THE RESOURCE POTENTIAL FOR RECREATION IN THE STEHEKIN WATERSHED

by

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THE RESOURCE POTENTIAL FOR RECREATION IN THE STEHEKIN WATERSHED

CHAPTER ONE

INTRODUCTION

The Stehekin watershed contains a combination of resources that can only connote recreation. The area is remote and little known; however, its rich potential is gradually being realized by increasing numbers of outdoor enthusiasts. The Stehekin, with proper planning and development, will play a significant role in the gross pattern of American recreation.

The Stehekin basin lies deep within the rugged Cascade Mountains of northern Washington. The entire drainage system of the Stehekin River, occupying the northern corner of Chelan County, essentially defines the region (see Figure 1). The crest of the Cascades provides the physical boundaries along the west and north—Devore and Purple creeks serve as southern borders. The Sawtooth Ridge separates the Stehekin drainage from that of the Twisp River on the east (70, p. 37). Approximately 372 square miles drain into Lake Chelan via the Stehekin River.

No road leads to the Stehekin country. Entrance is possible only by foot, air, or water. The most popular method of travel is on the Chelan Boat Company's passenger
launch, the "Lady of the Lake", which has a licensed capacity of 140 persons. Tourists wishing to ride this craft are served by boarding docks in or nearby the city of Chelan, Washington. North and south access to Chelan is provided by U. S. Highway 97 which extends through the center of the state. East and west transportation is served by U. S. Highways 2, 10 and 410 which junction with U. S. 97 (see Figure 1). The radiating mileage rings shown on Figure 1 indicate that a large portion of Washington's population (located principally along U. S. Highway 99) is within a half day driving range and all are within one day limits as are a good share of Oregon residents. Due to the indirect highway pattern leading to the Chelan gateway, however, road mileages are nearly double those indicated by the circles.

The basic industry of the Stehekin watershed is recreation. There are other types of exploitation but the recreation economy appears to have the greatest number of assets. Vacation resources are abundant and varied, and the rugged peaks tempt the mountaineer. Sierran relief provides spectacular scenery for sightseeing and photography. Glaciers enhance the landscape and feed icy streams which tumble and fall to the valley floors. Numerous species of wildlife roam the coniferous forests, and a variety of Salmonidae offer excellent
sport for fishing enthusiasts. Alpine meadows support a brilliant array of wild flowers. Cool summer temperatures and an abundance of sunshine are favorable drawing factors to surrounding populations.

Optimistic individuals assessed these recreational assets before the turn of the 20th century. Economic development began in the 1890's and has continued to the present. Recreation entrepreneurs have experienced profitable business years but the over-all trade has been marginal. Most of the proprietors must supplement incomes through other employment during the slack winter months. Tourist visitations are spasmodic and dependable. Developments are largely below par in comparison to other vacation areas. Capital is limited, publicity has been notably lacking, and the present accommodations and facilities do not entice a large percentage of tourists. Wise and directed planning can solve many of these problems. The physical assets are excellent and the potential for recreational development is high.

Purpose of the Thesis

This thesis is an analysis of an important resource utilization problem—the question of whether the Stehekin watershed is worthy of preservation for recreation use. Recently a surge of publicity has been centered around the Glacier Peak Limited area. Questionable boundaries
have been drawn through the watershed leaving a large portion open to exploitation that may ruin the environmental complex so well-suited for recreation. The fate of the region hangs in a delicate balance.

The purpose of the thesis is to appraise the recreation assets of the Stehekin valley, evaluate them against alternative values, and show why and how development should occur. The procedure has been to present the problem and provide an overview of the area. A chapter traces the history of recreation and is followed by a section on the evolution and position of competing economies. A case is presented for recreation in the watershed and a plan for development follows. A summary and forecast concludes the thesis.

The realization that the Stehekin watershed contained an outstanding combination of forests and alpine meadows complimented by glaciers and snow-covered peaks was reached in the summers of 1955 and 1956. The author resided in Stehekin, Washington, during these periods serving in the capacity of Fire Guard for the United States Forest Service. Knowledge of the region was gained largely through field research. Five weeks of further field study during the summer of 1957 strengthened an understanding of the resources and problems of the area. Libraries yielded a paucity of material, much
being outdated, historical, or of repetitious description. Valuable data was furnished by Mr. Harry Buckner and Mr. Hugh Courtney, both long-time residents of Stehekin. Interviews with resort owners, residents, and community leaders provided ideas, views, opinions, and factual information. Contacts were made with Chelan County's Public Utility District, Highway Department, School Superintendent, Agricultural Extension Agent, and the U.S. Forest Service offices located at Chelan, Wenatchee, and Portland. Newspaper files were researched for available statistics. Questionnaires, prepared to solicit opinions from vacationers entering the region, were computed and are included in the appendix.

It would have been virtually impossible to cover the entire area in even three summers of extensive travel. Hence, broad and specific concepts were reached through several types of reconnaissances. For direct contact, backpacking hikes were taken. Mountains were climbed for vantage points to gain a broader picture. Finally, an over-all view was obtained from an aerial survey.

It is the hope of the author that this thesis of the Stehekin region will be a contribution to the literature on the Pacific Northwest and provide the reader with a comprehensive understanding and appreciation of the valuable recreation assets of the wild, mountainous, northern Cascades.
Serenity and natural grandeur characterize the setting of the Stehekin watershed. Man and his works are almost completely dominated by the physical environment. The peaceful silence is broken and enhanced by the music of falling waters, the soughing of the wind through the trees, and the penetrating whistle of the marmots. Sharp contrast of sound occur when thunderous reverberations resound through the valleys as icy fragments break from hanging glaciers. Gigantic cedars and Douglas fir grow along valley corridors. Stunted mountain hemlock struggle for existence near the margins of alpine meadows where the agile mountain goat often startles the intrepid alpinist. Trout rise to the surface of streams and lakes and bear lumber through the underbrush in search of food—the manifestations of nature's subjects are everywhere. The setting—the entire complexity of the natural phenomena viewed as a whole—is perhaps the greatest asset of the Stehekin Valley. Elevation is the key to this appreciation for without it only scattered portions can be witnessed and the real magnificence of this country remains a secret.
Topography

The volcanic character, associated with the better-known sections of the Cascades to the south, is seldom in evidence in the Stehekin. Only Glacier Peak is the reminder of the volcanic concept. The basic rock material of the northern Cascades is metamorphosed intrusives and granite (17, p. 422). A hypothesis that the Cascade geosyncline upheaval was once peneplaned and then re-uplifted is given support by observing the uniform elevation of the peaks (17, p. 422; 76, p. 85) (see profiles, figure 2).

The U-shaped Stehekin Valley is an outstanding example of glacial erosion (see Figure 3). The Chelan Glacier, exceeding 5,000 feet in depth, moved from the crest of the Cascades to a point near the Columbia River (76, p. 82). This huge tongue of ice was restricted to a narrow channel midway between Stehekin and Chelan. Bailey Willis has forwarded the theory that Lake Chelan owes its unusual depth chiefly to glacial erosion (76, p. 83).

The receding glacial melt waters were partially dammed by the debris deposited at the outlet of the former Chelan River by the Okanagan-Columbia lobe of the Cordilleran ice sheet (18, p. 60). The resultant lake extends 55 miles from the city of Chelan to within 27 miles of the Cascade crest and closely resembles a fiord. Only Crater Lake exceeds the 1,500 plus foot depth of
Figure 2

GENERALIZED RELIEF AND TOPOGRAPHIC PROFILES
STEHEKIN WATERSHED
Figure 3. Doubtful Lake in late July. Doubtful Lake is separated from Cascade Pass in the right of the picture. The view is to the south from an altitude of about 7,000 feet. The sharp, serrated, ridge in the foreground divides the Stehekin drainage from that of Flat Creek. Notice the fairly uniform elevation of peaks, both in the foreground and in the distance. To the left of the photograph the Stehekin valley takes form with its characteristic U-shape. Doubtful Creek, draining the tarn, is one of the forming headwaters for the Stehekin River. At the foot of Doubtful Lake several old mining shafts may be found. Many claims are located in this area. Notice the snow-covered ice in the lake and the alpine flowers in bloom. By mid-September the lake will be clear. Photo courtesy Paul Bergman.
Lake Chelan of which over 400 feet are below sea level. Travel via Lake Chelan is a unique and spectacular means of penetrating the Cascades. The dry, rounded hills near the south end of the lake gradually change into steep conifer-covered slopes (see Figure 4). Hills become mountains and peaks begin to exceed 8,000 feet as the Stehekin River is neared. Sheer walls of granite plunge into the lake continuing their ninety degree angle for hundreds of feet below the surface. Waterfalls emerge from hanging valleys throughout the fluvial system. Evidence of a great glacial age is almost synonymous with the topography of the area.

