these years.

In 1910, five years after the creation of the Forest Service, catastrophic fires ravaged the forests of the Pacific Northwest. Five million acres burned and 85 men were dead. The Forest Service was ill equipped and under manned to prevent the loss. The legacy of the fires was a decades long determination by Forest Service administration to suppress every fire that started at all costs.[1]

From the very beginning, Chief Forester Gifford Pinchot had advocated that extensive trail systems would be required for management of the national forests. After the 1910 fires, fire suppression became the primary management objective of the Forest Service. For many foresters and rangers, the lack of adequate trail systems within the forests was viewed as one of the primary causes for all the devastation. Well designed and maintained trail systems would allow a few men to get to a fire quickly before it grew out of control. This belief emerged into an ideology that a trail system, coupled with lookout towers and telephones, would provide the logistical means to manage forest fires and protect timber assets. This would be a dominant policy of the Forest Service until the late 1970's.[2]

The Forest Service concept of a trail system envisioned use by foot and horseback. The trails were to be used for fire patrol and fire fighting crews.

To support the crews, equipment caches were to be incorporated into the trail design at periodic intervals, as was protection for crews and patrolmen in the form of cabins and trailside shelters. Supervisor P. S. Lovejoy was the first to initiate the application of this policy on the Olympic National Forest in 1912. Lovejoy was in Montana during the 1910 fires and was deeply affected by the experience. He said people considered him a "fire crank," for which he did not apologize. By the summer of 1912, his crews had "made a fair start to the shelters this season and the boys have the idea and will develop it if encouraged." Unfortunately, none of these early shelters have survived, and we know neither the number built nor the nature of the design[3]

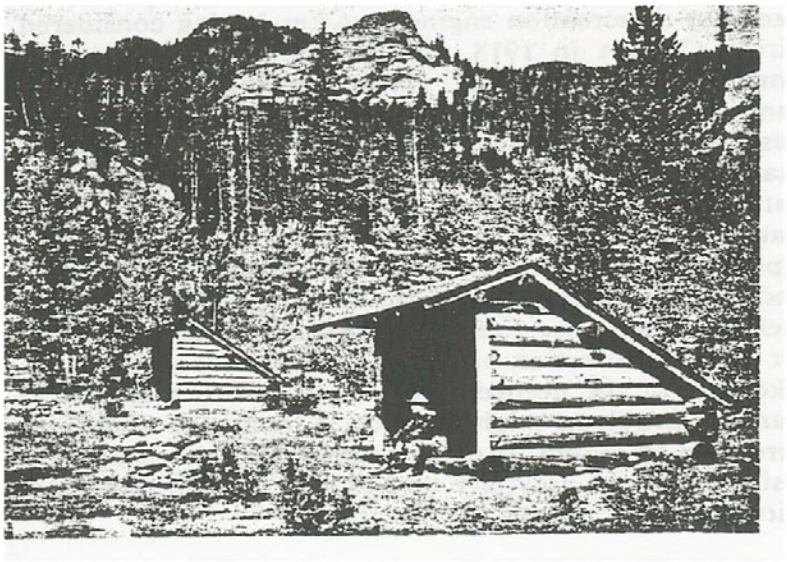


Figure No. 1: U. S. Forest Service constructed Adirondack style trailside shelters in Pike National Forest, 1917[4]

While trailside shelters were built as part of the fire management system developed by the Forest Service, trailside shelters were also being constructed for recreational purposes. (See Figure No. 1) Recreational use of the National Forest was recognized early in the history of the Forest Service, but there was no overall national policy until the 1930s. In the interim, recreational policies were left to each regional administration.

The North Pacific Region 6 of the Forest Service [Washington and Oregon] had simple lean-to trailside shelters for recreation as early as 1916, though we do not know their number or location..[5] By the early 1920's, the Olympic National Forest began to experience a sharp increase in the number of visitor venturing into the backcountry.[6]

Figure No. 2: Three variations of 12 ' x 12' shelter plans from 1934 Region 6 Building Plans handbook.

In 1927, under the direction of Forest Service planner F. W. Cleator, the Olympic National Forest Recreation Plan was developed. Cleator's plan essentially zoned the forest for various recreational uses. For the backcountry, Cleator identified both existing trails and new proposed trails with "recreational value," along which he proposed to construct rustic trailside shelters.

These shelters were, "frankly intended to be a dual-purpose development," serving both as administrative quarters for trail builders, fire patrols,

traveling FS officers, and for "the red-blooded fisherman and wilderness seeker." [7] Within five years of the development of Cleator's recreation plan the Forest Service had constructed roughly 100 trailside shelters.[8]

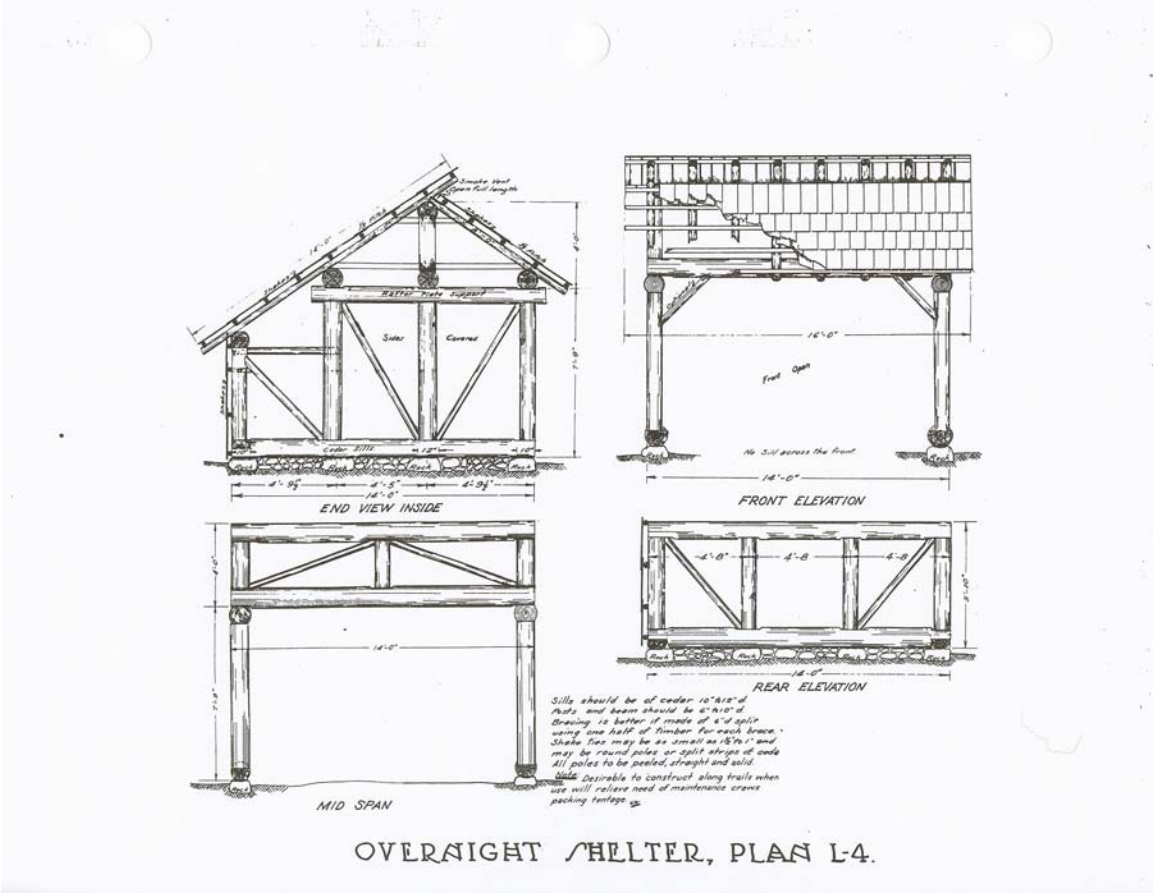


Figure No. 3: 14' x 14' shelter plan from 1934 Region 6 Building Plans handbook.

Cleator described his proposed trailside shelters as, "rough shelters of native logs, rock with shakes or other local materials."[9] By 1934 the North Pacific Region 6 had developed and issued a handbook of standard building plans that included two styles of overnight shelters "…useful in connection with trail maintenance, stock driveways and some Forest camps, particularly those frequented by pedestrian fishermen, alpinists, etc." [10] See Figures No. 2, and 3.

Of the ten (10) trailside shelters constructed by the Forest Service from 1928 (one year after Cleater's Report) to 1932 still existing in Olympic National Park, all are strikingly similar in style and size to the L-4 plan shown in Figure No. 3. They were 14' x 14' three sided, rustic wood framed structures with an offset gable roof of cedar shakes. Not one, though, matches perfectly in character of materials or structural frame. Some use split or squared cedar for the frame instead of log, while other use log, but

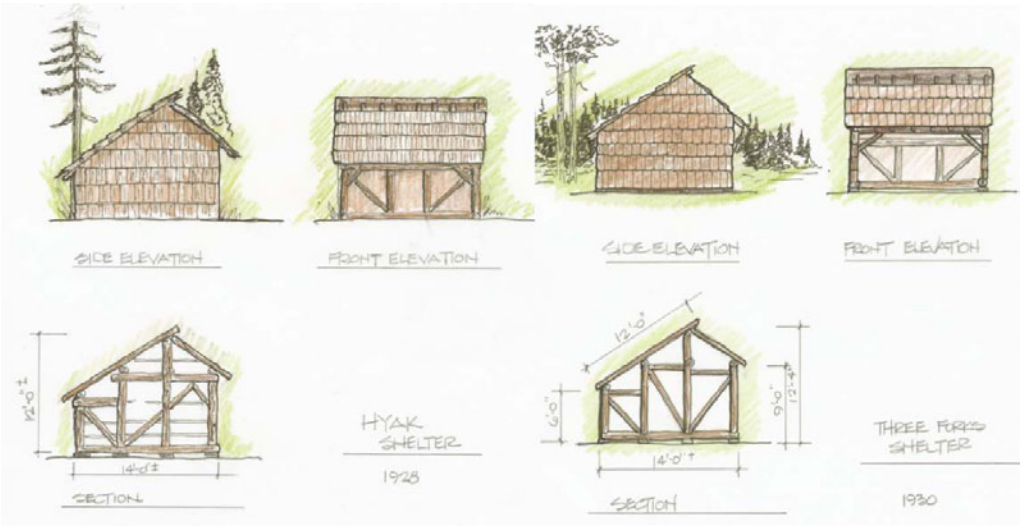


Figure No. 4: Hyak Shelter built in 1928 and Three Forks Shelter built in 1930 are both similar to the 1934 L-4 Standard shelter plan; look closely though at the brace framing on Hyak, and the offset wall beam of Three Forks, slight, but distinguishable variation.

vary in the sequence of bracing and frame details. Two have open front sidewalls similar to standard plans L-1 and L-2. With each of these historic Forest Service shelters a slight variation of the final standard plan, plus their having been built prior to the issuance of the standard plan, suggests they are early prototype variations dependent on the experience of individual builders and local materials.

Period II: 1934 to 1938: NPS and the National Monument

Between 1934 and 1938, the National Park Service administered Mount Olympus National Monument located within the Olympic National Forest. The Forest Service administered National Forest Service property outside the monument. In the first full summer of park administration (1935), Superintendent Macy noted that, "All shelters in Monument filled almost daily – need of additional shelters is very apparent, but it takes more than a lack of shelters to keep the lovers of the wilderness at home."[11] By the end of October 1935, the Park Service had constructed four new shelters within the Monument similar to the typical Forest Service style..[12]

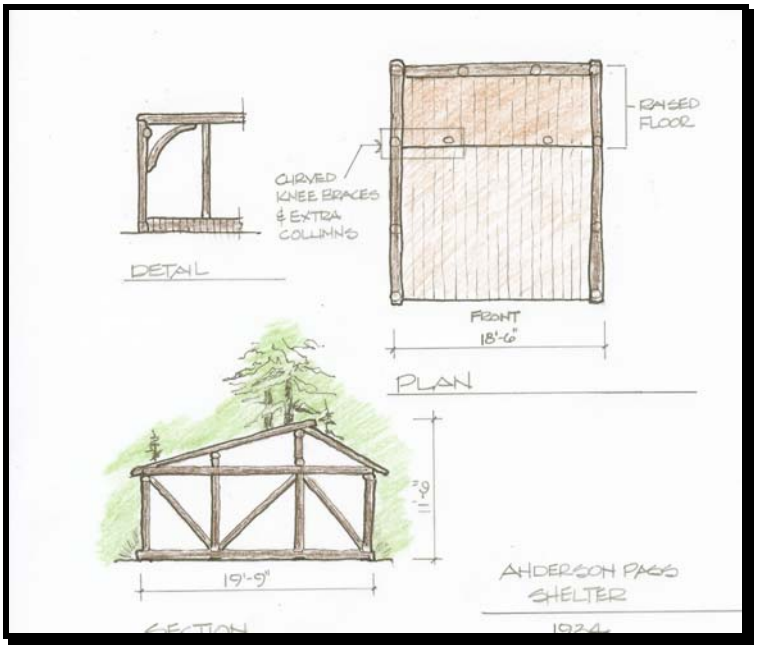


Figure No. x: 5: The Anderson Pass shelter was almost 20 feet square; one of the first shelters built by the National Park Service.

Only one of the original four historic shelters constructed the National Park Service remain from this period: Anderson Pass (1934). Home Sweet Home (1935), and Low Divide [Renegade] (1935) have been lost to weather and are not scheduled to be replaced. These shelters had similarities in style

with the Forest Service Standard Plan L-4, but were larger, and had some rustic details more associated with National Park Service design standards. The shelters were nearly 19 feet wide, and varied from 14 to 20 feet deep. The largest, Anderson Pass Shelter was twice the size of the early Forest Service shelters. Two of the shelters have curved logs for knee braces, while one even has exposed beam tails. While both of these could be interpreted as design details characteristic of the early National Park Service rustic style, the curved knee braces were actually installed by Park Service maintenance personnel in 1990. [13] These larger shelters had space for chairs and tables, plus sleeping areas. They were constructed to cater to larger hiking parties and protect more people during inclement weather. These were recreational shelters.

Period III: 1938 to 1941: NPS & CCC

In 1938, Olympic National Park was created from a combination of selected Olympic National Forest lands and Mount Olympus National Monument. These early years, continuing through World War II, were a tumultuous period when the Park staff was consumed with development of a management program; administration of the Depression-era PWA, WPA, and CCC programs, including construction of new headquarters buildings; and legislative disputes over park boundaries. Even with these other issues, the concern over backcountry recreational demands was not lost.

Figure No. 6: The Soleduck Falls Shelter was a National Park Service rustic design construction, complete with metal fireplace hood over porch.

In August 1938, only one month since creation of the Park, Custodian Macy was receiving complaints about lack of trailside shelters.[14] This need was fully recognized just a month earlier during formulation of the first park management plan. Widely acknowledged as a wilderness park, whereby the fundamental park experience occurred through a backcountry trail system, the management plan established a clear policy: "…, it will be necessary to provide many more trailside shelters than now exist." [15] Funds from the Public Works Administration (PWA) had been allocated for additional trailside shelter design and construction by October 1938, with plans and sites selected by December of that year..[16] The CCC completed the first new shelter constructed after creation of the Park at Soleduck Falls (Canyon Creek) in August 1939, using a design that was larger and more formally rustic than had ever appeared before. .[17] (See Figure No. x-6) Two more shelters of this same design were completed at Moose Lake (sometimes referred to as Grand Lake) and Hoh Lake in October 1939.[18]

Period IV: 1941 to 1951: Compact Design

The United States entered World War II in December 1941. For the next three and half years, the park and park staff was consumed with the war effort, supporting the Aircraft Warning System (AWS) sites and other military support programs. The AWS was disbanded 1 June 1944, six days before D-Day.[19] As a result, the administration could now refocus on park issues, with some of the most pressing being recreational and sanitation improvements to many of the backcountry sites.

By late 1948, plans for new trailside shelters had been completed and materials placed on order. In September 1949, two new shelters had been constructed at Lake Angeles and two at Glacier Meadows. These new shelters were much simpler, smaller, and lower in profile than the older Forest Service shelters. The public reaction was very favorable: "Compact and rugged as their surroundings." "Privacy for small groups appreciated." "Better than the larger type shelters." "Best seen on tour of U.S." The following month a shelter was completed at Lunch Lake (Seven Lakes Basin) and a replacement shelter started at Sol Duc Park. In May 1951, Superintendent Macy organized a three-man crew specifically to restore three shelters damaged by flooding in the Elwha Basin and to construct new shelters elsewhere in the Park.[20] The Wilder Shelter was completed in July 1951.

These new shelters were a radical change from previous shelter design. Nearly a third smaller in floor area than the older Forest Service shelters and half the size of the elaborate rustic shelters erected by the CCC at Soleduck Falls (Canyon Creek), the shelters consisted of a simple three-sided log lean-to, with a shallow shed roof and dirt floor. They were minimal in nature, less intrusive to the landscape, and designed for recreational use. NPS hoped that the solid log walls would reduce the vandalism of the shake-covered sidewalls that had plagued many of the early Forest Service shelters.[21] These compact, modest structures were located at popular

camping locations to serve the ever-increasing number of backcountry visitors.

Period V: 1952:

In the fall of 1951, Fred J. Overly became Superintendent. He continued the policy of shelter construction, but the shelter design was altered. This alteration represents another phase in the continuing evolution of a recreational trailside shelter policy within Olympic National Park. Bear Camp shelter is the only extant shelter left of this particular design from that 1952 construction.[22] It represents the second design variation of a new shelter generation constructed by the National Park Service in the late 1940's and early 1950's to specifically address the increase of national recreational activity following World War II.

Building upon this new-founded support for smaller shelters, the 1952 construction program borrowed strongly from two strikingly similar designs. First, there was a plan published in the National Park Service 1938 publication, *Parks and Recreational Structures*, by Albert H. Good.[23] In Part II of this publication, sub-titled Recreational and Cultural Facilities, Plate F-7, is the plan for a trailside shelter called the Adirondack Shelter. The second source was the 1934 Forest Service plan for recreational shelters (See Figure No. 2). Both these plans show a structure remarkably similar to the Bear Camp shelter. It is a three sided, log construction, with an open front. The gable roof has a long slope to the rear, with a shorter overhang at the front. The Bear Camp shelter is similar in design to the National Park Service plan, but is only 12' x 12', which more closely follows the Forest Service design. It also has vertical logs to support the front purlin of the overhang and vertical log pairs to stabilize the front section of the sidewalls. In a curious deviation from past shelter design, this shelter design has the short front roof slope projecting past the ridgepole for smoke ventilation. In addition to following this new standard design, bunks were installed in the shelter as originally recommended in the 1938 management program for the new national park.[24] Visitors to the backcountry often cut nearby tree

boughs for bedding, resulting in serious damage to the surrounding trees. Providing bunks fitted with split cedar or spruce was thought to reduce such damage. Bear Camp still retains split cedar bunks.

Figure No. x: 7: Bear Camp Shelter, built 1952.

This trailside shelter followed the successful earlier compact design of 1949 with its smaller and more compact character, but incorporated stylistic elements of both Forest Service and National Park Service accepted plans. It laid the foundation for the final variation of trailside shelters of the 1960's.

Period VI: 1953 to 1963: Final Design

The National Park Service embarked on its last trailside shelter construction program in the early 1960's. Happy Hollow Shelter, completed in August of 1963, was one the last shelters built in the Park. [25]

Following World War II, recreational interest in the National Park System had grown dramatically. Visitation increased nearly 150%, going from 22 million in 1946 to 50 million by 1955. Park facilities were overwhelmed, and negative public reaction resulted in the creation of a new 10-year

program to provide improved services. The program was called "Mission 66," intended to culminate in 1966 on the 50th anniversary of the founding of the National Park Service.[26] One of the many aspects of Mission 66 was the formation of the Student Conservation Association (SCA) in 1957. Created as a non-profit organization, the SCA provided student volunteers to work on park improvements. Over the course of the next four summers, beginning in 1960, SCA built five trailside shelters within Olympic National Park, two in the interior and three on the coast. None survive today.

Apparently, there was a demand for more trailside shelters than the volunteer SCA program could provide. In the summer of 1963, park administration decided to build fifteen new shelters. Day labor was hired, and starting in June of 1963, eight new shelters were erected in the backcountry by October, including Happy Hollow shelter.[27] The design is attributed to a sketch "on the back of an envelope" by the park Division Chief. The work was done with chainsaws, not utilizing any mill attachments, but snapping chalk lines and free hand ripping out the timbers. Most of the shelter roofs were constructed of 42" hand-split shakes, unlike the 36" used most frequently on the earlier Forest Service shelters. These shelters continued the pattern of the previous period by having the front roof slope projecting past the ridgepole. [28]

The seven remaining planned shelters were never completed, most likely due to the passage the following year (1964) of the Wilderness Act, a policy that would forever change the shelter program.

Though no new shelters were built for the rest of the decade of the 1960's, park crews and the Student Conservation Association continued maintenance work on many of the existing shelters. In 1971, the Youth Conservation Corps did assist the park in constructing Toleak Point shelter, the last shelter built in the park.

Thus, the shelters of 1963 represent the fourth and last variation of a new shelter design constructed by the National Park Service from the late 1930's

to early 1960's to specifically address the increase of national recreational activity.

Figure No. x: 8: Happy Hollow Shelter, built 1963.

The 1960's shelter design had the same low profile shape of the previous design, but was slightly taller with a larger floor area, returning to the 14' x 14' footprint similar to the early Forest Service L-4 shelters. It was a three-sided structure with an open front. The gable roof had a long slope to the back, and a short overhang at the front. It varies though from the previous design generation in the way it was constructed. The lower section of the three exterior walls consisted of vertical log slabs supported by a round log sill. The log slabs rose to a height of the back wall on all three sides. The gable end walls were then constructed of stacked 6" x 6" chain-sawn timbers, trimmed to form the slope. The 7" x 7" ridge beam and the 7" x 7" beam over the front opening were notched into the gable walls. 5" x 5" sawn rafters spanned from ridge on both slopes. 4" x 4" sawn planks were laid over the rafters for shingle nailers. The shingles were 42" long. Similar to the previous design, upright logs support the front opening beam and the front sidewalls were stabilized by engaged log slabs.

Conclusion

The historic trailside shelters of Olympic National Park remarkably represent the development and evolution of both the Forest Service and National Park Service designs. Beginning prior to the establishment of standard plans, and going through a series of modifications, the shelters show the response of the administrations to the recreational and management needs of the Park.

[1] Lewis, James G., The Forest Service and The Greatest Good, Forest History Society, 2005, p. 78.
[2] Ibid., p. 81.
[3] Rough draft Memo for Fromme, signed P.S. L., 1912. On file, RG95, Records of the US Forest Service, Olympic National Forest, History Files ca. 1899-1990, Box 8, R.L. Fromme Papers, Folder; Correspondence.
[4] Tweed, William C., A History of Outdoor Recreation Development in National Forest: 1891-1942, Clemson University, Department of Parks, Recreation, and Tourism Management, c. 1970, page 9
[5] Ibid., page 9
[6] Cleator, F. W., Recreational Facilities of the Olympic National Forest and Forest Service Plan of Development, *University of Washington Forest Club Quarterly* 10:2 (1936-1937)
[7] Ibid.
[8] Ibid.
[9] Olympic National Forest, *Recreation Atlas, Olympic National Forest*, RG95, Records of the US Forest Service, Olympic National Forest, Map Case 5, NA-PNR, Seattle; F. W. Cleator, Report on Proposed Olympic Primitive Area, 1930.
[10] U.S. Forest Service Building Plans, 1934, North Pacific Region, page 14,
[11] Report from Preston P. Macy, Asst. Chief Ranger, to OA Tomlinson, Supt. Mount Rainier National Park, 2 Sept. 1935; Superintendent's Narrative Reports, Accession No. OLYM-420, Catalog No. OLYM 18242, Box 1, Olympic National Park Archives.
[12] Ibid., November 2, 1935.
[13] Donald Houk stated that he and Blaine Dalton made repairs to Anderson Pass Shelter in 1990 they installed the curved knee braces; when they got to the shelter, there were no knee braces on the building and "We just threw (them) in as part of the fun of doing the shelter,…"; Oral Interview discussion with Ted Sullivan, Jack Nattinger and Donald Houk by Paul Gleeson, September 27, 2007.
[14] Report from Preston P. Macy, Asst. Chief Ranger, to OA Tomlinson, Supt. Mount Rainier National Park, 3 Sept. 1938; Superintendent's Narrative Reports, Accession No. OLYM-420, Catalog No. OLYM 18242, Box 1, Olympic National Park Archives.
[15] Statement of Controlling Development Policies, July 1938, OLYM-621, p. B-3, Olympic National Park Archives
[16] Ibid, October 3, 1938 and December 3, 1938.
[17] Ibid, September 12, 1939.
[18] Ibid, November 3, 1939.
[19] Ibid, June 12, 1944.
[20] Report from Preston P. Macy, Asst. Chief Ranger, to OA Tomlinson, Supt. Mount Rainier National Park, May. 1951; Superintendent's Narrative Reports, Accession No. OLYM-420, Catalog No. OLYM 18242, Box 1, Olympic National Park Archives
[21] Ibid, 7 August,1947.

[22] Date of 1952 from List of Classified Structures (LCS), office of Paul Gleeson.
[23] Good, Albert H., Park and Recreational Structures, published by the National Park Service, 1938.
[24] Statement of Controlling Development Policies, 1938, p. B-4, Trailside Shelter policy.
[25] Superintendent Doerr's monthly report for September 1963; Superintendent's Narrative Reports, Accession No. OLYM-420, Catalog No. OLYM 18242, Box 1, Olympic National Park Archives
[26] McClelland, Linda Flint, Building the National Parks, John Hopkins University Press, 1998, p. 463.
[27] See Superintendent's monthly reports from June 1963 to October 1963; Superintendent's Narrative Reports, Accession No. OLYM-420, Catalog No. OLYM 18242, Box 1, Olympic National Park Archives
[28] Personal correspondence from Russ Dalton, retired NPS staff, and Paul Gleeson, February 8, 2008, on file at ONP archives.

V.2.1
Trailside Shelters
General Conditions

This section of the report consists of the condition assessment and evaluation of the Trailside Shelters. Assessment addresses physical conditions of the shelters based on field observations conducted by the NPS staff and consultants over the past several years. Evaluation is a discussion of treatment options and recommendations.

Conservation Goals

The basis of judgment for evaluating the shelters is a Conservation policy of preserving the historic shelters for the continued dual-purpose of emergency and inclement weather use by both recreational users and park maintenance staff. An important aspect of such a policy is to understand that cultural management of the shelters includes both the individual structures and the shelter system as a whole. The underlying principal of this policy is the desire to preserve both the original design and materials of these historic structures in their landscape setting and the relationship of the shelters within the trail system, all the while addressing life safety issues within a long-term maintenance program. Such preservation measures may include limited restoration of deteriorated material and replacement in-kind of material and assemblies that have reach their service life. In addition, there is a discussion on some restricted structural intervention for certain shelters in heavy snow locations. The goal of these measures and policy is to comply with the provisions of the Olympic National Park General Management Plan (approved August 8, 2008 • See Appendix 1) and be in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties.

Elements of Significance and Character Defining Features:

Within the goal of preserving the shelters, the concept of significance plays a vital role in establishing maintenance policy. For historic structures, significant elements are those qualities of the building that provide historic meaning and understanding.

There are two areas of significance that need to be recognized and addressed in preserving the trailside shelter. The first concerns the siting of the shelter and its historic relationship with the landscape. The second concerns the actual structure itself.

For the earlier period trail shelters constructed by the Forest Service, significant site features may be the orientation of the shelter to prevailing storm patterns, its location on the landscape in terms of providing space for stock, its relationship to water sources, and the surrounding vegetation. These early shelters were practical structures for working staff. In addition to removal of vegetation immediately around the shelter for structural preservation (discussed later in this section), the larger landscape aspects around the shelter should be reviewed as part of a preservation planning process in terms of more extensive vegetation removal, connection to natural meadows, and views of clearings. Historically, the areas around the shelters would have been kept clear from stock movement and the gathering of fire wood.

For the later shelters built by the National Park Service that were more orientated towards recreational users, elements of significance landscape siting would include view sheds and vegetation management to enhance or frame such a view. Maintaining historic view sheds could involve removal of selected areas of undergrowth or complete removal of trees. [1]

Vegetation removal immediately around the shelters is crucial to preserving the base logs of the shelters. Removal of second growth trees in the immediate vicinity of the shelters may be necessary to increase air circulation and decrease the potential for storm blow-down damage.

In terms of significant character defining elements of the shelter structures, these are embodied in the rustic form of the original log/beam design and construction, the use of often oversize structural members with their expression of strength and scale, the universal feature of the offset roof slopes with the distinguishing "roof combing", and the use of wood shakes for the sheathing and roof. Replacement in kind is critical in retaining the historic qualities of the shelters. Where the wood shakes were replaced on some shelters with board and batten, this pattern may be considered a feature that has gained significance over time and should either be retained or returned to the original wood shakes. Improvements recommended for increased snow load capacity (as presented later in the section) need to designed and constructed of similar material to the existing frames and blend in a form.

Last, the shelters ca not be removed from the context as being part of a trail system. The concept of connectedness of shelters along a trail at a series of regular interval is an important character in regards to the early Forest Service shelters. There was thought and purpose to their placement and at least in one location within the Park an historic series of shelters should be preserved.

General Observations:

There are several universal conditions noted for nearly all the shelters. These will be addressed here under a general discussion with the understanding that they apply to all the shelters in some degree. Later, in the discussion of individual shelters of the various developmental periods, such conditions will be reference to this section.

Site Conditions:

Assessment

It was observed in most instances that the site grade around the shelters has grown over time with forest duff and debris. This accumulation of material has raised the grade around the bases of the shelters such that in many instances the lower portion of the sill logs actually sit below grade. Many shelter frame assemblies are suffering sill log deterioration from this condition. This build up of material has often reshaped the surface drainage around the structures, causing water to course into and at the base of the shelters. Drainage is also affected by the domed fire hearths found in front of many shelters and the often seen depressions inside the shelters. Around the shelters, one often finds a substantial growth of brush and shrubs. This growth both feeds off the moisture and retains this surface moisture close to the base of the building.

Evaluation.

The shelter structures are designed for the sill logs of the frame to bear on pier stones set in the ground. The stones were placed to raise the sill logs at least three (3) inches above the surrounding grade. The grade around the base of the shelters should be removed to expose the stone piers and allow free air movement under the sill logs. Where sill logs are just beginning to deteriorate (say with only one (1) inches or less

deterioration on the surface), this measure should allow the log to dry and reduce the rate of deterioration, and in some instances allow retention of the log instead of replacement.

In lowering and regrading around the base of the shelters, it is critical that contours be established to collect and move surface moisture down and away from the shelters. Most likely, this will require formation of surface swales. These swales do not necessarily need to be ditches, but rather broad, shallow surface contours with a positive drainage to the downslope of the site. In some instances, the elevation of outside fire hearths will need to be altered and interior depressions filled in.

Where vegetation has grown around and against the shelters, this vegetation both holds moisture close to the shelter and prevents airflow for drying.

Recommendation:

1. Regrade site at each shelter for positive surface moisture drainage.
2. Lower site grade to a minimum of three (3) inches below bottom of sill logs. (an option would be to raise the pier stones when replacing a sill log, thereby raising the shelter to account for duff build-up)
3. Remove all vegetation around the shelter a minimum of five (5) to seven (7) feet from shelter walls.

Structure

Assessment

One of the great natural phenomena of the Olympic Peninsula is the extraordinary variation in precipitation. The following map reflects locations with less than 20 inches of precipitation per year to over 270 inches per year.

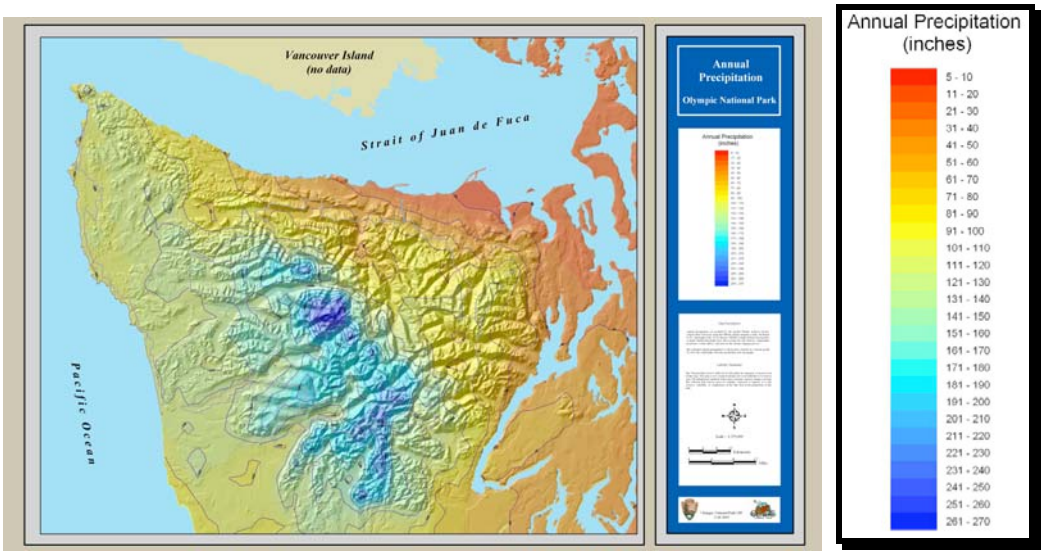


Figure No. 1: Annual Precipitation map for Olympic National Park. Shelters at the higher elevations can experience significant snow accumulations.

Historically, trail shelters have often been lost to heavy snows. Some of this is due to age and fatigue, but some is also due to the character and design of the typical older style trail shelter structure from Period I.

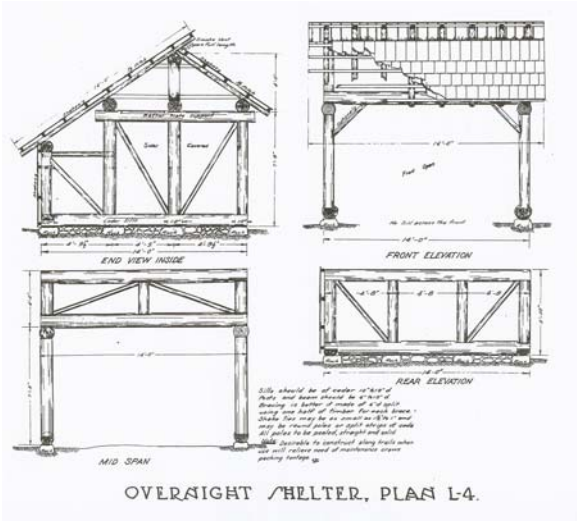


Figure No. 2: The Standard Plan L-4 of the Forest Service shelter from 1934 Recreational Handbook.

The older style trail shelters are based on the standard plan L-4 as seen in Figure No. 2 above. Shelters of this style at Olympic National Park are constructed either of Cedar or Douglas Fir. Depending on the type of material, the ability to withstand snow loads varies.

If the L-4 shelter is constructed of Douglas Fir as shown above, and the lowest structural values for DF are used in an analysis (poor logs are used), and loaded with a very dense snow, it can support only about 9 inches of snow before the back center beam is over stressed. If the beam is braced with either knee braces or a central pole, then the structure can support four (4) feet of snow. In the case where snow exceeds four feet, all cross beams would need additional support, and the structure would be limited to a maximum of seven (7) feet of snow due to the size of the rafters.

If the L-4 shelter is constructed of Cedar as shown above, and the lowest structural values for Cedar are used in an analysis, and loaded with a very dense snow, it can support only about 1 inch of snow before the back center beam becomes over stressed. If the beam is braced with either knee braces or a central pole, then the structure can support four (2) feet of snow. In the case where snow exceeds two feet, all cross beams would need additional support, and the structure would be limited to a maximum of four (4) feet of snow due to the size of the rafters.[2]

Evaluation

Based on the precipitation map, there are places in the Park where shelters receive snowfall in excess of the structural limits of the structures as analyzed. Shelters sometimes survive because the snow is less dense and the actual logs used were of superior grade. In other cases, the insertion of bunks in the shelters involved additional vertical supports, which in turn actually increases the capacity of the frame. But under severe snow conditions, the standard shelter structure, without bunk frames, is susceptible to failure.

In those shelters where bunks exist, maintaining the bunk frame uprights under the beams of the frames will be especially beneficial for long-term preservation.

For those shelters located in areas of average heavy fall, temporary shoring could greatly enhance the survival rate of these historic shelters. Installed in the fall and removed in the spring, such temporary shoring though would be an added annual maintenance item, placing further strain on an already burdened staff. In these instances, consideration should be given to rehabilitating the shelters with historic bunk designs. Where the bunks are missing, they should be restored with a support column under a cross beam. Where present, modify existing design by adding additional vertical supports to overhead beams.

In both instances, depending on snow depth of location, permanent additional supports will be needed at the front beam.

Recognizing such conservation measures affect the historic character of these select shelters (ones in heavy snow locations), they enhance the long-term survival of the historic structure with minimal intervention. Properly documented, these measures are a reasonable treatment for the historic shelters.

Recommendation

1. As part of annual shelter maintenance for those shelters found in areas of heavy snow accumulations, and which have bunks frames, inspect all interior column supports, Insure they are sound and firmly in place. Repair or replace any deteriorated members.

2. For those shelters in heavy snow locations without bunk frames, install new frames and bunks for additional support.

3. For all shelters in heavy snow locations, install additional supports under the front beam.

Roofing:

Assessment

The roof of the shelters is universally of cedar shake. In areas of dense timber the roof will accumulate needle duff, twigs, and cones over the course of a year. This material then encourages moss growth. The layer of debris and moss will have a tendency to retain and hold moisture.