Many small mountain glaciers still exist within the watershed (see Figure 5 and Figure 6). Most notable of these are the Blue, Chickamin, and Dana, whose meltwaters flow through the West Fork of Agnes Creek. Towering peaks, rising sharply from deeply incised, forested, valley floors, extend above these glaciers to produce an extra-ordinary alpine wonderland (see Figures 5 and 6). Intermingled among this topographic complexity are cirques, moraines, aretes, and hanging valleys.

The peaks of the Stehekin watershed offer a multitude of challenging mountain climbs, many of which are open for first ascents. A number of massive, rugged spires have been grouped under the connotation of
Figure 4. The "Lady of the Lake." This is the largest passenger boat plying the waters of Lake Chelan. Here it is seen ready to leave for a trip to Stehekin. Note the low, rounded hills of the down-lake area. The view is towards the southeast. Photo courtesy Paul Bergman.

Figure 5. Buckner Glacier and Buckner Mountain at the head of Park Creek. Buckner is one of several glaciers that exist in the Stehekin watershed. The view is looking towards the northwest. Photo courtesy Paul Bergman.
Figure 6. Goode Mountain. The mountain rises more than a mile above the headwaters of the North Fork of Bridge Creek. Goode (Elevation 9,300 feet) is one of the higher mountains of the watershed, and is highly regarded as both a scenic and climbing attraction. The view towards the southwest shows the north face which is more complex than the southern exposure. This is true in most of the mountains throughout the watershed for glaciers are somewhat protected from insolation and as a result are larger and more active. Note the stunted mountain hemlock, characteristic of higher elevations. Photo courtesy Paul Bergman.
"ridges" and are often overlooked by climbers. Even the better known towers have been climbed only a few times and many of these are open for new route explorations. Bonanza, the sixth highest peak in Washington (9,550 feet) and the highest non-volcanic mountain in the state, was first climbed as late as 1937. Goode, (9,300 feet) the eighth highest mountain of Washington, was first climbed in 1936 and has been ascended by only fourteen parties to this date (see Figure 6). Nearly all climbs gain 6,000 feet of elevation and are classed as "Four" or greater according to the Welzenbach system (3). Over 20 peaks of elevations greater than 8,000 feet are within the watershed or immediately adjacent to it (3).

The combination of deep, narrow, forested valleys and high peaks provide many outstanding photographic subjects as well as a wealth of aesthetic values to campers, fishermen, and wilderness travelers. Unfortunately, many launch tourists are unimpressed. Boat passengers usually return the same day and many that stay in the Stehekin area wander only a short distance from their quarters. Vantage points from the lake or valley floor are few in number and give little indication of what lies behind the glacial carved walls which block out the world of ice, snow, and rushing water (see Figure 7). Only those that have crossed or risen above the wall can be aware and
Figure 7. The mouth of the Stehekin River. The Stehekin River carries a considerable load of glacial silt. During high spring waters many trees have been up-rooted and carried down stream. Sediments and debris are deposited where the river enters Lake Chelan. A considerable fan has been constructed with this material and as a result the river mouth is channeled. The photograph shows the main channel. DeVore Creek enters the river a short distance up-river from where this picture was taken. Morse's Resort is in the center foreground. The river area, from this point to Morse's, is a favorite locale for fishing from anchored boats during the spring migration of rainbow, cutthroat, and dolly varden fishes. (For some results see Figure 37.) Boating past Morse's is dangerous. Notice how the glacier carved walls hide the alpine scenery of tributary watersheds. Although McGregor Mountain (center background) and Rainbow Mountain (to the right) are scenic, they do not reveal the beauty of the region. This picture was taken after the first high country snow fall which usually occurs in September. Photo courtesy Paul Bergman.
appreciate the scenic resources of the Stehekin.

**Climate**

Climatic environment is an important resource of mountain recreation for vacationists seek not only a change of landscape but also a pleasant sensible temperature. The Cascades are one of the most dramatic climatic barriers in the world. The Marine West Coast climate (Cn-cool summer-mild, rainy winter) of the heavily populated Puget Sound Lowland changes quickly to that of a Midlatitude Steppe (BSK) and Desert (BWK) (hot dry summers and cold winters) over much of the Columbia Plateau. The Stehekin Valley provides a considerable change from both the C and B summer temperatures for the Humid Continental Cool Dry Summer climate (Dsb) found here is a transition between the two. Summer minimum temperatures are lower and relative humidity is considerably lower than coastal stations (52, p.911.10). Greater diurnal ranges provide warm weather for daytime activities and cool comfortable nights for sleep (see Climographs, Figure 8). These pleasant mountain climates stimulate a recreational transhumance.

Various phases of the D climate may be found throughout the watershed for Stehekin's lone weather station provides data for only the valley floor. If cooler weather is desired, areas of higher elevations exist.
COMPARATIVE CLIMATE STATIONS

HOLDEN
ELEVATION 3260 FT.

STEHEKIN
ELEVATION 1150 FT.

SEATTLE - TACOMA AIRPORT
ELEVATION 379 FT.

EPHRATA
ELEVATION 1275 FT.

Figure 8
Holden, Washington, on the outside periphery of the watershed, has climatic characteristics that can be generally applied to elevations around the 3,000 foot level. (See Holden Climograph, Figure 8) Here, mean summer monthly maximum temperatures are lower than Stehekin. They rarely reach 75°F. and have minimum readings averaging below 50°F. Over three-fourths of the watershed area lies above the 4,000 foot level providing abundant variation in weather due to the normal average lapse rate of 3.3°F. per 1,000 feet of elevation.

Most of the precipitation falls as snow during the winter so that peak outdoor recreation activity is possible mainly during the summer months; however, strong winds at times, on and near the head of Lake Chelan, are aggravating. The prevailing direction is from the northwest and the character of the valley is such that a funnel effect results. Waves may become dangerously high, especially farther down the lake, and small boat traffic nearly ceases. Boating and fishing are restricted around Stehekin and the constant blowing becomes enervating. Winds can be partially avoided by traveling a short distance into the valley where terrain and vegetation effectively brake their force. Winds sometimes reverse direction but the basic effect is the same.

Prevailing air movement somewhat reduces the modifying potential of such a large water body as Lake Chelan.
However, mountain-valley breeze effects combine to produce a comfortable, sensible, summertime temperature.

Hydrography

The hydrographic network of the Stehekin watershed provides an abundant variety of scenic vistas, good fishing, and camping locales. The master stream is the Stehekin River and with its tributaries forms a dendritic drainage pattern (see Figure 9).

The Stehekin River rises at the confluence of Doubtful and Pelton Creeks and for 26 twisting miles descends more than 2,500 feet. It drops over 100 feet for each of the first 15 miles rushing through gorges and plunging over obstacles not yet worn away by the turbulent water. (See profiles one and three, Figure 2) A short distance past the entrance of Agnes Creek the gradient slackens considerably, the valley floor widens perceptibly, and meanders occur. Here the character of the river changes as it becomes large and broad for the remaining 400 feet to base level are covered in a distance of eleven miles. Dry channels indicate that the river course has moved several times and much of the present stream bed is choked with large rocks and boulders little worn by fluvial erosion; however, in certain sections of the valley floor, deposits of fine alluvial sediments can be found suitable for limited agriculture.
SURFACE WATERS

STEHEKIN WATERSHED

0 1 2 3 4 5 MILES

Figure 9
The Stehekin has constructed a fan consisting largely of fine glacial silt upon entering Lake Chelan (see Figure 7). Nearly one mile of this area was flooded with the raising of the lake in 1927. The result has been a high water table with swampy conditions that have promoted a mosquito environment.

The lower portion of the Stehekin is very accessible, much more so than the section above the Agnes Creek junction; however, the entire stream with its shallow white waters restrict fishing to the banks and prohibits even the most daredevil boating enthusiast from plying the surface.

The Stehekin collects its runoff from a large number of tributaries. Agnes Creek, the main feeder stream, drains a huge watershed in its own right and carries milky white water. The glacial flour that causes the discoloration is fed into Agnes Creek by the West Fork which has its headwaters in the Chickaman, Dana, and Blue glaciers. Vertical walls of a deep miniature canyon known as Agnes Gorge confine the swift waters of Agnes Creek (see Figure 10). The gorge is approximately two miles from the confluence of the Agnes with the Stehekin. Bridge Creek tributary rushes through a deep gorge in its lower portion but widens considerably in the headwaters providing easy access for stream fishing. Flat and Park
Figure 10. Agnes Creek. Agnes Creek is confined to a steep sided gorge instead of plunging out of a hanging valley in its lower reaches. During the glacial period this large tributary watershed built up a huge lobe of ice. As a result the valley floor was scoured to nearly the same depth as that of the Stehekin. The rushing Agnes waters rival the Stehekin River in volume at their confluence. This powerful stream has become entrenched with many short falls as the photograph will suggest. Unfortunately the spectacular portion of the gorge is difficult to photograph. The picture shows one of the last falls prior to the stream's entry into a trench some 300 to 400 feet in depth. Photo courtesy Paul Bergman.
Creeks flow through broad glacial valleys. The heavy precipitation in these higher elevations fosters a thick undergrowth. Travel is difficult and discouraging to anglers even though the glacier headwaters of the stream, particularly Flat Creek, have excellent fishing. Boulder, DeVore, and Company Creeks provide the remaining tributaries of any size, each spilling from hanging valleys to the Stehekin floor.

Misty sprays of waterfalls are abundant in the headwaters of every creek. Many streams plunge hundreds of feet from hanging glaciers and snowfields. Perhaps one of the most scenic is the fall of Rainbow Creek (see Figure 11). An access road has been built to provide a vista point where this stream showers out of a hanging valley in a free fall of over 200 feet to the valley floor. One of the finest waterfall arrays exists near the genesis of Basin Creek. Glacier melt from Horseshoe Basin results in 27 falls during the runoff peak providing popular photographic subjects (see Figure 12).

High mountain lakes are not abundant in this section of the Cascades. When they occur their setting is usually in a cirque (see Figures 13 and 3). The deep, clear, icy waters, fed by snow and glacier, are often encircled by sheer rock walls. Early in the summer many waterfalls may be observed feeding the lakes which are
Figure 11. Rainbow Falls. Rainbow Creek falls over 200 feet to the Stehekin valley floor. During a sunny summer afternoon a colorful rainbow may be seen hovering over the falls. Hanging valleys such as this are common in the lower portion of the Stehekin valley and along Lake Chelan. This photograph was taken during the early spring when run-off waters were near a peak. The volume diminishes considerably by late fall. Photo courtesy Paul Bergman.
Figure 12. Horseshoe Basin. The view is towards the north from the Stehekin valley. Cascade Pass is four miles to the northwest. The peak to the left is Sahale Mountain. Park Creek is found beyond the divide to the right. Most of the serrated ridge in the foreground is the crest of the Cascades. Small wonder that alternative trails to the crest system have been built in this region! Several of the larger waterfalls that tumble out of Horseshoe Basin can be easily observed on the abrupt face of this hanging cirque. A total of 27 separate falls may be seen from various vantage points. This basin once provided a source of ice for the Chelan-Stehekin Glacier. Today the melt from the remaining snow and ice feed Basin Creek, one of the forming waters of the Stehekin River. Remnants of a motor road occur in the lower central section of the photograph. Presently, much of this road is impassible for auto traffic due to stream erosion and slides in the vicinity of Cottonwood Camp, two miles to the southeast. The road was constructed when mineral development was being attempted. Photo courtesy Paul Bergman.
dotted with small icebergs (see Figure 3). Although most water bodies are remote and small, Trapper Lake has a length of nearly one mile and can accommodate pontoon-equipped airplanes (see Figure 13). The lakes of the area have proved to be popular stop-overs or goals for campers and hikers for water is one of the determining factors in camp location.

Vegetation

The vegetation of the Stehekin watershed is an important facet of the recreational base. The virgin forests complement the rugged peaks with a green carpet spreading over the valley floors. Alpine areas burst into a colorful parkland when the many annuals are in summer bloom furnishing rolling acres of flowery campgrounds. The vegetation offers a field of study for the botanist, habitat for wildlife, and a reservoir for retarding runoff.

The region is primarily an area of virgin timber. The variety of species concentrated here is usually associated with a wide range of latitude. Sierran relief has produced many differences in climatic environment and the altitudinal zonation of vegetation is complex; however, generalized forest distribution has been drawn from available published information and field observation (see Figure 14).
Figure 13. Trapper Lake. This is the largest tarn in the region with a total length of nearly a mile. Pontoon equipped airplanes land on the lake regularly during the 2-3 ice-free summer months. There is no maintained trail into the lake but cross country access is not difficult. Fishing is excellent and the cutthroat population has a brilliant blood-red coloring. The view is towards the west with the crest of the Cascades in the background. The elevation of the lake is 4,300 feet. Photo courtesy Paul Bergman.
GENERALIZED VEGETATION COVER
STEHEKIN WATERSHED

TREE CATEGORIES INCLUDE ALL SIZE AND AGE CLASSES

DOUGLAS FIR PREDOMINANT
PONDEROSA PINE PREDOMINANT
LODGPOLE PINE PREDOMINANT
PINE MIXTURE
BALSAM FIRS, MOUNTAIN HEMLOCK &
UPPER SLOPE TYPES

WESTERN RED CEDAR PREDOMINANT
HARDWOODS PREDOMINANT
SUBALPINE FOREST
BURNS
BARRENS

Figure 14
Douglas fir (*Pseudotsuga menziesii*) is the predominant species in valleys up to 3,000 feet in elevation. Intermingled with this species are western red cedar (*Thuja plicata*), lodge pole pine (*Pinus contorta latifolia*), ponderosa pine (*Pinus ponderosa*) and hardwoods, chiefly vine maple (*Acer circinatum*), golden aspen (*Populus tremuloides*), and northern black cottonwood (*Populus trichocarpa*). Mountain hemlock (*Tsuga mertensiana*) is the major species from 3,000 to 6,500 feet, the approximate limit of forest growth. Scattered throughout is an upper slope mixture including Douglas fir, lodgepole pine, western white pine (*Pinus monticola*), alpine fir (*Abies lasiocarpa*), western larch (*Larix occidentalis*), Engleman spruce (*Picea engelmanni*), and alpine larch (*Larix lyallii*).

Most permanent and intermittent streams support a thick growth of brushy vegetation along their banks. This riverine pattern of pleasant green appears meadow-like when viewed from a distance but proves to be a formidable barrier when passage is attempted.

Undergrowth varies with locale but generally increases from the mouth of the Stehekin towards the various western passes. The open mixed pine and Douglas fir forest of the lower Stehekin gradually transcends into cover assimilating rainforest in the moist upper areas.
Here, a thick understory such as Pacific dogwood (*Cornus nuttallii*) and vine maple (*Acer circinatum*) grow in profusion.

The evergreen cover is important to the recreation welfare of the Stehekin valley for forests and outdoor activities are closely related. Much of the primitive appeal of the region would be lost if the virgin timber were stripped from the landscape. Fortunately the Forest Service is landlord of all but a small portion of the watershed.

**Wildlife**

The combination of relief, water, climate, and vegetation provides an excellent habitat for many forms of wildlife. Many of the species have been left undisturbed except for minor hunting, fishing, or trapping pressure. The recreational resource base of the watershed is enriched by the multitude of birds, mammals, and fishes. The population is varied, numerous, and still basically controlled by nature—a rare form of management enhancing the primitive value of this remote area. Reductions in population are usually the result of nature rather than man. Rough topography and good cover have somewhat protected the animals from the hunter.

A considerable number of large mammals inhabit the region. They are rarely seen on the lower valley floor
for the food in the forest still provides greater sustenance than the spoils from camps and cabins. Black bear (*Euarctos americanus*) is quite prevalent and usually observed on short trips out of the valley. Both the black and cinnamon mutation phases are found here. Local residents have reported the presence of grizzly bear (*Ursus arctos*) in the past but it is doubtful that grizzlies now exist. Stehekin was once a part of their original range and if any remain there is the possibility that they might roam through this remote area (10, p.178). Elk (*Cervus canadensis nelsoni*) occasionally wander into the region but are few in number. Mule deer (*Odocoileus hemionus*) were plentiful until the winter of 1955-1956, when heavy snow, extreme temperatures, and an abundant fall hunting harvest reduced the numbers considerably. They are gradually returning, however, and present indications give promise of a good supply in the near future. The mountain goat (*Oreamnos americanus*) is one of the outstanding wildlife features. The rocky crags provide a suitable habitat for hundreds of these mountain dwellers. Occasionally trophy hunters seek out specimens under special hunt regulations.

The cougar (*Felis concolor*) is a native of the area but one that is rarely seen. This graceful animal has been needlessly slaughtered by bounty hunters and its
numbers have been reduced considerably. Other large size cats that roam the region include the Canadian lynx (*Lynx canadensis*) and bobcat (*Lynx rufus*). The timber wolf (*Canis lupus*) may possibly be found between Lake Chelan and Mount Baker (10, p.233). The coyote, a close relative of the wolf, is more prolific and manages to survive the bounty seekers.