Evaluation

While recognizing the exceedingly wet climate on the western slopes of the Park, the yearly buildup of this material accelerates the deterioration of the roof shakes. Though rate and degree of accelerated deterioration is difficult to quantify due to site conditions (wind currents, sunlight, etc.) and the vagaries of annual climate cycles, the reduction of shake surface exposed to drying reduces long-term service. A yearly removal of this debris would increase the effective durability of the shakes, and increase a beneficial degree the service life of this material.

When a shelter does need to be re-roofed, the build-up of moss and plant growth can be significantly retarded by installing an inter-ply sheet of zinc in one or two courses of shakes. Periodic debris cleaning of the roofs would still be required, but the zinc would prevent plant and moss growth from occurring.

Recommendation

1. As part of an annual maintenance program, sweep the shake roofs of accumulated debris and moss.
2. Consider zinc inter-ply sheets during re-roofing projects.

[1] Former NPS employee Jack Nattinger recalls in the 1950's that district ranger Jack Broadbent wanted to build shelters with a view and would go to the site of a new shelter and selected the site himself, and then have the carpenter build the shelter in a specific direction; see Oral Interviews with Jack Nattinger and Ted Sullivan by Paul Gleeson, NPS, September 27, 2007.

[2] See structural analysis by AHJ Engineers in Appendix 3 of this document.

V.2.11
21 Mile Shelter

Introduction:

Constructed in 1931, the 21 Mile Shelter is located on the north fork of the Bogachiel River approximately 18 miles east of the Bogachiel River trailhead. It was last evaluated in August, 2006.

Similar to the other shelters of this period, 21 Mile Shelter is an early variation of the Forest Service L-4 plan of 1934. The primary variation consists in the configuration of the diagonal bracing system of the main frame and the use of squared timbers.

Figure No. 1: 21 Mile Shelter. The image on the left was taken in 1998, while the image on the right was in 1999.

General Discussion:

Over the winter of 1999, 21 Mile Shelter collapsed. The cause appears to have been a combination of being in poor condition and heavy winter snow. The shelter had been assessed in 1998. At that time, it was noted that all the sill logs were rotted and the structure was beginning to lean and rack to the east.

During the 1998 assessment, basic dimensions of the structure were taken and the frame system well recorded. The sill logs were 16" diameter fir, hewn flat on the bottom and resting on stone piers. The primary frame members were 8' to 10" fir logs. The purlins were cedar logs, while the ridge, rafters, and shake nailer were split cedar. The shakes on the walls and roof were 36" cedar.

The design is a variation of the Forest Service L-4 plan. As seen in Figure No. 2, the principal variation is the sidewall diagonal framing and the un-walled bay on the sidewalls.

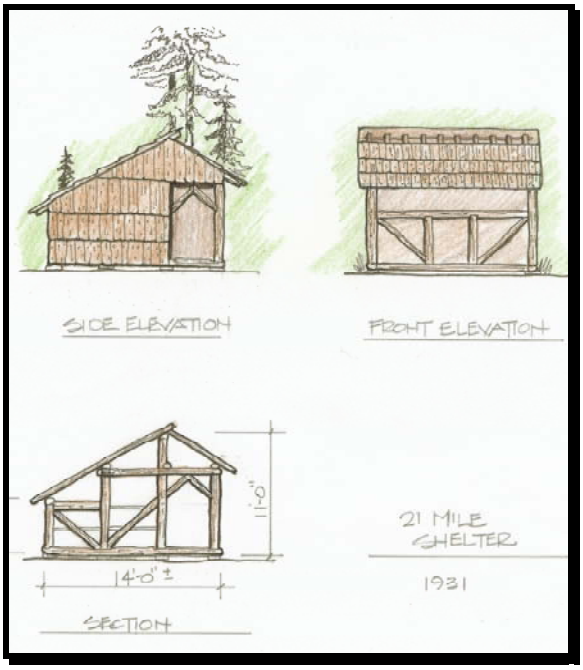


Figure No. 2: A sketch of the 21 Mile shelter showing the diagonal sidewall framing and its relationship to the open side bay.

In October of 1956, a list for needed trail shelter repairs was made to the Chief Park Engineer. Within that list, it was noted that 21 Mile Shelter needed a new roof, 4 bunks, a garbage pit, and a toilet. [1] When the 1998 assessment was made, the shelter did not have bunks. It is unknown if bunks were ever installed in this shelter, but if it is repaired, some

consideration should be given to installing bunks as a method for strengthening the roof load capacity.

Given the measurements, description, and the photographic evidence from the 1998 assessment, the shelter could be rebuilt to meet the Secretary's Standards.

V.2.12
North Fork Soleduck Shelter

Introduction:

Constructed in 1932, North Fork Soleduck Shelter is located on the north fork of the Soleduck River approximately 9.5 miles east from the end of Upper Soleduck Road. It was last evaluated in August, 2006.

Similar to the other shelters of this period, North Soleduck Shelter is an early variation of the Forest Service L-4 plan of 1934. The primary variation consists in the configuration of the diagonal bracing system of the main frame and the use of squared timbers.

Figure No. 1: North Fork Soleduck Shelter. These images were taken in 1998, showing the poor condition of the roof and deteriorated sill logs.

General Discussion:

At time of the 1998 assessment of the shelter, it was advised that the shelter needed extensive work including a new shake roof and roof structure,

regrading the site, rebuilding the back timber frame wall, and replacing the sill logs.

During the 1998 assessment, basic dimensions of the structure were taken and the frame system well recorded. The sill logs were 18" diameter, hewn flat on the bottom and top, resting on stone piers. The primary frame members were 12" logs. The rafters and purlins were fir logs, while the shake nailers were split cedar. The shakes on the roof were 40" cedar. The sidewalls were two courses of cedar puncheon.

The design is a variation of the Forest Service L-4 plan, the most notable difference being log knee braces at each cross bent, not only just at the front purlin.

In the spring of 2000, a work project was planned to make needed repairs to the structure. It was extensive in its scope:

- Label all salvageable material
- Dismantle the shelter
- Excavate upslope berm to grade out 3 to 4 feet from structure for efficient drainage
- Set new sill logs on 12" rocks beneath all uprights and corners; treat all end grain with wood preservative
- Install new and salvaged uprights ad rafters
- Draw knife shake nailers on 3 sides for "tooled" appearance
- Install double layer of 48" barn shakes with 36" exposure and 6-12" ridge comb
- Install new cedar punchion sidewall lower course and back wall
- Rebuild cedar bunks

In the November of 2000, the above scope of work was executed. The site was highly recontoured for positive drainage, the frame repaired, a new shake roof installed, new cedar siding installed, and the bunks rebuilt. (See Figures No. 2 and 3)

Figure No. 2: North Fork Soleduck Shelter after 2000 rehabilitation.

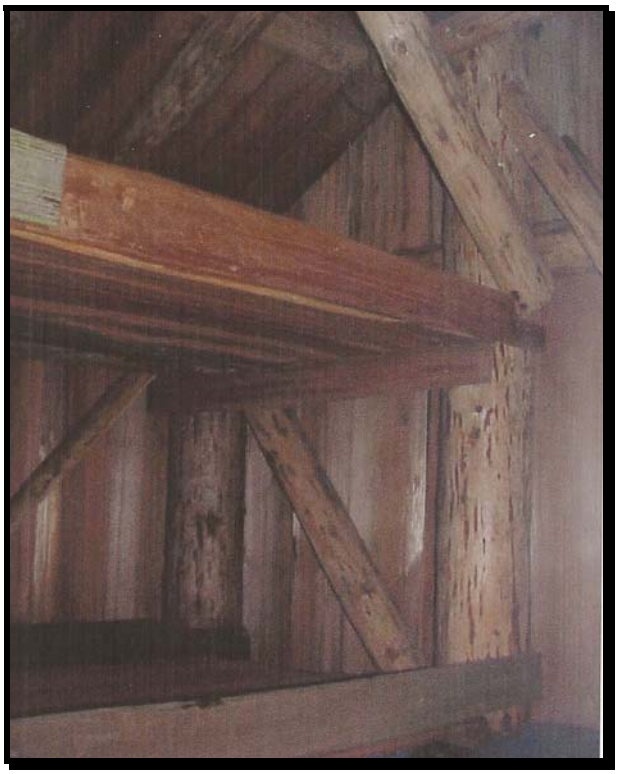


Figure No. 3: Rebuilt bunks and frame.

From the record photographs, the work seems to have been well executed. The shelter was assessed in 2006 and no traces of deterioration or roof leakage were found. Vegetation was found around the base of the building and removed. The shelter was described as being in "very good condition". Applying the general recommendations of periodically maintaining the site grading, cleaning the roof of debris and checking the integrity of the frame should allow the shelter to remain in good condition for many years.

[1] *Memo to Chief Engineer, Trail Shelter - Needed Repair*, October 1956, Paul Gleeson Shelter files, OLYA.

V.2.13
Period II: Individual Shelters • 1934 to 1938
National Park Service and the National Monument

General Description:

Only one of the original four historic shelters constructed by the National Park Service remain from this period: Anderson Pass (1934). Home Sweet Home (1935), and Low Divide [Renegade] (1935) have been lost to weather and are not scheduled to be replaced. These shelters had similarities in style with the Forest Service Standard Plan L-4, but were larger, and had some rustic details more associated with National Park Service design standards. The shelters were nearly 19 feet wide, and varied from 14 to 20 feet deep. They were framed of peeled logs and retained the offset roof slopes. The largest, Anderson Pass Shelter was twice the size of the early Forest Service shelters. Two of the shelters have curved logs for knee braces, while one even has exposed beam tails. While both of these could be interpreted as design details characteristic of the early National Park Service rustic style, the curved knee braces were actually installed by Park Service maintenance personnel in 1990. Unlike the earlier Forest Service Shelters, all these shelter utilized board and batten for all or portions of the exterior siding

V.2.14
Anderson Pass Shelter

Introduction:

Anderson Pass Shelter is located on the ridge divide between the Dosewallips and Quinault river drainages, about nine miles west of the Dosewallips Ranger Station. It was evaluated in 1998, and suffered damage later that winter, along with a number of other shelters in the Park.

Anderson Pass shelter was a large shelter, measuring nearly 20 feet deep and eighteen feet wide. The primary frame was log and generally followed the concept of the earlier Forest Service design of being three bays deep with angle bracing. The front purlin of the rear bay has two extra support columns within the shelter. There is a wood floor thoughout the shelter with the rear bay section raised above the front two bays.

Figure No. 1: Anderson Pass Shelter. The image on the left was taken in 1998, while the image on the right was in 1999.

General Discussion:

During the winter of 1998-99, the Anderson Pass shelter suffered a partial collapse at the southeast corner. The cause appears to have been a combination of being in poor condition and heavy winter snow. The shelter had been assessed in 1998. At that time, there were some minor repairs that needed attention, one being repair of the east side rear roof sidewall overhang, which had collapse. Otherwise, the structure appeared in good condition. The earlier maintenance records to mention Anderson Pass shelter from 1956 only noted the need to replace two bunks. [1]

During the 1998 assessment, basic dimensions of the structure were taken and the frame system was recorded. The sill logs were 16" diameter fir, resting on grade, but with only minor deterioration.. The primary frame members were 8' to 10" fir logs. The purlins were fir logs. The rafters were fir poles, from 5" to 8" diameter, which is much larger than earlier Forest Service shelters. The exterior consisted of 1" x 11 1/2" rough sawn boards with 1 x 2 battens. The shakes on the roof were 32" cedar. There were no individual bunks, but rather the raised floor across the rear provides the sleeping platform.

Seven years after the partial collapse in 1999, a damage assessment was conducted in 2006. This time the west side roof overhang had broken off, the sill logs had significant rot, the front corner log columns had failed, and frame was racking to the SE. Substantial repair work was recommended.

Site:

(See General observations)

Recommendation:

Continued management of site grading for moisture management and sill log exposure required, as well as keeping site vegetation cleared; this was noted in both the 1998 and 2006 assessments.

Frame:

Based on the 2006 assessment, both the east and west side sill logs were substantially deteriorated. The front corner columns and braces were damaged beyond repair. It appeared the front purlin could be salvaged but the knee braces of the front columns required replacement, as did the first bay primary diagonal braces.

Due to a heavy snow location, consideration should be given to include an intermediate log column under the front purlin. A record photograph from 1984 (See Figure No. x-17) appears to show such an intermediate column.

Recommendation:

Replace east and west side 16” diameter fir sill logs.
Replace both front 10” fir corner column logs
Salvage front purlin log and reuse
Replace front bay 6” knee braces
Replace sidewall 6” diagonal frame brace
Provide an intermediate 10” log column under front purlin.

Sidewalls:

A portion of the east sidewall board and batten, and the associated intermediate nailers, had received significant damage that caused for their replacement. The rest of the exterior sheathing was felt to be in usable condition.

Recommendation:

Replace two 2 x 4 sidewall nailers, 18 feet long.
Replace eight 1" x 11 1/2" rough cut boards, minimum of 12 feet long
Replace eight 1 x 2 battens, 12 feet long.

Roof:

While rafters were thought to be reusable, all the shake nailer boards on the front roof slope required complete replacement due to the ends breaking off under snow load.

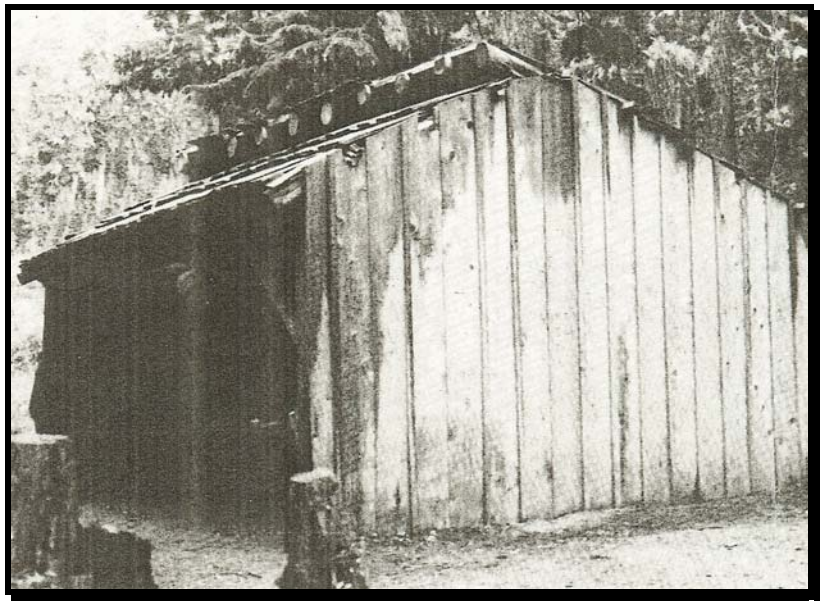


Figure No. 2: File photo of Anderson Pass Shelter taken for 1984 Cultural Resource Inventory; note the broken shake nailers at the sidewall.

In 1984, a cultural resource inventory was made of many of the historic building in Olympic National Park, including Anderson Pass Shelter. In the inventory photograph of Anderson Pass shelter, it clearly shows the shaker nailer boards broken off. They must have been repaired following this period as the 1998 photograph (Figure No. x-16) shows them broken off in a different configuration. Such repetitious damage leads to the questions as to whether the detail of the roof overhang should be altered. From the notes of the 1998 assessment, the overhang is 16" at 28" on center. That translates to a little over 3 square feet of cantilever load for each 2 x 5 nailer, laid flat. Assuming heavy snow is 30# to 40# per cubic foot, and a good winter has four feet of snow, this means each nailer has to carry 360 to 480 lbs of snow load. This exceeds the capacity of the 2 x 5 shake nailers. If the nailers are replaced "in-kind", the historical evidence indicates they will break again. To prevent this occurrence, the shake nailers could have their depth increased, their spacing shortened, the size of the overhang could be reduced, or the original size and spacing reinforced. All these options introduce a change in the original design or appearance of the shelter. The park architect should review this issue prior to work being undertaken. While not perfectly accurate from an historic perspective, the shortening of the spacing between the nailers, say by adding on an intermediate nailer (14" oc instead of 28" oc), would be the closest expression of the original design and allow the general appearance to be retained.

Some shakes could be reused, but additional shakes will be needed for repair of both gable end rakes.

<u>Recommendation:</u>

Park Architect needs to review alteration of original design of shake nailer boards; recommendation is to add intermediate nailers for snow load.
Provide additional shakes for rake repair

Interior:

In neither the 1998 or 2006 assessment, nothing was noted as needed for the large raised rear bunk platform at the rear of the shelter.

Shelter Conservation:

During the summer of 2008 extensive repairs were undertaken to address the issues noted in this condition assessment. The shelter is now in very good condition.

Figure No. 3: Repair work underway during 2006

V.2.15
Home Sweet Home Shelter

Introduction:

The National Park Service constructed Home Sweet Home Shelter in 1935. It is located roughly 13 miles above the Staircase Ranger Station on the north fork of the Skomomish river. It was reconstructed in 2000.

Like Low Divide, this first generation of trail shelter by the National Park Service was similar to the Forest Service L-4 plan of 1934, but increased in width to 18 feet. Unlike Anderson Pass, which is nearly 20 feet deep, this shelter was kept at 14 feet.

Figure No. 1: Home Sweet Home Shelter in 1998.

General Discussion:

In 1956, maintenance records noted that it needed "more shakes". [2]. An undated listing of shelters, but with references through the early 1970's, notes Home Sweet Home shelter was rebuilt in 1971 by the SCA. [3] In 1980,

an assessment condition was considered "excellent". [4] An undated shelter condition report, with discussion references after 1991, states that Home Sweet Home was again "rebuilt in 1991.

The shelter was assessment in 1998 assessment, with basic dimensions of the structure taken and the present condition recorded. The sill logs were 12" diameter, with only slight deterioration. The primary frame members and purlins were 12" logs. The rafters were 5" poles and the shake nailers 3 x 5 rough cut boards on the front roof slope, but 3 x 6 split cedar on the back roof. The walls were a combination of board and batten, and shakes.

During the 1998 assessment, it was noted that seven rafters had broken under snow load on the front roof. Similar to Anderson Pass, the shake nailer board eave extensions had also broken on the east side of the rear roof section.

During the winter of 1998-99, a tree fell on the shelter resulting in major damage.

Figure No. 2: Home Sweet Home Shelter in 1999.

Commentary:

Park records indicate the shelter has been "rebuilt" two times in the past thirty-seven (37) years. There is no record of what precisely was repaired, or whether there were any deviations from the original design. Given the shelter has a remarkable similarity to other historic shelter attests to a long park service tradition of "replacement-in-kind" policy for these backcountry structures.

There has been no recent assessment of Home Sweet Home shelter following its collapse in 1999.

Between the measurements, description, and the photographic evidence from the 1998 assessment, the shelter could be rebuilt to meet the Secretary's Standards. It is recommended consideration be given to adding additional interior support either through bunk frames and/or additional columns.

The present policy is not to rebuild the shelter at this time.