Furbearers once provided a substantial income when the demand for pelts was high. Now, only an occasional beaver (*Castor canadensis*) or marten (*Martes americana*) are trapped. Marten is the most prevalent fur bearer of any value although the shorttail weasel (*Mustela erminea*) may exceed it in numbers. Mink (*Mustela vison*) are in evidence but they are widely scattered. There have been signs of wolverine (*Gulo luscus*), river otter (*Lutra canadensis*), fisher (*Martes pennanti*), and the red fox (*Vulpes fulva*) but their numbers are not abundant and the fisher and otter appear absent at the present time.

Fish abound in the lakes and streams of the Stehekin watershed. The Montana black-spotted (*Salmo clarkii lewisi*), or more commonly the cutthroat, is the most prevalent stream fish although the numbers have been greatly reduced in some areas due to mis-management. Dolly varden (*Salvelinus malma spectabilis*), the native charr, reaching sizes of 15 pounds, was once abundant in
Lake Chelan and the lower Stehekin River but is presently on the verge of extinction (12, p. 237). Many exotic species of game fish have been introduced but only a few survive in any great numbers. The rainbow trout (*Salmo gairdneri*) has been successfully planted in the lake, the Stehekin River, and many tributaries. This fish proves to be difficult competition for the cutthroat. Eastern brook trout (*Salvelinus fontinalis*) have survived in only one small stream and do not constitute an important game resource. The landlocked blueback salmon (*Oncorhynchus nerka*) thrives in Lake Chelan as long as annual plants are made and invades the lower Stehekin during the fall spawning run. Perhaps the most unusual form of marine life affording sport to the angler is the freshwater variety of ling cod (*Lota maculosa*) or burbot, native to the great depths of Lake Chelan.

Blue grouse (*Dendragapus obscurus*) and franklin grouse (*Canachites franklinii*) are inhabitants of the lower coniferous forest. Waterfowl are rare except for occasional species that stray off the flyway and reside in the Stehekin for the summer. Other game birds are seldom seen and only irregularly enter the region.

**Cultural Features**

Man's modification of the natural environment has been negligible. He has penetrated only a small section
and has done so in a rustic manner. Resource development has never been carried on intensively and occupancy has been stagnant for years.

Settlement roughly occurs in two clusters. One is located in the area around the head of the lake where livelihood is gained by catering to tourists. The other node is concentrated on the right bank of the river in the vicinity of Company Creek. Scattered settlement between these points has been based on the proximity of water and level land. Residents earn a living from a limited number of opportunities such as trapping, wood cutting, logging, packing, county road work, and employment with the United States Forest Service.

The economy and major activity of Stehekin is based on tourism. Four resorts have been built, all on Lake Chelan's shore (see Figure 15). Two are located on the Purple Creek fan and the others are on the alluvial fill of the Stehekin River. The business node, Stehekin Landing, consists of a cafe, photo shop, post office, and public boat mooring. (See Figures 15 and 16) Moorage is also available at all of the resorts and permitted at the Manson Boat Club dock which is located a short distance from Stehekin Landing. The center of community activity revolves around the noon arrival and afternoon departure of the daily passenger boat which carries supplies,
Figure 16. A section of the Stehekin business node. The view is from the public freight dock. The dock is a beehive of activity between the hours of twelve noon and one-thirty p.m. Residents await mail and guests. Few round-trip passengers wander out of the immediate foreground during the layover period. Refreshments and food may be purchased at the cafe and tavern. Golden West Lodge lies to the left of the area - Swissmont to the right. Automobiles are available for rental and taxi service. Photo courtesy Paul Bergman.
tourists, and mail. Summer and yearly residents mill around the wharf and wait for the mail to be posted while others are busily engaged in accommodating guests. With the departure of the passenger boat, the "sleepy hollow" atmosphere returns until the following day.

Transportation is provided by a twisting one-way gravel route that follows the Stehekin River to Cottonwood Camp, six miles from Cascade Pass (see Figure 15). Tourists, residents, and loggers make use of this 23 miles of road maintained by Chelan County. In the vicinity of Company Creek a bridge leads to four miles of road on the right bank of the river where a number of summer and permanent homes and a small saw mill have been constructed. From Cottonwood Camp, remnants of a road eventually lead into Horseshoe Basin, a mineralized area unsuccessfully exploited several times (see Figure 12); however, much of this route is impassible for autos due to slides and erosion by high spring waters.

Eight improved campgrounds are maintained by the U. S. Forest Service. (See Figure 15) All contain tables, toilets, fireplaces, and garbage disposal facilities. Two guard stations, one uninhabited, and three barns with stables are also Forest Service constructions. Fire lookout remnants may be found on Boulder Butte, McGregor Mountain, Goode Ridge and in the Copper Creek
area. Trails lead off in many directions providing access into all of the major tributary valleys and many of the smaller ones (see Figure 15). Many unimproved campsites may also be found. Decaying, deserted cabins and rusting equipment in Horseshoe Basin, at Doubtful Lake, and in the headwaters of Bridge Creek are signs of an early era of prospecting.

Although the trail mileage is extensive, most of it remains along valley floors and one must strike out on his own above the timber to find the outstanding vista points. Once off the trail or road, cultural features disappear and the true wilderness predominates.
CHAPTER THREE
THE EVOLUTION OF RECREATIONAL USE AND DEVELOPMENT

No precise plan seemed evident in the movement of man into the Stehekin area; however, in retrospect, a definite pattern of resource use is apparent. Trappers and prospectors were the first entrants. Scouting parties of railroad and army officials followed, seeking a suitable pass through the Cascades. A surge of prospectors infiltrated the Stehekin during the period of the Klondike gold rush. In addition to the gold seekers, opportunists entered the watershed to supply the miners with food and other essentials. Many of those who came related glowing tales of the primeval beauty and abundant game. Sportsmen were attracted and utilized the early developed commissaries. Certain entrepreneurs realized the business opportunities of serving the sportsmen and the recreation industry had its genesis.

The Period of Discovery

It is assumed that prospectors and trappers had known the Stehekin watershed prior to 1850 but it was not until the 1880's that information was published on the region (53, p.673). During the latter part of the 19th century the War Department dispatched reconnaissance parties to little-known areas of the Pacific Northwest.
The Army established posts, forts, and routes in strategic places to impede Indian travel and concentrations. A Lt. Thomas W. Symons visited Lake Chelan in the summer of 1879, in search of a suitable site for a military post. Lt. Symons, accompanied by a Colonel Merriam and two Indians, traveled twenty-four miles up-lake by canoe with Merriam eventually going the entire distance. He reported that the region around the head of the lake was "wonderfully grand" with vertical walls containing undecipherable hieroglyphics (55, p.40).

In 1882 the Stehekin valley was explored in a traverse from the head of Lake Chelan to Cascade Pass. Lt. Henry H. Pierce led the exploration and gained entrance to the Stehekin valley in the vicinity of Purple Creek after crossing War Creek Pass from the Twisp drainage. Pierce's first comment on the area as viewed from an elevation of 7,000 feet was:

"No painter could place the view on canvas and be believed." (44, p.16)

This was the valley of the Sta-he-kin, the "Way Through the Mountains". The traverse was difficult but successful and the group descended the Skagit River to

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1 The interpretation of Sta-he-kin was given to Dan DeVore by the Chelan Indians.
report that:

"beyond the crossing of the Twisp, the route passed over from Colville to the Sound could in no wise be recommended." (44, p.16)

After this brief exploration, information regarding the beauty and resources of the region spread rapidly and settlers began to reside in the valley and along the lake.

Pioneer Recreation

John W. Horton was one of the first permanent settlers in the Stehekin valley. Horton entered in 1885 and homesteaded 160 acres near the head of Lake Chelan. In 1892, W. E. Field and his family moved from Ellensburg, obtained Horton's property and buildings, and established a resort. Field enlarged the buildings and completed a tourist hotel in 1906. The finished structure was three stories tall and contained fifty rooms. (See Figure 17) It was operated by Field from 1892 until the summer of 1915.

The Field Hotel developed a relatively good business. Pack horses, good meals, a relaxing environment, and outstanding fishing were the greatest assets. As many as 200 guests were registered at the hotel at one time. Resort records show that over 1,000 people vacationed

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2 Much of the information for this section was related by Mr. Harry Buckner and Mr. Hugh Courtney.
Figure 17. The Field Hotel. This was the earliest, largest, finest, and most successful hotel ever established in the Stehekin valley. The raising of Lake Chelan in 1927 flooded this site and many others which were well-suited for resort development. The view is to the northwest with McGregor Mountain reflected in the calm headwaters of Lake Chelan. The photograph was taken during the early 1900s. Photo courtesy Mrs. Walter Spicker.
there during 1901, nearly as many as stayed at all four present resorts during the 1957 season. Repeatedly, tourists from the Pacific Northwest, California, and eastern states returned. Visitors included a few notables, namely, Baily Willis, R. D. Salisbury, and Gifford Pinchot. Many came for trout fishing which was excellent. These fish were reported to be easily caught along any place in the river or lake at any time of the year (see Figure 18). The dolly varden fishing was also excellent although the great size of the fish in later years did not appear until after the planting of land-locked blueback salmon.