V.2.16
Low Divide (Renegade) Shelter

Introduction:

In the fall of 1935, the National Park Service built a trail shelter at Low Divide. Eighteen years later, in a completion report on shelter work for the summer of 1953, two structures (Bldg # 275 and Bldg # 209) were both noted as Low Divide Shelters. In records from the 1970's, the shelters were noted at "Low Divide # 1" (Bldg # 275 and "Low Divide # 2" (No bldg # noted). Low Divide # 1 was rebuild by the SCA in 1971. Low Divide # 2 was listed as built in the 1960's. A shelter report in 1974 uses the terms "Upper Low Divide", calling it the older style of shelter, and "Lower Low Divide", referring to it as the newer style of shelter. This 1974 report states the Lower shelter was in excellent condition and the Upper shelter in poor condition. By 1980, there was only one Low Divide Shelter, called "Low Divide Shelter, Lower", and listed in excellent condition. It received some minor repair in 1989. It was last assessed in 1998.

Figure No. 1: Low Divide Shelter in the summer of 1998.

General Discussion:

Like Home Sweet Home, this first generation of trail shelters by the National Park Service was similar to the Forest Service L-4 plan of 1934, but increased in width to 18 feet. Unlike Anderson Pass, which is nearly 20 feet deep, this shelter was kept at 14 feet.

The earliest NPS records of shelter maintenance show the shelter was reshaked in 1953, eighteen years following construction. By 1956, it was listed as needing four new bunks repaired. In 1971 it was "rebuilt" by the Student Conservation Program (SCP), and was listed in 1974 and 1980 surveys as being the "excellent' condition. In the 1998 assessment, the shelter was noted as being in good condition, the only deficiencies being some minor rot on the sill logs and serious dry rot in the base of the front column of the southeast corner.

Over the winter of 1999, Low Divide Shelter collapsed from heavy snow.

During the 1998 assessment, basic dimensions of the structure were taken and the frame system well recorded. The sill logs were 15" diameter fir, resting on stone piers. The primary frame members and purlins were 12" fir logs. The rafters were much larger than lower elevation shelters, being 6"to 8" in diameter. The roof shakes were 32" cedar.

Commentary:

In the case of Low Divide Shelter, between the measurements, description, and the photographic evidence from the 1998 assessment, the shelter could be rebuilt to meet the Secretary's Standards. It is recommended consideration be given to adding additional interior support either through bunk frames and/or additional columns.

The present policy is not to repair the shelter at this time.

[1] *Memo to Chief Engineer, Trail Shelter - Needed Repair*, October 1956, Paul Gleeson Shelter files, OLYA.
[2] *Memo to Chief Engineer, Trail Shelter - Needed Repair*, October 1956; Paul Gleeson Shelter files, OLYA
[3] Trail and Shelter summary list, n.d.; Paul Gleeson Shelter files, OLYA.
[4] Condition Record, November 1980; Paul Gleeson Shelter files, OLYA

V.2.17
Period III: Individual Shelters • 1938 to 1941
National Park Service and the CCC

General Description:

In June1938 a large portion of the Olympic National Forest and the Olympic National Monument were blended to form Olympic National Park. For the next three years, the Park Service matured an administrative framework for managing this new park. During this period, with funds from the Public Works Administration, it constructed three trailside shelters, all the same design. Only one shelter, Soleduck Falls (Canyon Creek), is still in existence.

V.2.18
Canyon Creek Shelter
(Soleduck Falls)

Introduction:

Soleduck Falls shelter is located approximately one mile east of the termination of the Sol Duc River road. It was evaluated in 1998 and 2006.

The design of the Soleduck Falls Shelter was a radical departure in style from the earlier Forest Service and National Park Shelters. It is "T" shaped in plan, with a rectangular main body (twelve feet by twenty-five feet) and a projecting cross gable covering a fire ring. The central opening into the shelter is only one third the length, creating small side alcoves at each end of the structure. The design appears though to have drawn on a small feature often associated with earlier shelters. The earlier shelter design did not formalize the location of a fire ring immediately in front of the shelter opening, but it is implied by NPS descriptions of shelters, "…the front is open to the friendly warmth and light of the campfire." [1] What NPS did was adopt this motif of a campfire at the open front of the shelter, but protecting it with gable roof incorporating a sheet metal hood for the climate conditions of the Olympics.

Figure No. 1: Soleduck Falls Shelter, May 2006.

Stylistically, the new shelter design had nothing in common with earlier shelters. The walls were solid log, peeled and drawn to a near perfect uniformity. Log extensions at the corners alternated in short and long lengths, each with a chisel end face. The foundation was concrete. It utilized a standard gable roof with extended plate logs and ridgepole to support an exterior log rafter. The gable end walls were notched vertical half logs with lancet ends.

This structure, while conceptually following the premise of the National Park Service Rustic Style of using native materials, was featureless in character. Everything was smooth, uniform, precise, and measured. It was not well received by the public.

General Discussion:

On August 29, 1938, less than three months after the creation of Olympic National Park, Assistant Landscape Architect Max Walliser arrived for duty as Resident Architect. [2] By December of 1938, the Landscape Architect had completed preliminary sketches for three different types of shelters and the Superintendent has selected sites for additional shelters. [3] Both the resident Engineer and the Landscape Architect visited the selected locations for the shelters to select siting and orientation. By July 1939, the Soleduck Shelter, constructed by the CCC, was 90 per cent complete. [4]

Little information shows up in NPS files on the maintenance of the shelter until the 1970's, when the shelter is listed by type as "P.S. Massive." It is noted as having twelve (12) bunks, the largest of any shelter before or after. Three years later, in 1974, a shelter inventory judges the shelter to be in poor condition and by 1980 maintenance records indicate "Renovation to be done." Maintenance repairs must have been undertaken sometime in the 1980's. The Cultural Resource Inventory Form for the shelter notes that new bunks were installed in 1981-82. The 1998 assessment it found to be in good condition. On site, one can see where crown ends of wall logs have had new ends replaced using epoxy connections. This work is assumed to be

associated with the repairs from a tree fall in 2002. By 2005 some serious areas of deterioration had developed.

Bearing on a concrete foundation, the wall logs vary from 9" to 12". They extend beyond the saddle notch corners with chisel face crown ends. A 12" ridge log supports 8" rafter poles with 2" x 6" rough sawn shake nailers. The front gable extension is supported on two 12" diameter log columns.

Site:

(See General observations)

Recommendation:

Continued management of site grading for moisture management and sill log exposure required, as well as keeping site vegetation and moss cleared from logs; this was noted in the 1998 assessment.

Walls:

The 2006 assessment found severe deterioration in the bottom two log courses on both the east and north elevations. Some minor surface deterioration was beginning to develop on the crown ends of several lower log courses, while at least two crown ends at the northeast corner had serious deterioration. Crown ends that had been previous replaced using epoxy were showing deterioration at the joint. Both log columns supporting the gable roof over the fire ring had serious deterioration at the foundation level.

Recommendation:

Replace two base log courses on east and north elevations; 9" to 12" diameter fir sill logs.
Replace both front 12" fir column logs

Replace deteriorated crown ends using scarf joint with stainless steel connections and wood plugs; use of epoxy is not recommended.
Use of borate insert rods to reduce deterioration is recommended for the column bases.

Figure No. 2: Soleduck Falls Shelter, May 2006; on left, note penetration of three inch knife blade into 2nd course log; on right, the base of the log column is developing deterioration.

Roof:

The west end of the roof frame and shakes were repaired in 2002 following a tree fall. The remainder of the roof was in good condition, the valley metal appeared sound, and there were no indications of leaks on the interior.

Recommendation:

Keep roof clean of duff and needles.

Interior:

Both the 1998 or 2006 assessments noted the interior was void of bunks, table or floor.

[1] Good, Albert H., Park and Recreation Structures, Part II, page 96.
[2] Report from Preston P. Macy, Asst. Chief Ranger, to O. A. Tomlinson, Supt. Mount Rainer National Park, 2 Sept. 1938, Superintendent's Monthly Reports, on file archives ONP.
[3] Memo from Acting Supt. To Supt. Tomlinson, 2 Dec. 1938; on file archives ONP.
[4] Memo from Acting Supt. To Supt. Tomlinson, 9 Aug. 1939; on file archives ONP.

V.2.19
Period IV: Compact Shelters • 1941 to 1951

General Description:

To address the increase of national recreational activity following World War II in the late 1940's and early 1950's the National Park Service planned and constructed the first design variation of a new generation of trailside shelters. There are only three extant shelters that represent this period.

By late 1948, plans for new trailside shelters had been completed and materials placed on order. In September 1949, two new shelters had been constructed at Lake Angeles and two at Glacier Meadows. These new shelters were much simpler, smaller, and lower in profile than the older Forest Service shelters. The public reaction was very favorable: "Compact and rugged as their surroundings." "Privacy for small groups appreciated." "Better than the larger type shelters." "Best seen on tour of U.S." The following month a shelter was completed at Lunch Lake (Seven Lakes Basin) and a replacement shelter started at Sol Duc Park.

These new shelters were a radical change from previous shelter design. Nearly a third smaller in floor area than the older Forest Service shelters and half the size of the elaborate rustic shelters erected by the CCC at Soleduck Falls (Canyon Creek), the shelters consisted of a simple three-sided log lean-to, with a shallow shed roof and dirt floor. They were minimal in nature, less intrusive to the landscape, and designed for recreational use. NPS hoped that the solid log walls would reduce the vandalism of the shake-covered sidewalls that had plagued many of the early Forest Service shelters.[1] These compact, modest structures were located at popular camping locations to serve the ever-increasing number of backcountry visitors.

These shelters represent a specific management period in the Park history that sought to provide trail shelters at popular backcountry locations, often in pairs. At the same time, the design sought to be more durable and require

less maintenance, more compact in character for small hiking parties, and less visible on the landscape.

V.2.20
Blue Glacier #1 Shelter
(Lower Shelter)

Introduction:

Blue Glacier Shelter # 1 was constructed in the fall of 1949 as one of the first of the new, compact shelters.

General:

The Blue Glacier Shelter #1 is a three-sided solid log structure measuring 10'-6" wide x 11' deep. The wall and sill logs measured 10" in diameter and rested on individual stone footings. The rear wall was only 3'-6" feet in height, while the front opening was six feet. The open end of the side walls were stabilized by a pair of vertical 6" diameter logs, which in turn also supported the front roof beam. Four 5"purlins spanned front to back along the slope of the roof. Eight 2" x 4" shake nailer boards crossed the purlins at 10" on center and were covered with 24" long sawn shingles.

The shelter suffered extensive damage from weather and was repaired during 2008.

Figure No. 1: Blue Glacier #1 Shelter following repairs, 2008.

V.2.21

Blue Glacier #2 Shelter

(Upper Shelter)

Introduction:

Blue Glacier Shelter # 2 was constructed in the fall of 1949.

Figure No. 1: Blue Glacier #2 Shelter, July 2004.

General:

The Blue Glacier Shelter #2 is a three-sided solid log structure measuring roughly 10'-6" wide x 11' deep. The wall and sill logs measured 10" in diameter and rested on individual stone footings. The rear wall was only 3'-6"feet in height, while the front opening was six feet. The open end of the side walls were stabilized by a pair of vertical 6" diameter logs, which in turn also supported the front roof beam. Four 5"purlins spanned front to

back along the slope of the roof. Eight 2" x 4" shake nailer boards crossed the purlins at 10" on center and were covered with 24" long sawn cedar shingles.

The shelter suffered extensive damage from weather in 2008 and is scheduled for repairs in the summer of 2009.

V.2.22
Wilder Shelter

Introduction:

Wilder Shelter is located on the upper reaches of the Elwha River near the mouth of Leitha Creek, roughly about 18 miles from the Whiskey Bend trailhead . It was last evaluated in August 2006.

Wilder Shelter is nearly identical to the two Blue Glacier shelter built during this period. It is a three-sided solid log structure measuring roughly 12' x 12'. The wall and sill logs measure 10" in diameter and rest on individual stone footings. The rear wall is only 4 feet in height, while the front opening is six feet ten inches. The open end of the side walls were stabilized by a pair of vertical 6" diameter logs, which in turn also supported the front 5" roof beam. Four 5"rafters spanned front to back along the slope of the roof. Eight 3" shake nailer poles crossed the rafters and were covered with 20" long hand-split cedar shakes. The floor is dirt and there are no bunks.

Figure No. 1: Wilder Shelter, August 2006.

The shelter maintenance files of 1970 record 4 bunks in the shelter and the surveys of 1974 and 1980 both list the shelter to be in excellent/good condition. Presently, the shelter is in very poor condition and needs total reconstruction.

Site:

(See General observations)

Recommendation:

Regrading of site for moisture management and sill log exposure required. Site vegetation should be cleared. The grade has grown with vegetation to the point that the stone footings for the sill logs are completely below grade.

Figure No. 2: Wilder Shelter, August 2006.

Log Walls:

The 10" diameter sill logs are completely deteriorated on all sides of the shelter. The wall logs are also in very poor condition. All of the wall

logs are deteriorated at the back corners, meaning every log in the structure will require replacement. The four front vertical log are all deteriorated at their base.

Recommendation:

Replace all sill and wall logs.
Replace the four vertical logs that stabilize the front ends of the sidewalls.

Figure No. 3: Wilder Shelter, August 2006.

Roof:

The roof is also in poor condition. The four rafters are deteriorated along the back wall, as are most of the shake nailer poles. The cedar shakes are heavily covered with moss and there are signs of leakage throughout the entire interior.

Recommendation:

The roof structure and shakes require complete replacement

Figure No. 4: Wilder Shelter, August 2006; the interior shows no sign of the four bunks records indicate to have been in the shelter in 1970.

Interior:

There is no sign of the four bunks noted in the 1970 survey. Verify if the shelter is in a heavy snow location; if so, some additional interior support is recommended. The restoration of the bunks would provide both lateral and gravity support for the roof and walls.

Recommendation:

Restore the four bunks to the shelter.

V.2.23
Period V: 1952

General Description:

Building upon this new-founded support for smaller shelters, the 1952-construction program borrowed strongly from a plan published in the National Park Service 1938 publication, *Parks and Recreational Structures*, by Albert H. Good.[1] In Part II of this publication, sub-titled Recreational and Cultural Facilities, Plate F-7, is the plan for a trailside shelter called the Adirondack Shelter. The plan shows a structure remarkably similar to the Bear Camp shelter.

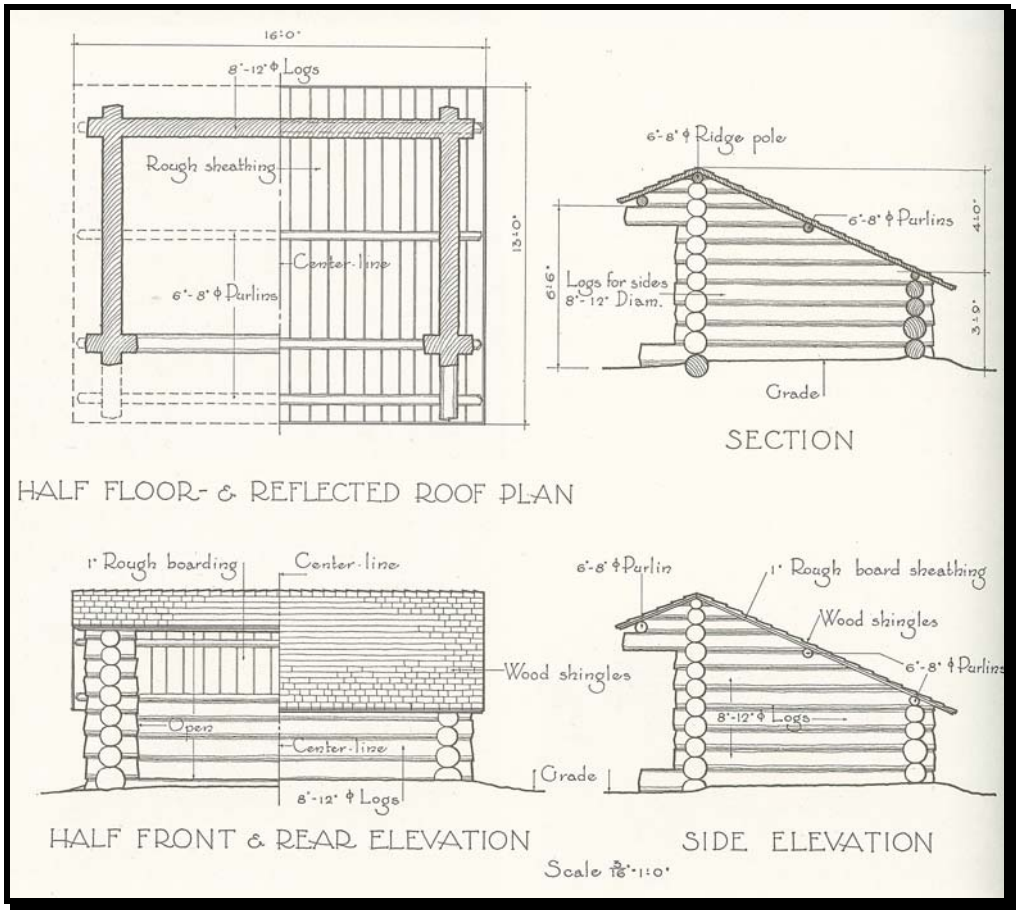


Figure No. 1: Adirondack Shelter from NPS 1938 publication

It is a three sided, log construction, with an open front. The gable roof has a long slope to the rear, with a shorten overhang at the front. The Bear Camp shelter is similar in design, and nearly identical in plan dimension. The plan dimension on Bear Camp Shelter have been turned 90 degrees from this design, making the roof narrower but more shallow in slope. It also has vertical logs to support the front purlin of the overhang and vertical log pairs to stabilize the front section of the sidewalls. The short front roof slope projects past the ridgepole for smoke ventilation. In addition to following this new standard design, bunks were installed in the shelter as originally recommended in the 1938 management program for the new national park.[2] Visitors to the backcountry often cut nearby tree boughs for bedding, resulting in serious damage to the surrounding trees. Providing bunks fitted with split cedar or spruce was thought to reduce such damage. Bear Camp still retains split cedar bunks.

This trailside shelter followed the successful earlier compact design of 1949 with its smaller and more compact character, but incorporated stylistic elements of a nationally accepted plan. It laid the foundation for the final variation of trailside shelters of the 1960's.

V.2.24
Bear Camp Shelter

Introduction:

Bear Camp Shelter was constructed in 1952. It is a three-sided solid log structure measuring roughly 12' wide by 16 ' deep. The wall and sill logs average 11" in diameter and rest on individual stone footings. The rear wall was only 4' 9" in height, while the front opening was six feet, and a ridge of 7. The open end of the side walls were stabilized by a pair of vertical 9" diameter logs, which in turn also supported the central roof purlin. The top three sidewall logs extend forward of the rest of the wall, supported on single log columns. These columns are most likely not original but installed for addition support of the front roof beam. Nine rows of rafters support split fir shake poles for the shake roof. The roof is combed at the ridge towards the rear of the structure.

Figure No. 1: Bear Camp Shelter.