Field was not the only person interested in the recreation industry. W. F. Purple took up a homestead on Purple Creek fan, the present site of Stehekin Landing, in 1892, and established a type of family resort. Although not nearly as large as Field's enterprise, trade was sufficient for a successful business.

The first excursion boat plied the waters of Lake Chelan in 1891. Wood-burning steamboats required a full day to make a one-way trip, consequently old stern-wheelers were equipped with staterooms and dining halls (see Figure 19). Transportation from Wenatchee to Chelan during the early days presented more difficulty than arriving at the head of the lake. Before James J. Hill's
Figure 18. Stehekin River fishing of yesteryear. According to long-time residents, catches, such as are pictured here, were common place in the early 1900s. It is assumed that the fish are cutthroat trout. Note the number and size of the fish and the presence of only one angling rod. Although fishing such as this is presently non-existent, many tributary waters yield excellent harvests. The locale is approximately 5 miles up the Stehekin River from the mouth. Photo courtesy Paul Bergman.
Figure 19. One of the early passenger launches leaving Moore's Resort. The number of passengers indicate a sizable tourist trade on the lake. Lucern and Holden lie across the lake in the background. Considerable prospecting activity was occurring during this early 20th century era. Photo courtesy Hugh Courtney. (The photograph was taken by Mr. J. Robert Moore, who was Mr. Courtney's father-in-law.)
spur line along the Columbia was completed, river boats were the only means of transportation from the Wenatchee rail depot. Swift water and dangerous rapids resulted in a thirteen hour trip up the turbulent Columbia. After finally arriving at Stehekin, the public had no choice but to remain at least one night and many stayed longer.

Thus the recreation picture remained stable. An abundance of well-satisfied visitors returned faithfully bringing friends to admire the scenery, to relax, or to try their luck as nimrods.

Campers, not utilizing the resort facilities, were also numerous. Arriving at Stehekin, they would hire transportation from the Field Hotel and ride to High Bridge leaving orders for rations to periodically supplement their commissary if the length of stay was extensive. From the High Bridge area they would strike out on available trails to fish in untouched waters or to climb the surrounding peaks. One of the first recorded outings of this type was made by the Mazamas, an outdoor club, during the summer of 1899. Their goal was Horseshoe Basin, a three day hike from Stehekin. For one week this group camped near the Stehekin River in the vicinity of the Basin. During the stay they scaled several peaks, one of which they named Sahale. Upon reaching the summit of the mountain William G. Steel, a noted geologist of
that day and member of the summit party, declared:

"I have spent twenty-three consecutive summers in the mountains of the Pacific Northwest, have stood upon Rainier, Hood, Adams, St. Helen's, and other peaks, and supposed that I had witnessed the choicest scenes of the earth, but they all pass before this one, and when compared to it are as the flat and desolate prairie to lordly Rainier, king of mountains." (54, p.414)

A. S. Pattulo also relates about the same trip:

"This is an outing which might well be taken often and without doubt it will be in the future one of the finest mountain scenic trips in the world—I write advisedly. At present it is not known or advertised as it ought to be." Also: "I have seen the famous view from the Righi in Switzerland, but it does not compare with the view from Mount Sahale in the Cascade Mountains." (41, p.141)

This group and many others like it valued the resources of the region. In 1910 seventy members of the Seattle Mountaineers held a mass outing and climbed Glacier Peak. Again in 1912, the Mazamas entered the Stehekin with Glacier Peak as their goal.

Walter Prichard Eaton, who had included a chapter on the head of Lake Chelan in his book Skyline Camps (13), wrote in a letter to the Sierra Club:

"Some day Lake Chelan will take its place as one of the nation's famous scenic reservations. But, we are glad we got there before the rush." (12, p.237)

Another illustrious visitor was Mary Roberts Rinehart. She made a trip through the area in 1916 and
wrote a short travelogue concerning her Stehekin outing. The Great Northern Railroad sponsored her trip with the idea of attracting attention for a National Park (48, p.89).

The area at the head of Lake Chelan was not the only place receiving attention from recreationists. Important developments took root along the lake shore where suitable sites were found. Perhaps the most notable activities took place at Moore's Point, the alluvial fan of Fish Creek some ten miles down the lake from the Stehekin River (see Figure 19). These new developments were associated with J. Robert Moore, a New Yorker, who homesteaded on Fish Creek in 1900 (53, p.691). Moore was following in the footsteps of his father who ran an exclusive resort in the east. He constructed a 20 room hotel in 1895 and catered to a very exclusive type of trade. Rest and relaxation with good meals, beds, peace and quiet were the assets of his establishment and he was very successful (see Figure 20). Long-term tourists were frequent with many staying a period of a month or more. Reservations were required and new guests had to furnish a recommendation.

Miss Lydia George opened the Bridge Creek Cabin in 1911, some 16 miles up the Stehekin Valley, and operated cooking and camping facilities for prospectors and
Figure 20. Early-day vacationers at Moore's Inn. Costumes, mode of diving, and row boats would indicate that the scene is early 20th century. Photo by J. Robert Moore, courtesy Hugh Courtney.

Figure 21. Morse's Resort. This resort was constructed during the early 1940s. It is situated on the left bank near the Stehekin River mouth. Photo courtesy Paul Bergman.
fishermen. In 1922, she expanded her operations and developed a resort near Rainbow Creek called Rainbow Lodge. This was run with varying degrees of success until 1942.

In 1900, the first boat company was formed although water transportation had been available as early as 1890. As business increased a "Fishing Special" trip was instigated by the Tuttle Brothers which ran successfully until 1927. The craft would leave Chelan at 10:00 P.M., Saturday evening, and arrive at Stehekin at 3:00 A.M., Sunday morning. About 25 to 30 passengers usually made the trip. They would fish in the river most of the day, catching limits of cutthroat and dolly varden (see Figure 18). The return trip would leave Sunday afternoon.

The Period of Decline and Some Responsible Factors

The wood-burning sternwheelers were not replaced with gasoline powered launches until 1915. On July 4, 1914, Captain H. S. Burley made a one day round trip on Lake Chelan. This was the first such trip in the history of water transportation on this lake. The type of trade now seemed to change. The wood-burners, formerly plying the lake, were capable of only a one-way trip each day and schedules were so arranged that each boat left the opposite end of the lake at approximately the same time. With the introduction of daily round trips the bulk of the tourists were not staying over, but rather making use
of this new schedule. The pace of the public seemed to quicken for automobiles became more widespread and faster means of travel became possible.

The Great Northern Railway, owner of the Chelan Electric Company, had visions of raising the level of Lake Chelan for reservoir purposes and power generation. The company purchased the Field Hotel and property in 1916 and ran the resort until 1926. The County Game Department established a hatchery at the mouth of the Stehekin River in order to acquire cutthroat eggs for stocking other areas. In 1916 a period of heavy trapping began. From this period, until 1927, the year in which the lake was raised 21 feet, fish were intensively trapped as shown by Table 1.

### TABLE 1

Cutthroat spawners trapped, eggs taken and returned from 1916 through 1927.

<table>
<thead>
<tr>
<th>Year</th>
<th>Cutthroat Taken</th>
<th>Eggs Taken</th>
<th>Eggs Returned</th>
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</thead>
<tbody>
<tr>
<td>1916</td>
<td>1,697</td>
<td>1,560,575</td>
<td></td>
</tr>
<tr>
<td>1917</td>
<td>503</td>
<td>556,900</td>
<td></td>
</tr>
<tr>
<td>1918</td>
<td>1,513</td>
<td>1,363,850</td>
<td></td>
</tr>
<tr>
<td>1919</td>
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<tr>
<td>1927</td>
<td>9</td>
<td>6,000</td>
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Source: Compiled by Randy Morse from information furnished by the Washington State Game Department.
The cutthroat fishing, once so famous, began to diminish about 1924 and apparently the hatchery anticipated the decline for in this year they began to restock Chelan and Stehekin waters (see eggs returned column, Table 1). With the formation of the Washington State Department of Game in 1933, plants of exotic fish were initiated.

The raising of the lake in 1927 flooded out the site of the old Field Hotel. In 1926 the building was torn apart and Jack Blankenship bought the lumber. He rebuilt sections of it on the Purple property in 1927 and established Golden West Lodge. Business did not warrant the investment, however, and he was forced to sell in later years. Since this time trade has been marginal except for the World War II years when gas rationing limited auto use and there was a noted acceleration (see Table 2).
TABLE 2
Total number of one way trips on the Lake Chelan Passenger boats. 1929 through 1956.

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<th>Year</th>
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<tr>
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<td>20,816</td>
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<tr>
<td>1954</td>
<td>22,126</td>
</tr>
<tr>
<td>1953</td>
<td>20,114</td>
</tr>
<tr>
<td>1952</td>
<td>22,048</td>
</tr>
<tr>
<td>1951</td>
<td>21,128</td>
</tr>
<tr>
<td>1950</td>
<td>18,936</td>
</tr>
<tr>
<td>1949</td>
<td>19,294</td>
</tr>
<tr>
<td>1948</td>
<td>21,120</td>
</tr>
<tr>
<td>1947</td>
<td>22,235</td>
</tr>
<tr>
<td>1946</td>
<td>20,296</td>
</tr>
<tr>
<td>1945</td>
<td>19,387</td>
</tr>
<tr>
<td>1944</td>
<td>Unknown</td>
</tr>
<tr>
<td>1943</td>
<td>Unknown</td>
</tr>
<tr>
<td>1942</td>
<td>23,580</td>
</tr>
<tr>
<td>1940</td>
<td>8,580 (Times 2?)</td>
</tr>
<tr>
<td>1934</td>
<td>2,880 (Times 2?)</td>
</tr>
<tr>
<td>1933</td>
<td>2,200 (Times 2?)</td>
</tr>
<tr>
<td>1932</td>
<td>2,394 (Times 2?)</td>
</tr>
<tr>
<td>1929</td>
<td>3,854 (Times 2?)</td>
</tr>
</tbody>
</table>

Source: Lake Chelan Boat Company.

The Present Period

The thought of an eventual prosperous recreational industry combined with the pleasure of residing in the area, instigated further development. The Stehekin Cabin resort was opened on the right bank of the river and Morse's Resort on the left (see Figure 21). Swissmont is the latest addition offering four housekeeping units on Purple Point near the Stehekin Landing and further building is presently in progress.

Although business was partially satisfactory after
the war the anticipation of a postwar, travel-minded tourist influx was never realized. The disasters of the 1948-49 flood adversely affected the Stehekin creating further difficulties. Excess water, pouring through the valley, changed the course of the river in a number of sections which was harmful to the fish population. Breeding grounds were eliminated or washed out and the great dolly varden began to disappear. This fish had attained sizes of 15 to 20 pounds and was an important gaming attraction. Enterprisers, anxious to stimulate a sagging business, constructed more improvements in 1951 with the establishment of a tavern, restaurant, and a U-Drive rental service.

Although business is at times moderately successful, the immediate picture is rather dark as it has been for the past several years. Changing ownerships, a lack of capital, and an inadequate public relations program have resulted in small returns in comparison to the potential available. It is generously estimated that about 1,500 persons use the overnight guest facilities each summer. This is not a notable business improvement over the 1,000 plus visitations of 1901.

Little has been done in the past 20 years to stimulate tourist activity; however, interest is mounting, not in the cultural attractions or facilities, but in the natural wonders. The public is rediscovering and
recognizing the unique topographic beauty of this region. The Mountaineers, Mazamas, Sierra Club, and Trail Riders of the Wilderness have been entering in increasing numbers since the end of World War II. A substantial number of groups pass through Stehekin in quest of mountain camping sites and peaks. Many enter through Cascade and other passes and establish base camps for further exploration. These club outings are only a small sample of what the future can hold for this type of outdoor recreation. Family groups, scout troops, fishing enthusiasts, wilderness advocates and many other types are utilizing the area in increasing numbers. The author, during the summer of 1957, counted 54 persons in Cascade Pass from Friday night to Sunday morning including all age groups, from children four years to elderly folk of over 60.

The recreational potential of the Stehekin will be increasingly valued. There is a sound economy to be established from this type of use for outdoor enthusiasts require goods and services. There are prospects for the establishment of a Wilderness Area within the borders of the watershed and proper retail development will be allowed along the periphery. Here lies one of the many opportunities for a new era in recreation in the Stehekin based on the natural resources.
CHAPTER FOUR
THE EVOLUTION AND EVALUATION OF COMPETITIVE ACTIVITIES

Recreation is not the only possible use of Stehekin's resources. Ventures in mining, logging, trapping, and agriculture have been attempted in the past. The water resources have been utilized for many years. Renewed effort or expansion by the exploitive industries is always a probability. The potentials of all land use need examination in order to justify a recreational dedication of this region.

Mining

The opening of the Stehekin watershed was very similar to that of other uncharted areas. First penetrations were by trappers, then by a wave of prospectors who opened it with pack trails and wagon roads. The early populations, of any consequence, were concerned principally with the mineral resources. The 1882 report of Lt. Henry Pierce mentioned prospectors. These men said they had been in the hills 32 years, spending the last seven in search of a "rather legendary mountain of golden quartz" (44, p.16).

Dan DeVore, one of the first Stehekin residents, was lured into the area in 1886 with hopes of claiming some of the region's mineral wealth (48, p.89). Although he
never discovered ore of great worth, he ran a pack train carrying provisions to prospectors and thus benefited indirectly. DeVore's business was active in these early days for a gold rush occurred in Company Creek before the call of the Klondike although much of the later activity was due to a back-wash of miners from this famous bonanza. In 1888 and 1889 the rush in Company Creek resulted in over 1,000 men residing at the head of Lake Chelan.

George Rouse staked the first mining claim of any importance at Doubtful Lake in 1888. Lead and silver were the main minerals and further exploration resulted in a total of 18 claims before the area was abandoned (30, p.485) (see Figure 23).

Perhaps the most noted mineral area of the region lies in Horseshoe Basin. M. M. Kingman and A. M. Perhsall were the first prospectors to stake claims in this mineralized basin and located the Black Warrior and Blue Devil claims. They sold their holdings in 1891 to Markle and MacFarland for 30,000 dollars—the largest and only sale of mining property made in the Stehekin watershed (30, p.486). This prospect was abandoned until the mid 1940's when the Black Warrior Mining Company attempted to develop the claim; however, the adversities of climate and topography proved to be too formidable and operations ceased after the completion of approximately
AREAS OF PROSPECTING AND MINING ACTIVITY IN OR NEAR THE STEHEKIN WATERSHED

- MINES (INACTIVE)
- PROSPECTS

0 1 2 3 4 5 MILES

Figure 23
700 feet of shaft (see Figure 24). Other prospectors followed Kingman and Pershall and found minerals higher in the basin. In the early 1900's the Horseshoe Basin Mining Company attempted to develop some consolidated claims under the leadership of Henry Buckner. In spite of concentrated effort and 1,000 feet of tunnel evacuated by hand labor, the project was abandoned in 1910. Reactivity occurred during the period of the Black Warrior Mining Company's operations. The development attempt was reorganized under the auspices of the Horseshoe Basin Mining and Development Company. Promotion was financed through the sale of stock. Both organizations appealed cooperatively, and successfully, to the state for a mine-to-market road. Hence, the Stehekin road was extended into the basin at a great expense. No further significant improvements were made in the upper basin by the Horseshoe Basin Mining and Development Company. Operations ceased in 1951 when slides blocked the road and took a heavy toll of equipment. Today shafts and equipment remain in mute evidence of an unsuccessful exploitation.

Minerals also showed promise in the north Bridge Creek area during the early years (see Figure 23). In the Chelan Leader of August 20, 1897, Dan DeVore summarized that the whole Bridge Creek section was mineralized
Figure 24. Part of the Black Warrior Development. A small fortune in development and mining equipment lies high in Horseshoe Basin. In spite of the abundance of mineralized veins locational factors have posed formidable problems and have hindered development. Photo courtesy Paul Bergman.

Figure 25. A mill at the Howe Sound Mine, Holden, Washington. Contrast summer working conditions with the winter scene in Figure 26. Photo courtesy Paul Bergman.
and bound to become one of Lake Chelan's leading mining camps (39, p.1). In an earlier issue it was stated that:

"One of these days tremendous mountain crags will reverberate to the music of a brassy and noisy mining industry." (1, p.1)

Active prospecting prompted the building of a wagon road to Bridge Creek that followed the Stehekin River over most of the route. Plans were also made for an extension across Cascade Pass; however, with the lag in activities, after the turn of the century, the road was abandoned and remained open only to Bullion Cabin, some ten miles up the Stehekin valley. In 1937 the route was designated by the state as a branch of State Highway 17. Plans included an eventual connection with Marblemount, Washington (see Figure 1). It was turned over to the county in 1950.