Starting in the early 1950's the National Park Service installed aluminum roof on many existing shelters. This decision is attributed to new Superintendent Fred J. Overly. [3] Bear Camp most likely had an original metal roof. The shelter maintenance files note that in 1956 the aluminum roof needed to be replaced. (It was recounted that the metal roof leaked badly). [4] By 1970, a shelter survey noted the roof was now cedar shakes. The shelter surveys of 1974 and 1980 both list the shelter as being in good condition.

The most recent assessment of the shelter occurred in August of 2006, and significant deterioration was noted.

Site:

The grade along the back side of the shelter has grown over the years to cover most of the sill logs, allowing deterioration of most of the bottom of the walls.
(See General observations)

Recommendation:

Regrading of site for moisture management and sill log exposure required.

Sill Logs:

The large 11" sill logs all have serious deterioration, with the rear wall log completely gone and the rear corner sections of corner intersections of the side logs.

Recommendation:

All the sill logs need replacement and positioned on stone piers after the site has been regarded.

Walls:

The wall logs are all deteriorated at the two back corners, meaning every log in both the sidewalls and rear wall will need replacement. The present condition of the roof just does not appear to adequately protect these corners or the rear wall from moisture. The logs of rear wall have deteriorated to the point they are collapsing, creating sag in the roof.

Recommendation:

Essentially, all the wall logs up to the roofline will need to be replaced. The tapered sidewall logs appear to be salvageable. This work, though, will need to be coordinated with some changes in the design of the roof.

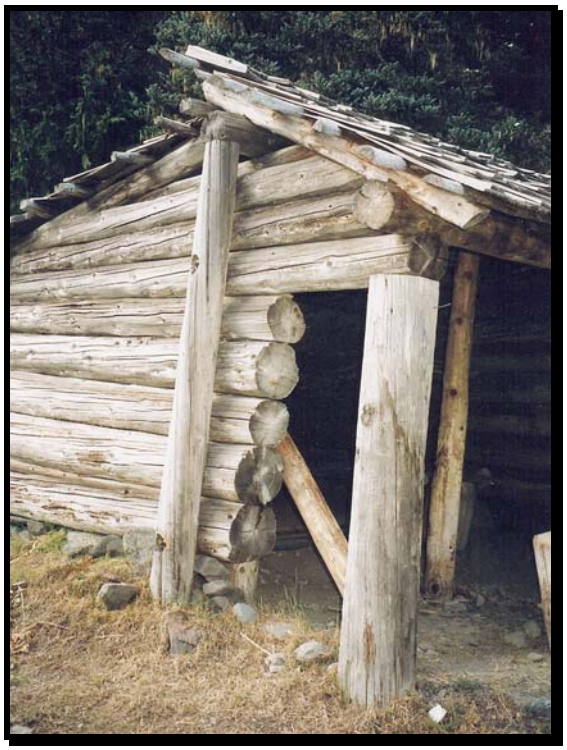


Figure No. 2: Bear Camp Shelter; upright supports are all deteriorated at base.

Frame:

The roof purlins appear to be reasonably sound, but the upright posts that brace the sidewalls and support the front roof beam are deteriorated at their base. Some newer appearing support columns are still solid. At the time of the last assessment the rafters were sound, but their end grain is exposed at the rear of the shelter and it is anticipated that some deterioration has occurred in these members.

Recommendation:

All the upright posts will need to be replaced.
Plans should include the potential for replacement of the rafters.

Roof:

The roof slope of the Bear Camp shelter is much shallower in slope than previous shelters. Perhaps this stems from the original use of a metal roof or a construction alteration to make the shelter have more depth for protection. Whatever was the reason, it created a roof slope that is problematic for a shake roof. The minimum code slope for a shake roof is 4/12 with an under-layment membrane. The shelter has a slope of 2.3/12. Even double coursed, such a roof assembly will almost surely leak. In addition, if in a snow zone, it will never shed the snow, adding to structural loading, and have ice-damming at the eave.

Most of the shake nail poles have broken off at their ends and must have originally extended out further for better protection of the sidewalls. The rear eave appears to have a reasonable overhang, but if ice-damming occurs significant moisture will fall on the back wall.

The current shakes are in poor condition, with many missing. They were laid as a sound single course, with a second course spaced intermittently over joints.

Recommendation:

The shelter will require a new shake roof. As originally constructed, the shelter appears to have survived in reasonably good condition until the 1980's, or roughly 30 years. Given the shallow slope of the roof, some leakage most likely was occurring during that period from ice-damming and heavy rain. If repaired as currently designed, one would anticipated a certain continuation of such leakage. To reduce the leakage, or eliminate it, an alternate approach would be to vary from the original design. This would include doubling the number of shake poles to carry any snow load on the rake over the sidewalls, install a solid 1 x board deck and a water-proof membrane on the deck, and then apply the shake roof. This is introducing a new characteristic to the shelter, but one that would increase the effectiveness of the weather envelope and reduce deterioration from ice damming.

Figure No. 3: Bear Camp Shelter rear roof slope; note lack of overhang at rake edges and interspaced shake pattern.

The question of such an approach is whether the benefits of the alteration (a more water-tight roof) offset the loss of a defining character element (seeing the underside of the shake roof from within the shelter). This would appear to be too much of an intervention of the original design. One alternate option would include doubling the shake nailers for snow load and to double course the entire shake roof. A second alternate option would be to restore the original metal roof. Modern metal roof normally have a minimum slope of 3:12, just slightly steeper than the shelter roof. Some specialty metal roof can go shallower but require technical experience to install. Installing just a standard metal roof would be difficult to insure a weather-tight roof unless one would incorporate a solid roof deck and a water-proof membrane under the metal roof. This option would then provide an historically correct roof and would given the greatest assurance of not leaking.

Interior:

There are four bunk frames with split cedar decks. The frames are in sound condition except for the east wall bunk, which is separated from the deteriorated wall logs.

Recommendation:

After the walls are repaired, reattach the bunk frames.

[1] Good, Albert H., Park and Recreational Structures, published by the National Park Service, 1938.
[2] Statement of Controlling Development Policies, 1938, p. B-4, Trailside Shelter policy.
[3] Oral Interview discussion with Ted Sullivan, Jack Nattinger and Donald Houk by Paul Gleeson, September 27, 2007.
[3] Ibid.

V.2.25
Period VI: 1952 to 1963

General Description:

Due to increasing recreational demand, in the early 1960's park administration decided to build fifteen new shelters. In January of 1962, as part of the Mission 66 master plan for the Park, a Visitor Use brief was prepared. In that brief under the section entitled "Preservation and Use of the Central Back County Mountain Wilderness", it was stated, "Shelters will be available for visitor use as an emergency facility (sic) for protection from the elements in extreme weather (This policy was restated in the 1978 Shelter Criteria Report). During other times, they will be available as a community facility (sic) for the common storage of food and supplies by all parties in the vicinity when more than one party is present. Appropriate regulations (sic) will be enacted and signs posted at each shelter to explain these uses and to prohibit the monopolizing of a shelter by one party when others are present."[1]

Figure No. 1: Elk Lake Shelter still has its sign as an "Emergency Shelter" from the policy developed in the Mission 66 Master Plan and restated in the 1978 Shelter Criteria Report.

Construction for the shelters was contracted out and starting in June of 1963, eight new shelters were erected in the backcountry by October. The design is attributed to a sketch "on the back of an envelope" by the park Division Chief. The work was done with chainsaws, not utilizing any mill attachments, but snapping chalk lines and free hand ripping out the timbers. Most of the shelter roofs were constructed of 42" hand-split shakes, unlike the 36" used most frequently on the earlier Forest Service shelters. These shelters continued the pattern of the previous period by having the front roof slope projecting past the ridgepole. [2]

The seven remaining planned shelters were never completed, most likely due to the passage the following year (1964) of the Wilderness Act, a policy that would forever change the shelter program.

Thus, the shelters of 1963 represent the last variation of shelter design in the Park. They also represent the fourth variation of a new shelter design constructed by the National Park Service from the late 1930's to early 1960's to specifically address the increase of national recreational activity.

The 1960's shelter design had the same low profile shape of the previous design, but was slightly taller with a larger floor area, returning to the 14' x 14' footprint similar to the early Forest Service L-4 shelters. It was a three-sided structure with an open front. The gable roof had a long slope to the back, and a short overhang at the front. It varies though from the previous design generation in the way it was constructed. The lower section of the three exterior walls consisted of vertical log slabs supported by a round or squared log sill. The log slabs or squared timbers rose to a height of the back wall on all three sides. The gable end walls were then constructed of stacked 6" x 6" chain-sawn timbers, trimmed to form the slope. The 7" x 7" ridge beam and the 7" x 7" beam over the front opening were notched into the gable walls. 5" x 5" sawn rafters spanned from ridge on both slopes. 4" x 4" sawn planks were laid over the rafters for shingle nailers. The shingles

were 42" long. Similar to the previous design, upright logs support the front opening beam and the front sidewalls were stabilized by engaged log slabs.

These new shelters, with their heavy timber walls and sawn roof members are more robust and stout than any of the previous National Park Service designs. The roof overhangs are deep and the walls solid. They were conceived to withstand both visitors and weather.

V.2.26
Elk Lake Shelter

Introduction:

Constructed in July of 1963, Elk Lake incorporated both full log, log slab, and sawn timber in its construction.

Figure No. 1: Elk Lake Shelter, July 2004.

Originally there were a pair of shelters of this design built at Elk Lake, noted as shelters #1 and #2 in some references and "upper" and "lower" shelters in other files. Both are included in the 1974 shelter survey as being in excellent condition. The November 1980 shelter survey lists only the "upper" shelter and that roof repairs were completed in the summer of 1980. In the 1994 shelter survey, it is recorded that the Elk Lake shelter #998 was destroyed in 1976 and the current shelter is identified as Bldg #999.

Site:

(See General observations)

The site is in an open clearing with a gentle side slope. Modest vegetation growth is present on the back wall and one side wall. The grade has grown against the uphill sidewall, covering the sill log and lower ends of the wall slabs.

Recommendation:

Regrading of site for moisture management and sill log exposure required. Site vegetation should be cleared.

Figure No. 2: Elk Lake Shelter, July 2004.

Sill Logs:

The sill logs are roughly 11" and are cut on three sides (round edge to the exterior). They bear on a rubble stone foundation. The sill logs on the uphill side and rear, being below grade are most likely deteriorated.

Recommendation:

Plan on replacing rear and one side sill logs.

Logs Columns and Uprights:

Large half log slabs stand vertical beneath the main ridge purlin. The inner slab bears on a stone footing while the outer slab bears on the sill and is scribed around the sill log. These slabs in turn are through bolted at the top of the vertical wall slabs.

At the front eave, two large log columns supporting the extended wall beam have knee braces to the front purlin. The columns bear on stone footings and appear to be sound, with perhaps only minor deterioration at their base.

Recommendation:

The half log slabs appear in good condition with the exception of the outer uphill sidewall where the grade has grown over the sill log. This will most likely have to be replaced.

Walls:

The walls are composed of vertical positioned log slabs to the rear eave height. They bear directly on the sill log. Above the rear eave height, the wall is made up of 6" x 6" solid beams shaped for the roof slope. The third beam up extends to the top of the front column.

Recommendation:

The wall members appear in sound condition. Some minor deterioration may be present on the uphill side, but not enough for the present to consider replacement.

Roof:

The roof is composed of a two primary cross purlins, one at the ridge and one at the front eave. Solid timber plates rest on the purlins and along the top of the wall beams. The plates in turn support squared shake nailers with a broad overhang at the rake and eaves. 42" shakes comprise the roof cover.

Recommendation:

The roof frame appears in good condition. The shakes (and perhaps the upper surface of the shake nailers) appear to be in poor condition and should be replaced.

Interior:

The four interior bunks appear to be in good shape.

Footnote:

During the winter of 2006 and 2007, a tree fall damaged Elk Lake Shelter. The shelter is scheduled to be rebuilt in the summer of 2009.

Figure No. 3: Elk Lake Shelter, October 2007

V.2.27
Twelve Mile Shelter

Introduction:

Constructed in August of 1963 on the North Fork of the Quinault River, Twelve Mile Shelter incorporated both full log, log slab, and sawn timber in its construction.

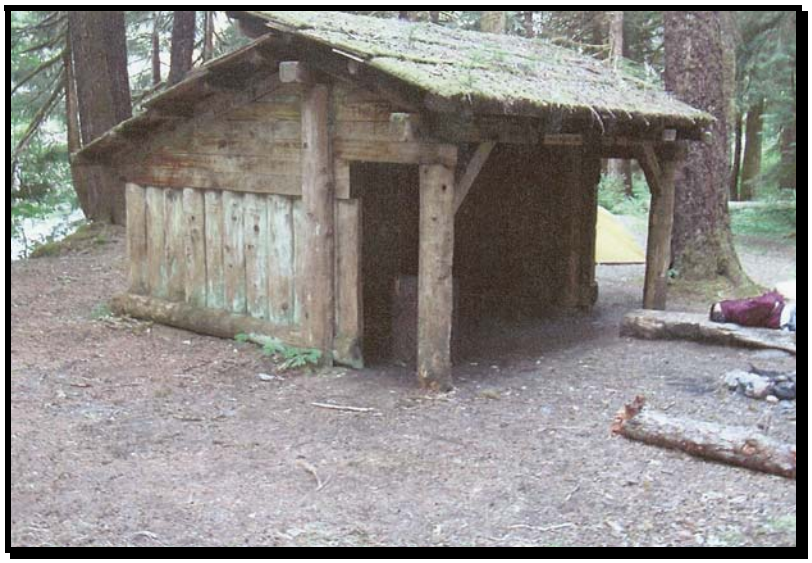


Figure No. 1: Twelve Mile Shelter, August, 2006.

Both the 1974 and 1980 shelter surveys listed Twelve Mile shelter to be in excellent condition. The last assessment was conducted in 2006.

Site:

(See General observations)

The site is in an open clearing with little to no vegetation. The grade is relatively flat around the shelter. Duff and grown debris has accumulated around the base of the building to a minor extent.

Recommendation:

Regrading of site for moisture management and sill log exposure required.

Sill Logs:

The sill logs are roughly 11" and are cut on three sides (round edge to the exterior). They bear on a rubble stone foundation. The sill logs only show signs of minor surface deterioration.

Recommendation:

Site grading for better drainage will aid the longevity of the sill logs. They appear to be reasonably sound for the present.

Logs Columns and Uprights:

Large half log slabs stand vertical beneath the main ridge purlin. The inner slab bears on a stone footing while the outer slab bears on the sill and is scribed around the sill log. These slabs in turn are through bolted at the top of the vertical wall slabs.

At the front eave, two large log columns support the extended wall beam and have knee braces to the front purlin. The columns bear on stone footings. Both these columns are experiencing serious deterioration at their base.

Recommendation:

The half log slabs generally appear in good condition. The outside columns share some deterioration at their base similar to the sill logs. Site grading should extend their service.

The front columns will both need to be replaced.

Walls:

The sidewalls are composed of vertical positioned log slabs to the rear eave height. The back wall is composed of vertical boards. Both wall assemblies bear directly on the sill log. Above the rear eave height, the wall is made up of 6" x 6" solid beams shaped for the roof slope. The third beam up extends to the top of the front column.

Recommendation:

The wall members appear in sound condition and serviceable conditon.

Figure No. 2: Primary Purlin and roof frame.

Roof:

The roof is composed of a two primary cross purlins (6" x 8"), one at the ridge and one at the front eave. Solid 5" x 5" timber plates rest on the purlins and along the top of the wall beams. The plates in turn support

squared shake nailers with a broad overhang at the rake and eaves. 42" shakes comprise the roof cover with a 30 exposure.
Recommendation:

The roof structure is in sound condition, but the moss and debris accumulation on the shakes is deep enough to allow small sapling to grow. The shakes have reached the end of their service life and should be replaced.

Interior:

The four interior bunks appear to be in good shape.

Footnote:

Sometime during the winter of 2007-2008 a gravel flow swept through and buried most of Twelve Mile Shelter.

Given the measurements, description, and the photographic evidence from the 2006 assessment, the shelter could be rebuilt to meet the Secretary's Standards.

Figure No. 3:Twelve Mile Shelter taken during the summer of 2008..

V.2.28
Trapper Shelter

Introduction:

Trapper Shelter was constructed in August of 1963 on the North Fork of the Quinault River. It incorporates both full log, log slab, and sawn timber common to the last NPS shelter design. Some park records refer to this shelter as "Eight Mile Shelter".

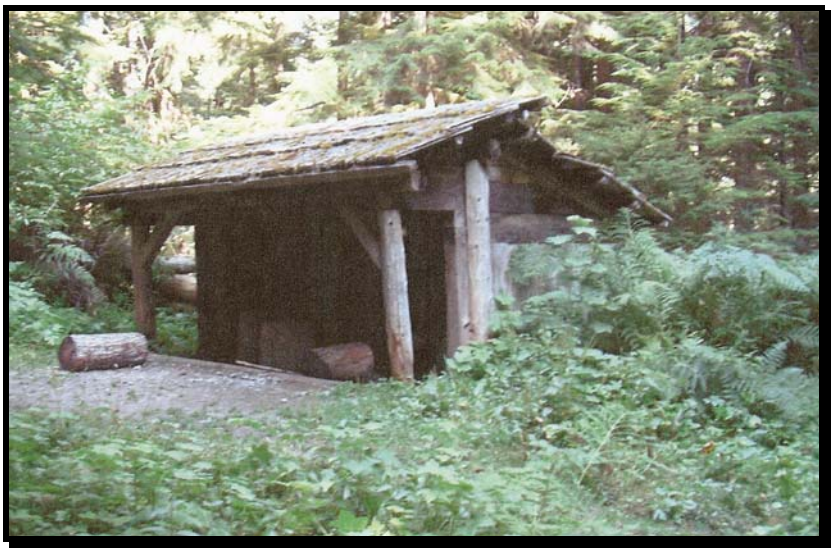


Figure No. 1: Trapper Shelter, August, 2006.

Both the 1974 and 1980 shelter surveys listed Trapper shelter to be in excellent condition. The last assessment was conducted in 2006. A design change did occur with this shelter. Unlike Elk Lake and Twelve Mile shelters, the side walls are constructed of 6" thick timber planks as opposed to log slabs.

Site:

(See General observations)

There has been a great deal of vegetation and debris build-up around this shelter. It even extends around the front entry. This build-up has completely covered the foundation and is upward on the sill log. The vegetation is thick around the shelter, hindering drying and promoting a continual environment for deterioration.

Figure No. 2: Trapper Shelter, August, 2006; note debris build-up around base of sill log.

Recommendation:

Regrading of site for moisture management and sill log exposure and foundation required. Site vegetation should be cleared to improve airflow around the structure.

Sill Logs:

Due to the high grade, the sill logs have upward of 2" of deterioration in the exposed areas above grade. Below grade complete deterioration is anticipated.

Recommendation:

Complete replacement of the sill logs will be required.

Log Columns and Uprights

Large half log slabs stand vertical beneath the main ridge purlin. While duff has built-up around the base of these members, it is assumed they are similar to the other shelters of this type and the inner slab is bearing on a stone footing while the outer slab bears on the sill and is scribed around the sill log. These slabs in turn are through bolted at the top of the vertical wall slabs.