Failure of mining operations has not always been the case in the Lake Chelan region, for one of Washington's most important mineral developments occurred on the edge of the Stehekin watershed. The greatest copper producer in the Pacific Northwest was located near the head of Railroad Creek, ten miles down lake from Stehekin (see Figure 23). J. H. Holden filed claims in the area in 1892. A rush resulted about the turn of the century and in 1901 the Chelan Transportation and Smelting Company began construction on a railroad bed. The Howe Sound Company bought up the developments in 1928, further
improved the Holden claims, and began operations in 1938 (5, p.7) (see Figure 25). At its peak the Holden Operations mined over 2,000 tons of ore daily and had a substantial by-product output of zinc, silver, and gold (5, p.2). The Holden mine ceased operations in 1957. Although ore was still available, drop in prices and increased expense of recovery did not warrant continued operation.

The dream of mineral wealth still remains high among Stehekin prospectors for recent explorations have occurred in Company Creek and Swamp Creek areas with sizable ore bodies being discovered; however, topography and climatic conditions have been delimiting factors in development (see Figure 26). Perhaps, in the far future, when other more accessible mining areas have been fully exploited, the United States will sorely need the hard-earned copper, gold, silver, lead, and zinc found in the Stehekin section of the Chelan Batholith. Until then the minerals are in safe keeping and exploitation seems unwarranted. Other resources require a greater share of attention and are presently more valuable if developed carefully and properly.

Logging

There is a conflict of interests and concern over the proper utilization of Stehekin's timber resources. This
Figure 26. The winter season at Holden, Washington. Over 500 inches of snow have fallen during a single winter. Similar climates exist throughout the watershed and become more severe at higher altitudes (Holden 3,200') where most of claims occur. Nature has provided a harsh physical environment for all phases of mining activity. Photo courtesy Paul Bergman.
is relatively recent for early lumbering operations were small and few and did not seriously conflict with other uses. Timber in other regions was abundant and the isolation of this area deterred exploitation. In 1939 the United States Forest Service created a Glacier Peak Limited Area which included a portion of the Stehekin watershed. This locked up some of the prime timber, from the logger's standpoint, that was beginning to have economic value. As prime virgin stands diminished in the Pacific Northwest the timber within the Limited Area increased in value and finally in 1955, lumber companies from both sides of the Cascades exerted pressure for a reduction in boundaries. They stated that the ripe timber enclosed within the borders needed cutting and was essential to the industry. The Chelan Box Manufacturing Company, which had acquired private land in the Stehekin valley containing approximately two million board feet of timber, sent in a crew during the summer of 1956 and began harvest operations (see Figures 27 and 28). Operations ceased on July 30, 1957, due to the uncertain boundaries of the Limited Area. The ensuing battle has been billed as "Scenic Resources vs. Apple Boxes" (4, p.14).

The timber resources of Stehekin are considered to be of vital importance to the future economy of Chelan and surrounding populations. In a prospectus, issued by
Figure 27. Logging operations on the Stehekin valley floor. Loggers invaded the Stehekin watershed for two summers. Pines are the chief species that were sought—timber that is not abundant in the area. Harvest practices were neat and orderly in comparison with other areas. Photo courtesy Paul Bergman.

Figure 28. The log dump at the head of Lake Chelan developed by the Chelan Box Manufacturing Company. Photo courtesy Paul Bergman.
the United States Forest Service in February of 1957, regarding a proposal for reclassification of the Glacier Peak Limited Area and relocation of the boundaries, estimates were given on the lumber contained therein. Of special import are the figures given for that portion of the Stehekin watershed being considered for inclusion (see Table 3 and Figure 29).

**TABLE 3**

Stehekin Timber included within the Glacier Peak Limited Area and the proposed Wilderness Area.

<table>
<thead>
<tr>
<th></th>
<th>Present Limited Area</th>
<th>Proposed Wilderness Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial Timber (Acres)</td>
<td>18,233</td>
<td>17,479</td>
</tr>
<tr>
<td>Non-commercial Timber (Acres)</td>
<td>117,322</td>
<td>202,479</td>
</tr>
<tr>
<td>Total Acres</td>
<td>135,555</td>
<td>220,350</td>
</tr>
<tr>
<td>Commercial Timber Volume (MBF)</td>
<td>556,674</td>
<td>558,679</td>
</tr>
</tbody>
</table>


The Chelan Box Manufacturing Company has also taken stock of timber supplies within the watershed and have cruised much of the area through aerial photographs. Their figures are based on 1800 board feet per tree and the following volumes represent a 60 per cent allowable cut on operable timber land (see Table 4).
TIMBERLAND TYPES
STEHEKIN WATERSHED

DOUGLAS FIR, OLD GROWTH—60%
DOUGLAS FIR, SECOND GROWTH
6-20"—60%
DOUGLAS FIR, SAPLINGS, UNDER
6"—60%
PURE PONDEROSA PINE, OVER
22"—80%
PINE MIXTURE, OVER 12" (20 TO
50% PONDEROSA PINE)

BALSAM FIRS, MOUNTAIN HEMLOCK &
UPPER SLOPE TYPES, OVER 12"—50%
BALSAM FIRS, MOUNTAIN HEMLOCK &
UPPER SLOPE TYPES, UNDER 12"—50%
PROPOSED GLACIER PEAK WILDERNESS BOUNDARIES
EXISTING GLACIER PEAK LIMITED AREA BOUNDARIES

Figure 29
TABLE 4
Results of aerial cruises
by the Chelan Box Manufacturing Company

<table>
<thead>
<tr>
<th>Drainage</th>
<th>M.B.F.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agnes Creek</td>
<td>180,000</td>
</tr>
<tr>
<td>West Fork Agnes</td>
<td>70,000</td>
</tr>
<tr>
<td>Flat Creek</td>
<td>34,000</td>
</tr>
<tr>
<td>DeVore Creek</td>
<td>53,000</td>
</tr>
<tr>
<td>Company Creek</td>
<td>48,000</td>
</tr>
<tr>
<td>Cabin Creek</td>
<td>30,000</td>
</tr>
<tr>
<td>Upper Bridge Creek</td>
<td>70,000</td>
</tr>
<tr>
<td>North Fork Bridge Creek</td>
<td>25,000</td>
</tr>
<tr>
<td>Park Creek</td>
<td>54,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>554,000</td>
</tr>
</tbody>
</table>

Source: Chelan Box Manufacturing Company, Manson, Washington.

Although the known reserves, shown by the tables, are not astoundingly high when compared to the Pacific Northwest total of 748.9 billion board feet, they could represent an important segment in the local economy if heavy dependence is placed upon them.

The Chelan Box Manufacturing Company averages an annual cut of 12 million board feet. Their mill employs 160 men on approximately a ten month basis. Future cutting will rely on the forest resource of the Stehekin, if available, for down-lake stands cannot supply future demands. This small operation represents an annual revenue of $1,200,000 in the Lake Chelan area in comparison to the $1,000,000 that is now received from the tourist industry as estimated by the Chelan Chamber of Commerce.
Since cutting has been conducted in the Stehekin, a great increase in county road expenditures has been noted with improvements beneficial to the recreation industry. Harvest of additional timber would benefit the Chelan area economy, provide additional access roads in the Stehekin watershed, and supplement the dwindling lumber supply of the Chelan Box Manufacturing Company.

The effect that a timber harvest would have on water runoff has been estimated as slight. Nearly all of the commercial forest lies below the 4,000 foot contour. From the snow surveys of the Chelan County Public Utility District it appears that logging below this level would not have an appreciable influence on spring snow melt for most of the winter precipitation lies above this level (see Table 5).

**TABLE 5**

Chelan Public Utility District Snow Survey in the Stehekin Watershed--April 1 to July 31, 1957.

<table>
<thead>
<tr>
<th>Elevation</th>
<th>Area (acres)</th>
<th>Inches water</th>
<th>Water storage acre feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>1100-2000</td>
<td>6,210</td>
<td>15.4</td>
<td>7,949</td>
</tr>
<tr>
<td>2000-3000</td>
<td>15,490</td>
<td>28.5</td>
<td>36,711</td>
</tr>
<tr>
<td>3000-4000</td>
<td>29,560</td>
<td>39.1</td>
<td>96,366</td>
</tr>
<tr>
<td>4000-5000</td>
<td>42,800</td>
<td>45.5</td>
<td>162,212</td>
</tr>
<tr>
<td>5000-6000</td>
<td>60,340</td>
<td>48.3</td>
<td>243,190</td>
</tr>
<tr>
<td>6000-9000</td>
<td>85,220</td>
<td>48.7</td>
<td>337,873</td>
</tr>
</tbody>
</table>

DeVore and Purple Creek drainages are not included in this survey.

Over one-half of the total acreage lies above the 4,000 feet elevation contour and at the time of the survey, in Table 4, 743,255 acre feet were stored above this level, over three-fourths of the Stehekin River's annual runoff.