Being below grade, these upright slabs must be experiencing deterioration at their base. In addition, deterioration has developed around the through bolts.

At the front eave, two log columns support the extended wall beam and have knee braces to the front purlin. The columns bear on stone footings. Both these columns are experiencing serious deterioration at their base.

Recommendation:

Both the log slabs and front columns will need to be replaced.

Walls:

The sidewalls are composed of vertical positioned milled timber planks to the rear eave height. These stockade walls bear directly on the sill log. Above the rear eave height, the wall is made up of 6" x 6" solid beams shaped for the roof slope. The third beam up extends to the top of the front column.

The deterioration of the sill log has extended into the wall planks as high as 1 1/2". Given the planks measure 6" in depth, there still may be serviceable stock in the planks and if the sill grading and sill log replacement is done soon, retention of the wall planks may be possible. Unattended for several more years and it will be necessary to either cut the planks and insert a secondary sill plate or replace the planks entirely.

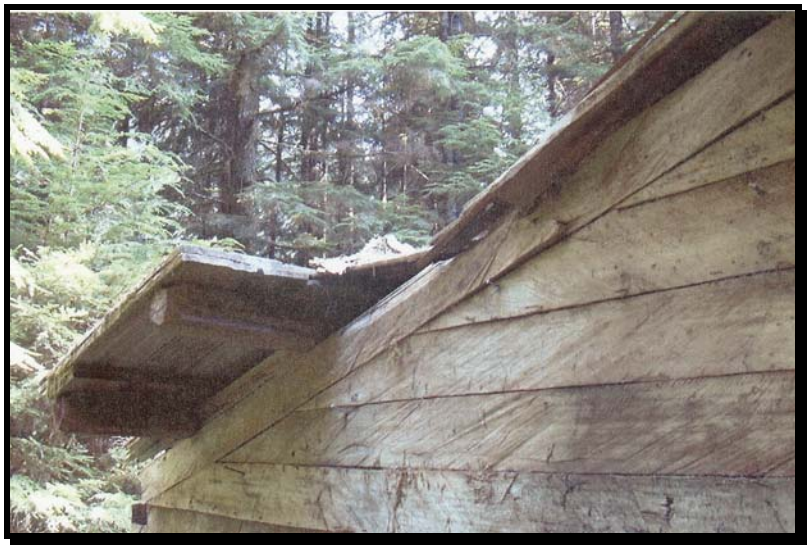


Figure No. 3: Trapper Shelter, August, 2006; note broken top plate and roof purlin.

Within the gable end walls, damage has occurred. This apparently is from a fallen tree. One 4" x 4" sidewall top plate is cracked and has the end missing. The damage also includes several broken roof purlins. Due

to the damage, four (4) non-original log posts have been inserted within the shelter to support the roof.

Recommendation:

The shake roof will need to be replaced and during this work, at least two new roof purlins and one roof plate will also need to be replaced.

Roof:

The shake roof is composed of 44" shakes with a 9" to 10" lap. Many of the shakes were damaged in the tree fall, are heavily laden with moss, and in very poor condition. Unlike other shelters, the front roof overhang has a wooden gutter, albeit in poor condition.

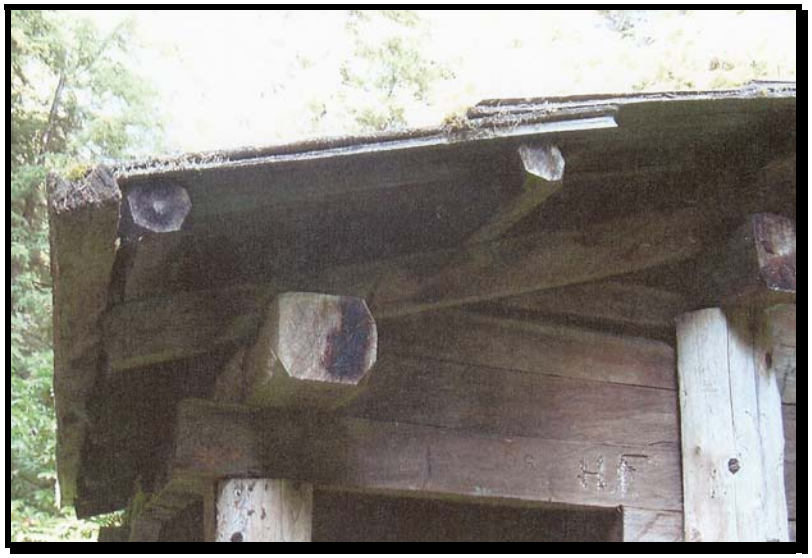


Figure No. 4: Trapper Shelter, August, 2006; note wood gutter at front eave.

Recommendation:

A complete new shake roof is needed for this shelter. The gutter appears serviceable and should be reused.

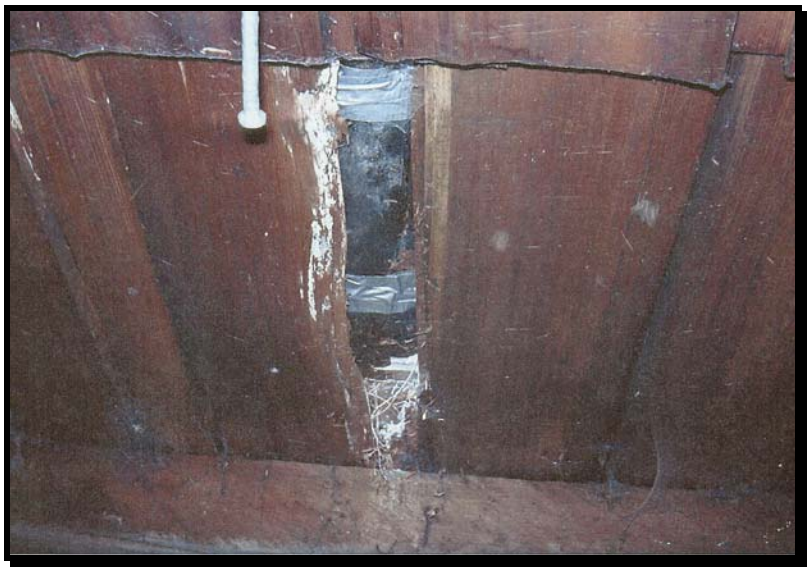


Figure No. 5: Trapper Shelter, August, 2006; note Duct Tape over hole in the roof.

Interior:

There are four bunks in the shelter. The actual bunks appear in fair condition. Damage from the tree fall occurred though to several of the bunk supports on the sidewalls and at the interior bunk columns.

Recommendation:

The bunk supports will require repair as part of the overall project for this shelter.

V.2.29
Mink Lake Shelter

Introduction:

Mink Lake Shelter was constructed in September of 1963. It incorporates both full log, log slab, and sawn timber common to the last NPS shelter design.

Figure No. 1: Mink Lake Shelter, October 2007

The 1974 shelter survey listed Mink Lake as being in poor condition. The 1980 survey though assessed the shelter as being in good condition. The last assessment was conducted in October of 2007, finding the shelter in good condition though lacking roof shakes.

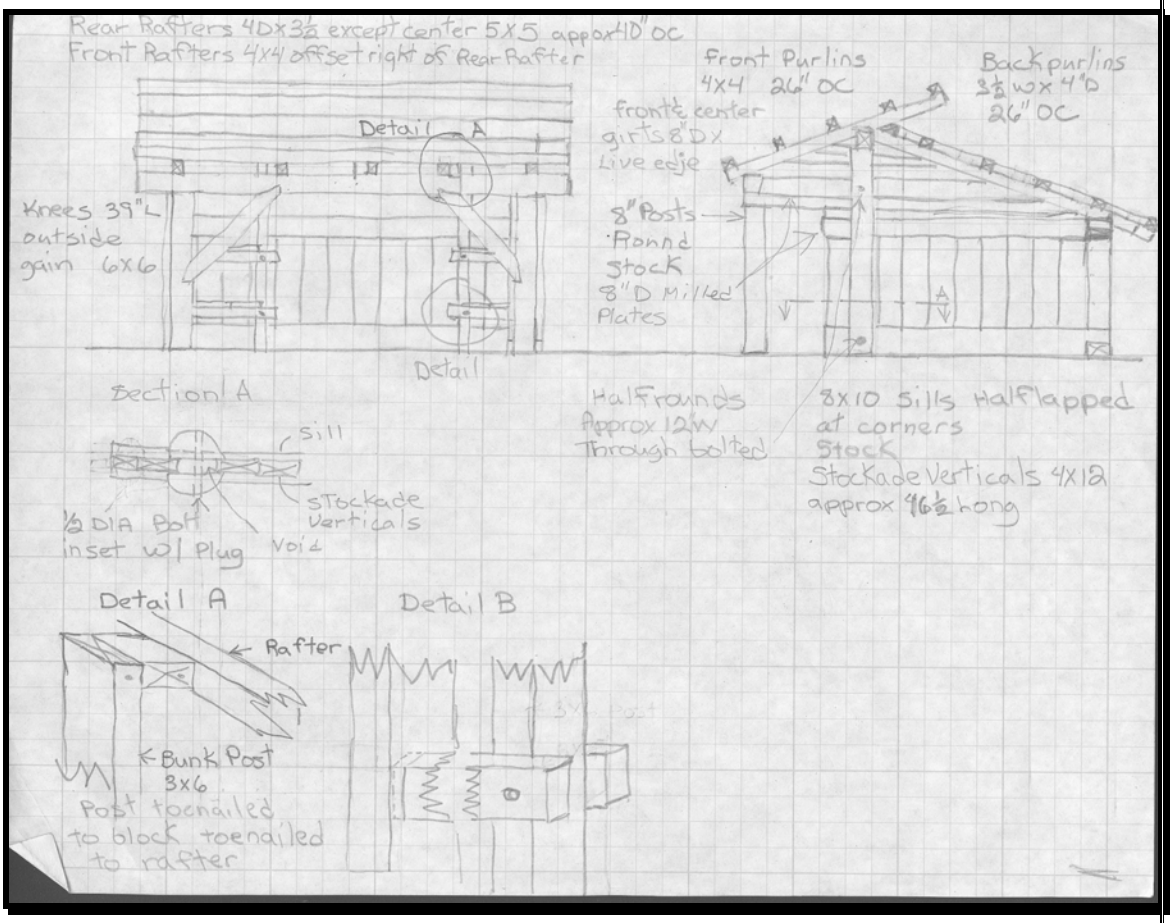


Figure No. 2: This field sketch was drawn by Don (Duck) Houk during a site visit to the shelter in September 2007.

Site:

(See General observations)

There is a great deal of duff build-up along the back wall and along some of the sidewalls. This is just natural accretion of forest debris. The shelter rests on a rubble stone foundation.

Recommendation:

Regrading of site for moisture management and sill log exposure required. The duff and grade around the shelter should be lowered to a point where a minimum of 3" of stone is exposed.

Sill Logs:

The sill logs are 8" x 10 " set on edge and half lapped at the corners. They are in good condition.

Recommendation:

The site work will keep these logs above grade with air movement around them, plus allow drainage away from the logs, so they should stay in good condition for some time.

Log Columns and Uprights

Large half log slabs stand vertical beneath the main ridge purlin on both sides of the sidewalls. The inner slab is flush with the sill and the outer slab is scribed around the sill. It appears that both slabs bear on a stone footing. These slabs in turn are through bolted at two locations, one just above the sill and one through the gable wall member that extends outward over the front columns. All the slabs appear in good condition.

At the front eave, two log columns support the extended wall beam and have knee braces to the front purlin. One column has deteriorated at the base. Normally these columns rest on stone piers, and either the stone is missing or is covered with duff.

Recommendation:

The deteriorated columns should be replaced with a complete new log.

Walls:

The walls are composed of 4" x 12" vertical planks to the height of the rear eave plate, roughly 46". In turn, these planks support an 8" plate. Stacked on top of the plate are random size dimensioned beams, with the 2nd course beam cantilevering to the front to carry the front roof plate. The front log columns support the cantilevered beams.

Recommendation:

These walls appear to be in good condition and do not require any work at this point in time.

Roof:

Wood rafters, roughly 4" x 4" in size, span between the front and rear plates to the center ridge beam. The only exception is the central rear roof rafter which measures 5" x 5". The rafters are offset on each slope in order to form the extension of the front roof over the back. Spaced at 40" o. c., these rafters in turn support shake nailers varying from 3 1/2" x 4 to 4" x 4". The shake nailers are laid at 26" o.c., allowing for 36" shakes with 26" exposure.

With the exception of three missing shake nailers on the rear slope, the actual roof framing appears in good condition.

The complete shake roof is missing. Apparently a temporary tarp has been used for the roof covering.

Recommendation:

Following the replacement of the missing shake nailers, a complete new shake roof is required for the shelter.

Interior:

On these later shelters, there is little in the record about interior bunks, but most seems to have been equipped with four bunks along the back of the sidewalls. At the Mink Lake Shelter, only three bunks remain, the fourth presumably succumbing to a campfire. The bunks are supported at the back by a ledger members attached to the rear wall. At the front of the bunk a pair of cross supports were notched into the sidewalls and then bolted to an upright column. The column in turn was nailed to a spacer, the spaced nailed to the side of a rafters. This offset location for the column (instead of being directly under the rafter) was presumably due to a standard of 32" wide.

Recommendation:

The boards that form the bunk on the upper right facing the shelter are missing, along with the two cross members. Bunk boards and support members should be restored. The rear ledge support is present but will need to be re-anchored.

Note:

The Mink Lake Shelter was re-roofed and one front column/stone pier replaced in the fall of 2008.

V.2.30
Happy Hollow Shelter

Introduction:

Happy Hollow Shelter was constructed in September of 1963. It incorporates both full log, log slab, and sawn timber common to the last NPS shelter design.

Figure No. 1: Happy Hollow Shelter, built 1963.

Both the 1974 and 1980 shelter surveys list Happy Hollow Shelter as being in excellent condition. The assessment of October 2007 found the shelter in good condition with the exception of modest deterioration at the base of the main columns and sill log.

Site:

(See General observations)

The site is heavily overgrown with vegetation with a substantial build-up of forest duff around the foundation stones.
Recommendation:

All the site vegetation should be cleared from the base of the building and back at least four to five feet around the shelter. This will increase drying and air movement. The duff should be removed to a level that exposes a minimum of 3" of the foundation stones.

Sill Logs:

The sill logs are 9" x 10 ", sawn on three sides and half lapped at the corners. They are in reasonably good condition, though there is some minor deterioration on their underside being close to the ground. Site work and vegetation reduction should reduce the rate of decay

Log Columns and Uprights

Large half log slabs stand vertical beneath the main ridge purlin on both sides of the sidewalls. The inner slab is flush with the sill and the outer slab is scribed around the sill. It is assumed that both slabs bear on a stone footing. These slabs in turn are through bolted at two locations, one just above the sill and one through the gable wall member that extends outward over the front columns. All the slabs are experiencing deterioration at their base, upwards of 2". The rest of the slab is in good condition.

At the front eave, two log columns support the extended wall beam and have knee braces to the front purlin. Both columns have deteriorated at the base. Normally these columns rest on stone piers, and either the stone is missing or is covered with duff.

Recommendation:

The wall slabs are in too good a condition to immediately consider total replacement. Depending on removal of duff, it would be more reasonable to cut off the decayed base portion and reset the slab on a larger stone pier. The same could be done with the front columns. In both cases this would save considerable work and historic fabric as opposed to total replacement and is the better choice

Walls:

Unlike Trapper and Mink Lake Shelters, and similar to Elk Lake and Twelve Mile Shelters, the lower portion of the side wall of Happy Hollow are composed of sawn log slabs, roughly 6' thick and 14" wide. The upper portion and gable ends are sawn squared 6" timbers with the 3rd course extending out to carry the front purlin. All these members are in good condition.

Figure No. 2: Broken front shake nailer on Happy Hollow Shelter

Roof:

The roof framing is composed of the three primary purlins (7" x 7") at the front eave and ridge and 5" x 5" offset rafters. The rafters carry the shake nailers, 5 on the back slope and 4 on the front slope. These shake nailers are 4" squared timbers, spaced at 30" centers. The front most nailer on the front slope is deeply cracked. The rest of the nailers are in good condition.

The shakes are 42" in length and appear to be in good condition. There are no leaks in the shelters.

Recommendation:

The front shake nailer needs to be replaced, but the rest of the roof appears sound.

Interior:

There are five bunks in the shelter, double bunks on each back sidewall and a single bunk across the back. They are assembled in the same manner as Mink Lake shelter with ledger supports on the walls and front cross members bolted to a square column. Unlike Mink Lake, these columns bear under a rafter, adding support to the roof. The bunks are in good condition.

[1] Mission 66 Master Plan, Volume 1, Chapter 2, "Visitor Use Brief, page 39, January, 1962; on file at ONP archives.
[2] Personal correspondence from Russ Dalton, retired NPS staff, and Paul Gleeson, February 8, 2008, on file at ONP archives.

V.3

Fire Cache

While the term 'cache' refers to a hidden store of valuable goods, within the Forest Service it came to mean foremost a stockpile of fire fighting equipment and supplies. The concept of a cache does not seem to appear in the Forest Service until after the devastating 1910 fire. After the fire, the magazine American Forestry published a special addition on the nature of the fire and the lessons learned from trying to fight it. Ferdinand Augustus "Gus" Silcox was the quartermaster at the heart of the fire. He wrote an article for the special addition of the magazine. He found the inadequate trail system an obstacle to getting men and supplies to the fire. He felt that "…with an adequate trail, lookout, and telephone system, and a sufficient equipment of tools, the fires can be controlled." These beliefs developed into policy as Silcox rose up the ranks to eventually become Forest Service Chief in 1933. [1]

Initially, a fire cache was nothing more than a small storage shed. Tools and equipment were stocked by pack train. With the emergence of roads, specially designed fire caches began to be located at ranger stations where trucks could be quickly loaded and sent to a fire.[2] But within a forest where trails were still the dominant means of access and movement of labor, small backcountry fire cache continued to play a role in Forest Service fire suppression policy.

One aspect of this policy was having a "sufficient equipment of tools,…" ready for a crew of firefighters. One means of having equipment readily available was to 'cache' it at a prominent location within the trail system of a forest. The Hayes River Fire Cache is at the juncture of the Elwha and Dosewallips trails on the upper Elwha River.

Conservation Goals

The basis of judgment for evaluating the Hayes River Fire Cache is a Conservation policy of preserving the structure for the continued use by park maintenance staff. The underlying principal of this policy is the desire to preserve both the original design and materials of the structure in its landscape setting while addressing life safety issues within a long-term maintenance program. Such preservation measures may include limited restoration of deteriorated material and replacement in-kind of material and assemblies that have reach their service life.

Elements of Significance and Character Defining Features:

Within the goal of preserving the fire cache, the concept of significance plays a vital role in establishing maintenance policy. For historic structures, significant elements are those qualities of the building that provide historic meaning and understanding.

The National Register of Historic Places Registration Form says the Hayes River Fire Cache is significant for its association with the history of the Forest Service keeping fire suppression tools in remote areas. Its design and construction represent practical and functional use of local materials. It has retained integrity of setting, design, materials, and association with an important aspect of the Park's history.

In terms of significant character defining elements of the fire cache, these are embodied in the rustic form of the original log/beam design and construction, the use of a stone foundation, the shake siding for the upper section of the walls, and the use of wood shakes for the sheathing and roof. Replacement in kind is critical in retaining the historic qualities of the fire cache.

V.3.1
Hayes River Fire Cache

Figure No. 1: Hayes River Fire Cache

According to the National Register, the Hayes River Fire Cache was constructed in 1928 by the Forest Service within what was then the Mount Olympus National Monument. It is still used today for the storage of equipment and tools.

The Hayes River Fire Cache is a small rectangular combination log and frame structure with a shed roof. It is only ten feet wide and 8 feet deep. The base of the building up to the rear eave line is constructed of logs with simple lap joints. The extended front and sidewalls of the shed are wood framed and covered with split cedar. The roof is cedar shake with a central insert of corrugated fiberglass creating a skylight. The building was last assessed in July 2006.

The fire cache underwent substantial stabilization work in the spring of 2000. The building was raised and the stone foundation repaired. All the sill logs were replaced. Additional selected log replacement was conducted on the front, back and south sides. The extant floor was removed and new treated floor joist and treated tongue-&-groove flooring installed. The wall shakes on the south elevation were totally replaced. When assessed in 2006, the structure was found to be in very good condition with the exception of minor surface deterioration (1/2" depth) on some of the log corners.

Recommendation:

With a structure in this good of condition, the primary recommendation is to continue a periodic monitoring, clean the duff and debris off the roof and insure there is good drainage around the building.

[1] Lewis, James G., The Forest Service and The Greatest Good: A Centennial History, Forest History Society, 2005, p. 76-78.

[2] A good example of an early vehicle designed fire cache is the historic structure at the Elwha Ranger Station.

V.4

Lookouts

In response to the 1910 fire, the Forest Service developed a broad policy towards fire detection and suppression. The policy included a more extensive trail system, tool caches, a telephone system, and the construction of lookouts. More than 5000 lookouts were to be constructed over the next fifty years, the greater number in the western states and the majority built by the Civilian Conservation Corps during the 1930's.

Lookouts were small, self-contained, observation rooms located on high peaks with commanding views, allowing the spotter to see both wide expanses of country and developing weather patterns. The lookouts were either sited at grade, or elevated on towers of either wood or steel. The concept of the lookout was two fold. Seasonal workers lived in or near the lookout and spend the day trying to detect fires by looking for active smoke trails. In addition, during active thunderstorms, whether night or day, the spotters recorded visual lightening strikes within her or his view shed. These strikes were recorded on an instrument known as an Osborne firefinder, consisting of a circular map of the viewing area and a brass alidade mounted at the location of the lookout on the map. By turning the alidade towards the point of the lighting strike, the spotter could record a direction and general location of the strike. Other lookouts within the vicinity would be doing the same, and by triangulation of the direction from each lookout, the location of a lightening strike could be identified. The development of a forest fire from a lightening strike can be immediate or delayed. Under the right conditions, a lightening strike can immediately start a fire. In other instances, and one that is more common, the lightening can ignite the duff of the forest floor or an old snag, and the fire will smolder for days and weeks without giving off enough smoke to be visible. Weeks or even months after a storm has past, these fires can erupt into flame. It is these events, along with man-made fires, that make the lookout so valuable. Three or four times each hour, the spotter scans the forest in search of any

tell-tale smoke signs. If a column of smoke suddenly appears, quick reference to recorded lightening strikes and coordinated triangulation with other lookouts can provide a location and potential cause of a fire. Such information could then be telephoned/radioed to administrative sites and used for the deployment of firefighters and support staff.

For many years lookouts were an integral part of the Forest Service fire detection system. Lookouts were eventually phased out by the use of spotter planes, and global satellite technology. Only a few remain active today.

At its peak there were 65 Forest Service constructed lookouts in the four county area of the Olympic Peninsula. Dodger Peak is the only remaining fire lookout in Olympic National Forest.

During World War II, many of these lookouts took on a second function as station of the Aircraft Warning Service. Manned virtually on a continuous basis, the lookouts housed personnel who noted and reported all aircraft traffic within their view shed. During the summer months, Dodger Peak operated as both a fire lookout and an aircraft warning station.

Conservation Goals

The basis of judgment for evaluating the Dodger Peak Lookout is a Conservation policy of preserving the structure for the continued use by park staff. The underlying principal of this policy is the desire to preserve both the original design and materials of the structure in its landscape setting while addressing life safety issues within a long-term maintenance program. Such preservation measures may include limited restoration of deteriorated material and replacement in-kind of material and assemblies that have reach their service life.

Elements of Significance and Character Defining Features:

Within the goal of preserving Dodger Peak Lookout, the concept of significance plays a vital role in establishing maintenance policy. For historic structures, significant elements are those qualities of the building that provide historic meaning and understanding.

The Dodger Peak Lookout is significant for its association with the history of the Forest Service's program of fire detection. Its design and construction represent practical and functional use of local materials. It has retained integrity of setting, design, materials, and association with an important aspect of the Park's history.

In terms of significant character defining elements of the lookout, these are embodied in the simple form, basic frame system, lap siding and short eaves, and the extensive fenestration of each elevation. Sitting atop a stone foundation, the principle feature is the windows that both dominate its appearance and define its function. Of equal importance are the board and brace frame shutters for winter protection.

On the interior, the beaded wainscot of the side walls (run horizontal) and the ceiling are character-defining features as is the painted wood floor. Perhaps even more important is the original lookout equipment. The Osborne firefinder, firefinder stand, and the telephone, (should be a telephone box clamped to the pedestal of the firefinder) were still in place during a 2006 visit to the lookout. These are important objects that need to be protected and kept at the lookout.

A conservation program for the lookout should include retention of as much of original fabric as possible, and only if that material is no longer functional should it be replaced. If replacement is required, then matching the original material in appearance and size is critical in retaining the historic qualities of the lookout.

V.4.1
Dodger Point Lookout

Dodger Point Lookout was constructed in 1933. Located in Washington State, it fell into the Forest Service designated Region 6, which covered the Northern Pacific. While the Forest Service had published a limited set of standardized building plans in 1908, none of those plans addressed a lookout tower. It was not until 1934, a year after Dodger Point was constructed that Region 6 published a set of standardized building plans. These structures were not referenced as "Lookouts" but rather Lookout Houses. The 1934 plans of Region 6 included a standard "Lookout House", Plan FC-1. This plan was for a small 14' x 14' single story structure.

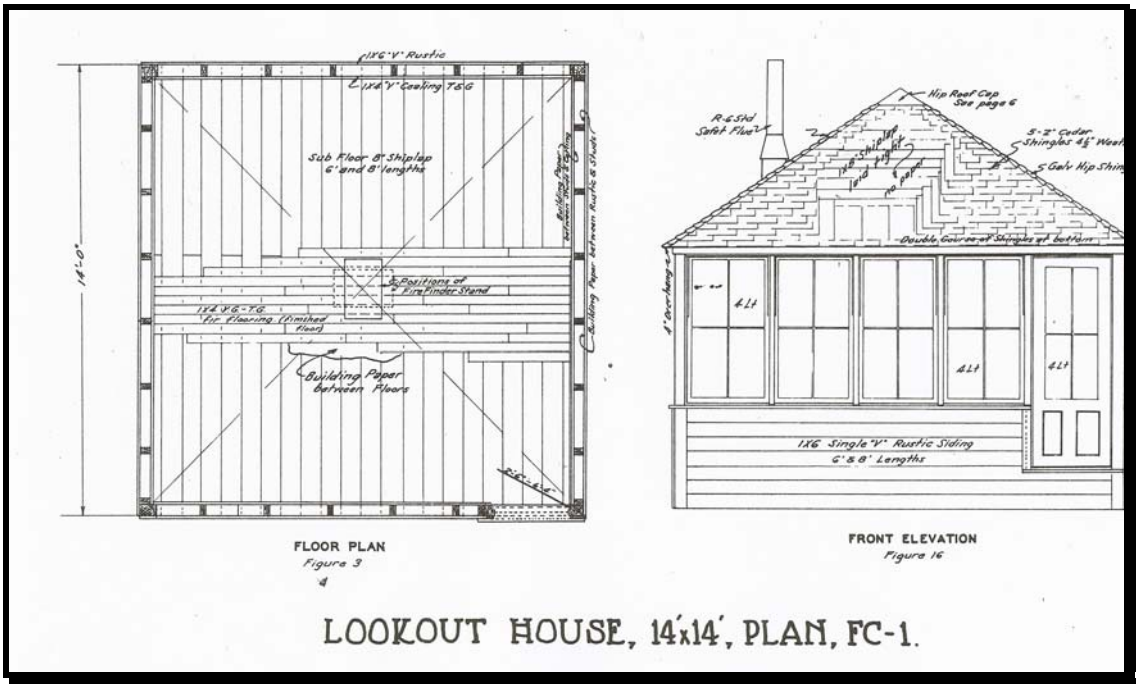


Figure No. 1: 1934 Forest Service Region 6 Standard Plan for a Lookout House.

This plan is similar to Dodger Point in size, but unlike Dodger Point, it utilizes a four–lite sash pattern.

In 1932 Region 1 (Northern Rockies) published Plan L-4 that is virtually identical to Dodger Point.

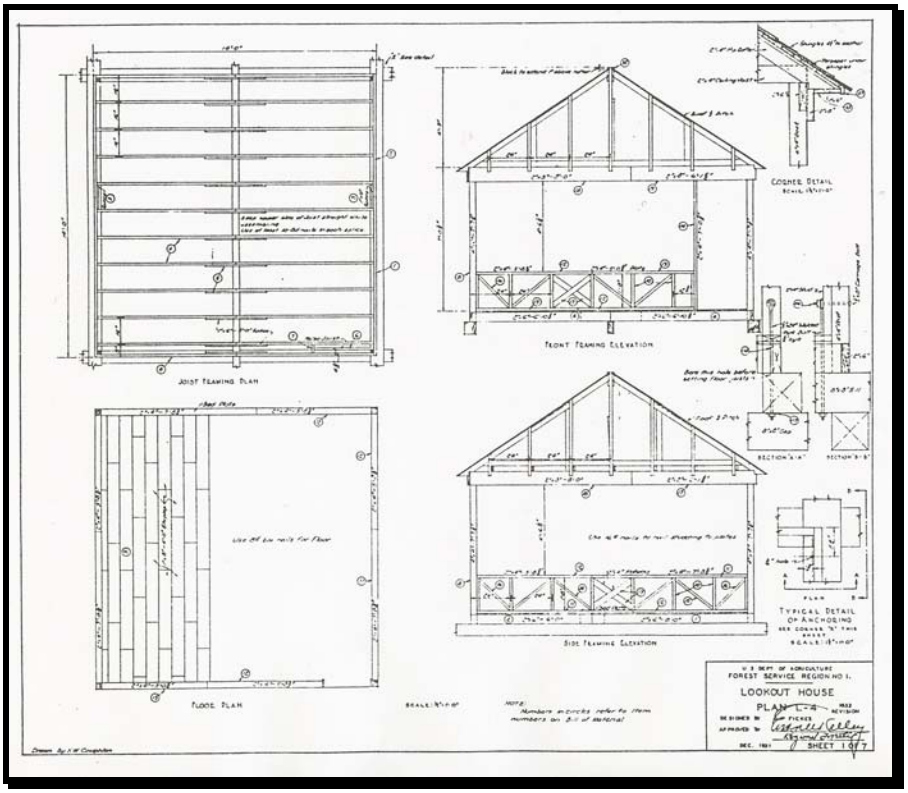


Figure No. 2: 1932 Region 1 standard design for a Lookout House.

This plan follows the standardized size of 14 ‘ x 14’, but uses the same nine-lite sash as found at Dodger Point. This can be seen in the following Figure V.4-3 that illustrates a L-4 plan on a twenty foot tower.

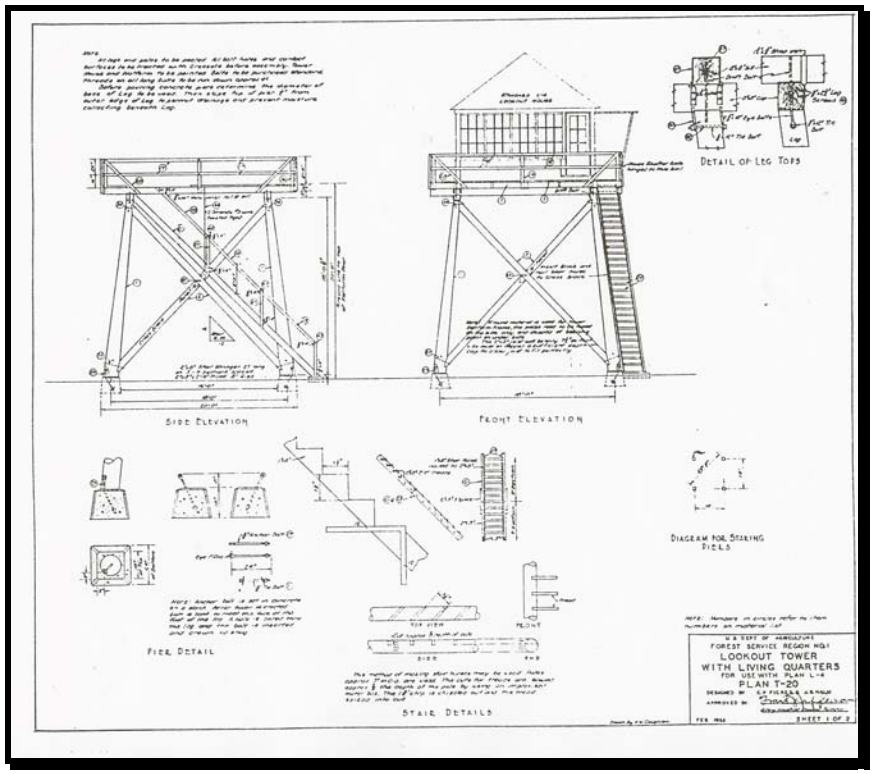


Figure No. 3: A 1932 Region 1 Plan T-20, illustrating a 20 foot "Lookout Tower with Living Quarters for Use with Plan L-4".

The L-4 Plan was devised to be used as the Lookout House for tower as high as 50'. As Dodger Point, the site did not require a tower, and the "Lookout House" was simply placed at grade on a rock foundation.

Figure No. 4: Dodger Point Lookout House, 2006.

Site:

The lookout building sits atop Dodger Peak surrounded by a shallow grass meadow and a few isolated fire trees. Site drainage is not an issue in this location

Foundation:

The foundation of the lookout house is composed of a dry laid rubble stone system. There is no evidence of mortar or any systematic method of laying the stone. As discussed below, the frame of the structure shows signs of rack and distortion, some perhaps from wind load, but more from a differential settlement of the foundation. There appears to be a new pressure-treated sill member along two sides, presumably normal to the floor joists. These sill members do not appear to be well seated on the stone foundation. The type of connection between this sill plate and the rest of the building frame is unknown. The lookout house had special

corner connections that bolted the corner stud assembly to the sill plate (See Figure No. V-4.2). In such an exposed weather location this a lookout, this connection was critical for anchoring the frame to the sill. The mere presence of the pressure-treated sill implies it is a recent replacement and the question arises as to whether it still has a connection to the frame.

Recommendation:

The base of the building should be leveled and at least at the corners for a distance back of several feet, the dry stone wall foundation should be rebuilt to a more stable assembly. Secure connections need to be made between the sill, floor joists, and the corner studs, tying all securely together. This will entail removal of some of the exterior siding.

Figure No. 5: Dry Stacked rubble foundation, 2006.

Frame

The structure has indication of racking and twisting of the frame. This is most likely settlement of the foundation. This movement shows up in the difficulty of closing the door, separation of corner finish joints, and the

twisting of the roof plate. The frame of a standard L-4 Lookout House had 4 x 4 posts at the corners and 2 x 4 intermediate studs. The tops of

Figure No. 6: Note the outward rotation of the wall plate above the door trim.

Figure No. 7: Note racking of the trim as the frame distorts.

the studs do not have a flat plate, but a 2x member was inset in a notch of the wall stud as a wall ledger. The ceiling joists, which also act at the rafter tie, rest upon and are anchored to the wall ledger.

Figure No. 8: Interior corners also show signs of the frame distortion.

Recommendation:

Following the work at the foundation and leveling of the building, the trim around the eave line should be removed and the connections of the stud, wall ledger, ceiling joists, and rafters re-secured and reinforced.

Siding and Trim:

The lap siding on the lower portion of the walls appears in fair condition. There are some "nail-popping" from thermal movement and a paint coating in poor condition.

The trim around the windows, doors, and siding has not held up as well as the siding. Trim elements directly below the windows have cracked,

trim above the door has deteriorated, and corner trim is beginning to rotate from frame movement.

Recommendation:

Once the building is squared, the majority of the trim will need to be re-nailed or replaced. Both the siding and the trim will need to be re-painted.

Roof:

The roof has cedar shingles and appears to be in good condition. The rafters look sound, but have separated in the past at the ridgeline (there is no ridge board), and repairs have been made by using former siding pieces to former collar ties. The solid roof sheathing looks in good condition.

Recommendation:

While the roof looks in good condition, after the building is leveled, it would be important to re-secured all connections in the roof frame and to add a reinforcement connection (gusset plate) at the ridgeline of the rafters.

Windows:

The actual sash windows look in good condition. Paint coating is fair. The winter shutters for the windows are weathering, with some warped elements of the brace frame and failing connections.

Recommendation:

Just as part of the maintenance program, repainting of the exterior surfaces of the window frame and sill is recommended.

The winter shutters all need to be repainted. Prior to repainting, the brace frames either need to be repaired or deteriorated elements replaced. In addition to protecting the windows during the winter, the shutters add an element of stiffness to the upper wall section when closed.

Figure No. 9: The window sash of Dodger Point Lookout

Door:

The existing door is not original. The original door would have had a six-lite upper section with a single solid panel below. A replacement door to match the original would retain the integrity of the lookout house. The problem appears to be a winter shutter to cover the door as there are for the windows.

Recommendation:

Restoring the multi-paned door to match the original should be done to provide the experience of a complete 360° view shed of lookout. The issue would be such a door should not be installed without also providing for a winter shutter for the door.

Interior:

The interior appears to be in remarkably original condition and in fair shape. Some trim may need to be re-secured after the building is squared. The scuttle to the attic storage needs to be replaced or restored. As mentioned in the discussion of significance, many of the original interior features regarding the operation of the lookout remain and should be left in place.

Recommendation:

Re-secured any loose trim and repaint the interior to its historic white color.

VI

World War II: Observation Posts

Concern about a military invasion of the western Washington coast brought the National Park Service into the war effort. Military radar did not cover all the remote mountain and coastal areas of the strategic Olympic Penisula. To augment this coverage, both the U.S. Army and the U. S. Coast Guard instituted programs that established observational lookouts. The Army formed the Aircraft Warning System (AWS). Thirteen ASWS lookouts were within the mountainous terrain of Olympic National Park, supplied and maintained by the Park Service. These lookouts consisted of both existing park structures and a series of new buildings constructed specifically for the AWS program. Existing fire lookouts, like Dodger Point, were quickly brought into the program. Others, like Pyramid Peak, were hastily constructed during 1942.

The Coast Guard established a second program of lookout stations and outposts along the coasts of Oregon and Washington called the Northwest Sea Frontier Coastal Lookout System. Here new facilities had to be constructed. One of the new lookouts was at the mouth of Starbuck Creek being the Starbuck lookout at the mouth of Starbuck Creek, roughly four miles south of Lake Ozette.

Both these systems were operated until 1944.

Conservation Goals

The basis of judgment for evaluating Pyramid Peak and the Coastie Head Lookout cabin is a Conservation policy of preserving the structures more as objects of interpretation. There is no formal policy for their use within the management of the National Park, except for the occasional shelter for

hikers. Within such a policy, stabilization of the basic structure and envelope are the main goals. Original material should be preserved and function, the main design character of the structure retained, but little beyond stabilization should be pursued. Such preservation measures may include minimal and limited restoration of deteriorated material and replacement in-kind of material and assemblies that have reach their service life only for the soundness of the essential structure and envelope.

Elements of Significance and Character Defining Features:

Within the goal of preserving Pyramid Peak Lookout and Coastie Head Lookout cabin, the concept of significance plays a vital role in establishing maintenance policy. For historic structures, significant elements are those qualities of the building that provide historic meaning and understanding.

Both these structures are significant for their association with the short history as observation posts in World War II. Their design and construction represents the most functional use of materials. And while they have retained some of the integrity of setting, design, materials, and association with an important aspect of the Park's history, it cannot be overlooked that neither were constructed for durability or longevity.

In terms of significant character defining elements of the lookouts, the single most important character is their location. It was the location that created these buildings and the location's value for the war effort. Retaining the basic elements of the structures in a state of minimal stabilization provides interpretive meaning to an obscure civilian and military wartime action.

VI.1
Coastie Head Lookout - Cabin

The Coastie Head Lookout Cabin is believed to have been constructed in 1942 as part of the U.S. Coast Guard Northwest Sea Frontier Coastal Lookout System, though there is no reference in Coast Guard records of any structure at this site. Some references even suggest the building was in existence prior to the war, but then used for a lookout cabin.[1]

It is often confused with the known Starbuck Lookout cabin that was located a mile north of Coastie Head. The Starbuck lookout was destroyed when the promontory on which it was built collapsed.

Figure No. 1: Coastie Head Lookout

The cabin is a simple rectangle measuring about 8' x 10' with a 4' porch off its west elevation. It is 1-story, built of wood-frame construction, and set on a post and pier foundation. The gable roof is sheathed with a combination of

wood shakes and roofing paper over boards. A shed roof porch is also covered with roofing paper over boards and is supported by milled 2 x 4s. The main elevation has an off-center wooden door made of horizontal boards with bracing and a window opening. There are two window openings (no sash) with simple wood trim. Other windows appear to have been closed off with the addition of boards, at least on the rear elevation.

As late as 2002, volunteers have made basic repairs to the cabin. There is no recent assessment of the condition, but given location fundamental stabilization measures will be required on a periodic basis to preserve a sound envelope and frame.

Note: Coastie Head Lookout collapsed in 2007.

[1] See Coastie Head Lookout Cabin National Register form Section 8 & 9, page 3.

VI.2
Pyramid Peak AWS Lookout

Figure No. 1: Pyramid Peak AWS Lookout

Pyramid Peak was one of the new lookouts specifically built for the U. S. Army Aircraft Warning System (AWS) program within Olympic National Park. The Park had begun construction of a trail to the peak in September of 1942 to provide supplies for the new building. Mr. Joe Sherman finished construction of the lookout in November 1942.

Pyramid Peak lookout is a simple single story wood framed building measuring 12' x 15', with a small 6' x 8' wood shed. A series of three cedar log sills rest on a series of stone piers and carry stud-framed walls. The balloon stud frame has horizontal shiplap sub-sheathing on the exterior

surface that is covered with 24" hand-split cedar shakes. The interior walls were covered with plywood. Wood floor joist support a two layer 8" shiplap floor. 2 x 4 ceiling joists connect to the heel of 2 x 4 rafters. There is a 1 x ridge board and 2 x 4 collar tie at the peak. The rafters are covered with solid sheathing and cedar shakes. A small rectangular window was framed on three elevations and a door on the front gable. Only two windows remained, but the glazing was missing. The entry door was missing. Originally, a small woodshed extended off the front elevation just outside the entry door, but had collaped.

The building was assessment for condition in 1997. The site was littered with the remains of the collapsed front woodshed, many of the boards with protruding nails making the site unsafe for visitors. The foundation and primary wood frame were considered in fair condition, as was the interior floor. The main problem with the structure was the poor condition of the shake roof. It had deteriorated to the point that moisture was coming through and warping and delaminating the plywood ceiling. At that time, the site was policed for debris and the remains of the collapsed woodshed staked for visitor safety.

By 2007, the stone foundation piers had weathered and eroded to the point of allowing the sill logs to rest in the dirt, resulting in a distortion of the floor and wall framing. Time and weather had deterioration most all the cedar shake roof and siding. This in turn allowed moisture into the building, deteriorating the floor, interior plywood sheathing, and the exterior sheathing.

In the spring of 2008, the National Park Service undertook substantial stabilization measures for the building. All the decayed and delaminated plywood, rotted floor, and debris were removed from the structure. The three sill logs were replaced, complete with original extensions beyond the wall plane, and the structure was jacked up and leveled. Stone piers were rebuilt under the sill logs. The south rim floor joist and two cross joists were repaired, one sistered and one replaced completely. 25% of the sub-floor was replaced. The remains of the cedar wall shakes and tarpaper was

removed, and roughly 20% of the wall sheathing replaced on the north, south, and west walls. New tarpaper, corner trim, and shakes were installed. A new shake roof was installed after replacing all of the roof sheathing on the south side. The original eave trim was retained. Since the original coal heating stove was not going to be replaced, the roof thimble was not installed, but recorded and measured in project notes. Only the sill plates of the attached wood shed remained, but the sections of framed walls were found in the brush below the cabin. Between measurement of the walls section and historic photographs, enough evidence was developed to rebuild the shed.

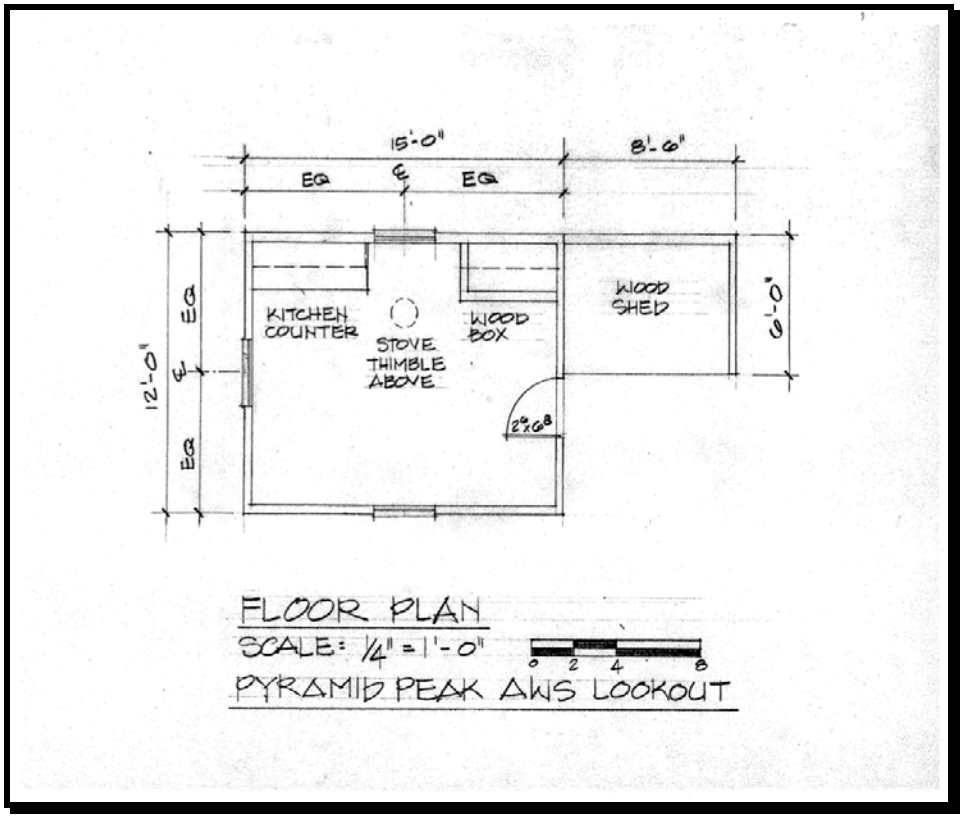


Figure No. 2: Floor Plan, Ellen Gage, Historical Architect, Olympic National Park

Two window sash remained, but without glazing. One sash was missing completely. The original sash were restored and reglazed. A new sash was fabricated to match the original. There was no historic evidence on the type or character of the door. In lieu, a new door was constructed in a style

typical of backcountry doors during this period. It was made of 1 x 8 boards on a 2" x 4" "Z" frame.

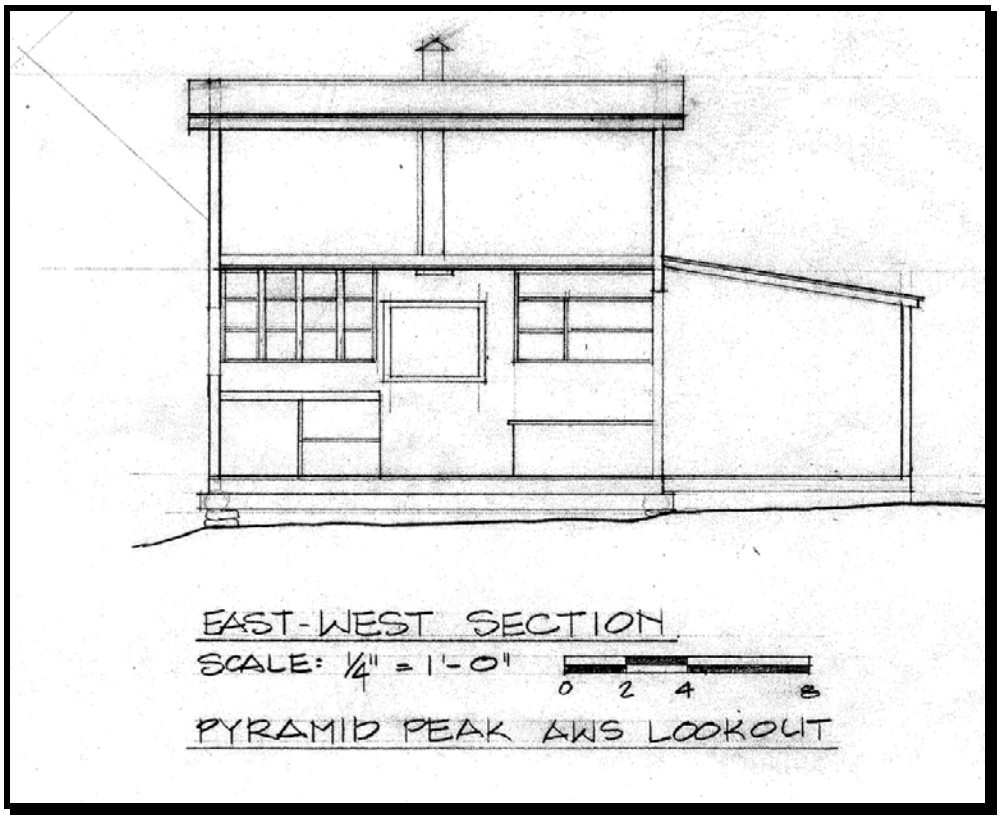
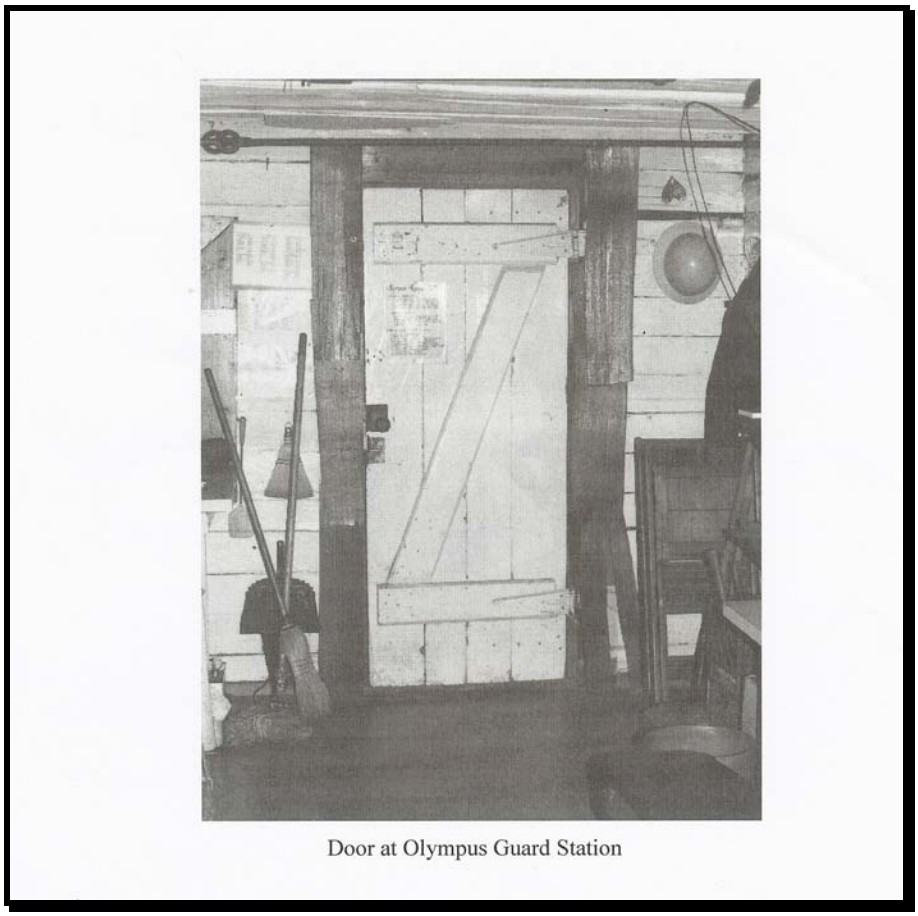


Figure No. 3: Section, Ellen Gage, Historical Architect, Olympic National Park

On the interior, the woods were recovered with plywood. Due to concerns of moisture within the wall cavity, small screens were installed at the base and top of the plywood to allow for inter-cavity ventilation.[1]



Door at Olympus Guard Station

Figure No. 4: The style of the new door was based on the historic door of Olympus Guard Station

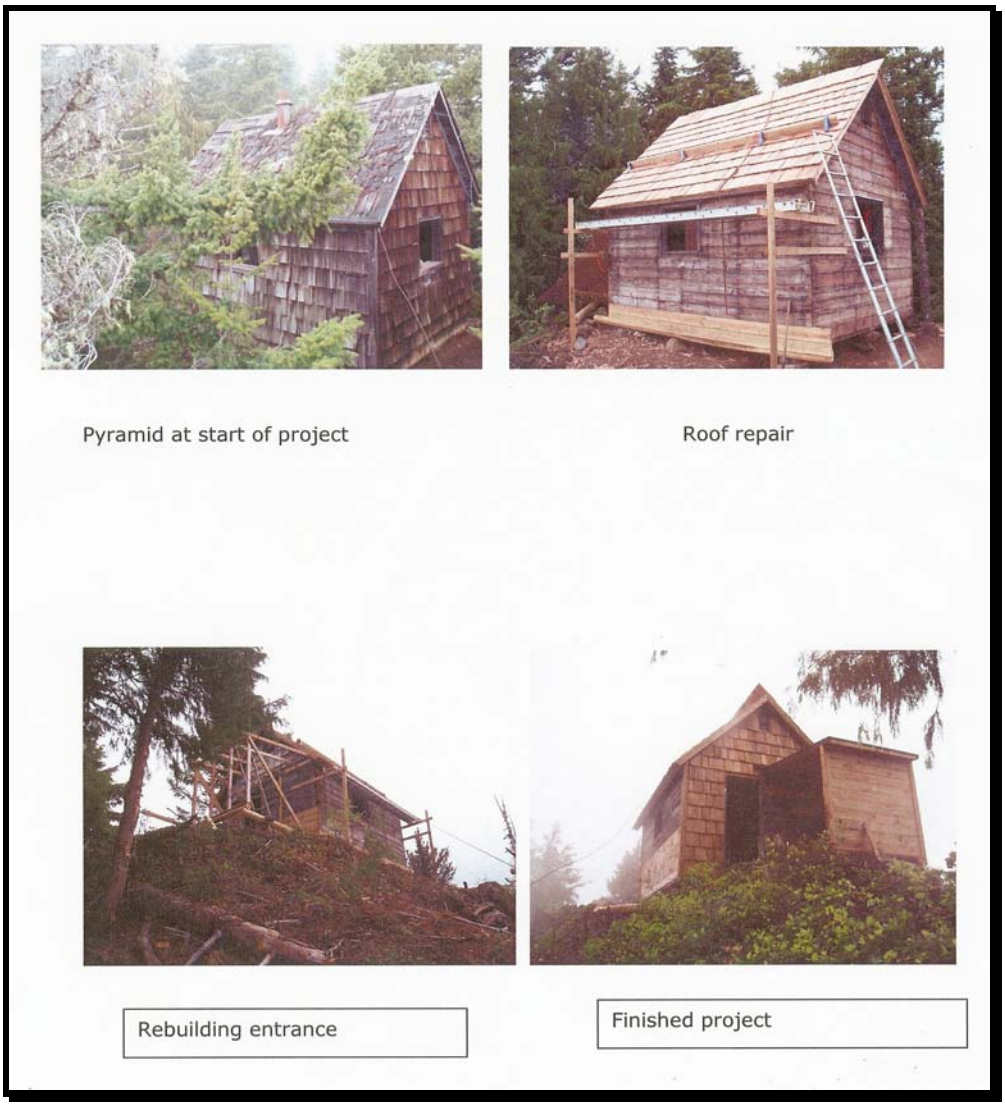


Figure No. 5: Project Photographs

[1] The description of the stabilization measures were complied from the PWR Cultural Resources Project Accomplishment Report for Fiscal Year 2007 by D. Houk and P. Gleeson of Olympic National Park. Additional information was obtained from correspondence addressing 106 compliance for the project with the Washington State Historic Preservation Office.

Appendices

Appendix 1

Final General Management Plan/
Environmental Impact Statement
Volume 1, p. 35
Historic Structures

Backcountry Historic Structure Report
Olympic National Park

Appendix 2

Historic Structures Report
Humes Ranch Cabin
By
Russ Dalton
May 2005

Appendix 3

Trail Shelter Structural Analysis
AHJ Engineers
Janaury 2007