The value of harvesting a forest resource in contrast to the value that this resource adds to the recreational base is a problem of vital importance. It is somewhat difficult in this case since accurate timber statistics on volume and type are vague and lacking; however, based on available information, a generous estimate would place the commercial forest reserve in the neighborhood of 600,000 million board feet. Although the establishment of a working circle in the Stehekin watershed may be vital in retaining a portion of a local box company's employees, the significance of this timber to the regional and national economy is slight.

Some light may be shed on this problem by taking an account of regional resource deficiencies and surpluses. There are many other areas with better-suited environmental conditions for timber production. The United States South is a prime example. The western slopes of the Cascades far outstrip the eastern flank in timber harvest and regrowth possibilities (52, p. 911.64). The Cascades of southern Washington and most of Oregon have
a superior forest environment. Much of the Coast Range is potential timber land. Second-growth timber in the Stehekin area would require 120-140 years to mature according to the United States Forest Service. Stripping this timber for the benefit of a few individuals seems unrealistic. The greatest benefit would seemingly be derived by leaving this forest mantle untouched. The rewards for doing so will be extended to future generations as well as profit the citizens of the present.

While the balance of nature is being interrupted in many of the nation's forested lands it remains nearly intact here. Streams are free of soil sedimentation. Scars of logging activities are absent from the landscape except for minor effects of recent logging. These are assets that are an integral part of outdoor recreation. They are found on only a small section of this nation's surface and are concentrated mainly in the west. Populations of the east and south lack such surroundings.

Advances in forestry and agriculture are constantly opening new possibilities for timber production in sub-marginal crop lands, logged off areas, and especially in former waste-lands of the United States South.

The forest reserves of the Stehekin watershed are a national heritage and not for the sole benefit of Chelan County or the State of Washington. Utilization of this
timber for lumber production would be detrimental to the natural beauty and strongly reflect upon the economic potential for recreation. Finally, it seems only fair to protect a portion of remaining virgin forests for future generations to enjoy. A few decisions regarding the disposition of our natural resources are rightfully theirs.

Some conservationists will regard this preservation as highly wasteful. The timber is ripe; it will rot and decay if not harvested. Before the slow degeneration of a half-billion board feet of timber is taken too seriously there are a variety of wasteful practices that require primary consideration in the field of resource exploitation. Scenery is a resource and in many cases the only means of conservation is through preservation. Stehekin deserves this consideration. The recreational values far out-rank those that would be derived from a timber harvest.

Water Resources

The water resources of the Stehekin River and its tributaries provide the main source of supply for the Lake Chelan Reservoir. This reservoir, created by raising the level of the lake 21 feet, has a storage capacity of 676,100 acre feet between the elevations of 1,079 and 1,100 feet, the lower and upper limits allowed by the
Federal Power Commission (69, p.531). The highly fluctuating runoff of the Stehekin has been collected in this reservoir since 1927 and is released in a more regulated manner by the Chelan Dam, located at the outlet of Lake Chelan (see Figure 30).

Apparently dam sites in the Stehekin valley have little hydroelectric generation potential for no mention was made in the voluminous and detailed Columbia River Survey by the Corp of Engineers in 1948 (58); however, suggestions of future potential was included in the North Cascades Mountain Study, conducted by the Washington State Planning Council in 1940. Two sites were proposed: one at the mouth of the Stehekin River with a power plant potential of 4,340 Kw, and the other on Agnes Creek with a projected output of 4,310 Kw (72, map 4).

Although the Stehekin River has a respectable runoff (985,880 acre feet annually) for the size of the watershed (372 square miles according to U.S.G.S. definition) and the character of the topography is such that a favorable reservoir storage capacity is indicated, there are many other undeveloped areas containing greater potential. Markets for Stehekin's hydroelectric power are presently lacking, except for a very small local need. Furthermore, transmission out of the area would require an unrealistic investment.

Figure 31. The Buckner Apple Orchard. Although many trees are still standing and blossom annually, there is no commercial production of fruit. At one time this orchard was remarkably well-kept and organized. Photo courtesy Paul Bergman.
The Chelan County Public Utility District has indicated no interest in power development of the Stehekin River unless a vast increase in the local market occurs. A market potential here would undoubtedly arise from recreational expansion—an industry which dam development would possibly prohibit by flooding sites and destroying the setting. It would seem that the most suitable alternative is to extend the power cable that once served Holden.

Power development on the Stehekin and its tributaries is unnecessary. This watershed provides approximately three-fourths of the water supply used to generate electricity and irrigate land at the southern end of Lake Chelan. The 54,000 Kw plated capacity of the Chelan Dam is adequate to supply the regional needs (69, p.533). Utilization of Stehekin's water resources, in this manner, seems adequate and presents no conflict with the recreational assets of this area.

Agriculture

The granitic bedrock of the Stehekin watershed is a slow weathering parent material, and soils suitable for cultivation are quite restricted in area. In the past, however, the alluvial sediments deposited by the Stehekin River have fostered agriculture where topography, climate,
and water supply were favorable. Farming, of the past and present, consists entirely of subsistence pasture and garden crops with one exception—the Buckner Apple Orchard (see Figure 31). This commercial venture was started in 1910 and at one time twenty-five acres of apple trees were in production with the harvest being shipped by barge to Chelan; however, the small size of the apple, high transportation costs, heavy snows, and late frost loss discouraged maintenance and the orchard is presently non-producing.

Outside of the scattered alluvial sediments of the valley, the rest of the area is covered largely by lithosols with scattered upland areas containing mountain meadow and alpine meadow podzols. Although some sections have withstood grazing in the past, this form of land use is practically non-existent. Transhumance of sheep in this area would be very destructive for the alpine meadows have a short growing season and are very fragile.

Theoretically, the Buckner orchard could be rejuvenated to produce and some expansion would be possible; however, need of this type of commercialism does not exist. The presence of small-scale subsistence agriculture is a necessity in some cases and the expansion of pasture and hay crops may be needed if recreational development increases. Nature will adequately regulate the
land available for cultivation and no conflict exists between agriculture and recreation.

**Trapping**

In the early twentieth century, pioneers extracted a substantial income from the fur bearing animals and a taxidermy shop was established on a site near the Field Hotel. Over-trapping, low prices, and the rise of ranch-raised animals have resulted in a cessation of this activity with minor exceptions. Presently a few beaver are trapped for the State Game Department and the scattered population of mink might possibly provide some small income, but otherwise, this resource offers little potential. Trapping here is unnecessary and the exclusion of it presents no problem. The recreational value of these animals far outweighs that derived from their lifeless pelts.

The exploitation of any or all of the resources of the Stehekin watershed could conflict with recreation if mis-used. Their greatest value lies in the role they play in enhancing a rich, recreational environment.
CHAPTER FIVE
THE CASE FOR RECREATIONAL DEVELOPMENT

The Stehekin watershed is admirably suited for recreational development. The physical base is excellent and a wilderness setting enhances the environment. Potential returns from tourism seemingly outweigh values to be derived from other resource exploitation. Plans are being formulated to make the Stehekin Basin an integral segment in the gross pattern of the nation's outdoor assets. A number of possibilities exist which could enrich the usability of the area for recreation. In order to strengthen the case of the Stehekin watershed for this purpose summaries are presented to indicate national and regional trends.

**National Trends**

The American people are setting higher values on recreation. As a result outdoor vacationing has grown into a major aspect of land use within the last two decades. Although there has been an increase in interest and participation since 1910, pressures on present developments did not reach a critical state until after World War II.

Today recreation is a major United States industry. Private enterprise is rapidly expanding to accommodate
the tourist but the most desired resources are found on federally-owned and operated lands. Great strides have been made by the National Park Service and their area of administration has grown to over 25,000,000 (65, p.1). The United States Forest Service provides 4,900 improved public recreation areas. (60, p.1) This bureau has also established 81 areas totaling almost 14,000,000 acres in which primitive environmental conditions are preserved (60, p.1). Despite this apparently vast federal development, facilities are far from adequate. Tourist visitations to the national forests and parks have increased at a rapid rate (see Figure 32). United States Forest Service camps and picnic areas had an overload of 39 percent in 1955. Even with new construction this overload is expected to reach 61 percent by 1958 (61, p.4). This is the situation of American recreation--extreme crowding into areas designed to accommodate approximately one-half the capacity number. Government agencies are beginning to make concentrated efforts to expand their accommodations with programs like "Operation Outdoors" and "Mission 66". A number of states are initiating programs to help satisfy leisure needs of the growing populations. Counties are following the same line; however, there has been a serious research lag in this field. Even the best informed efforts to anticipate future situations and
RECREATION VISITS TO NATIONAL PARKS AND NATIONAL FORESTS

VISITS IN MILLIONS

CALENDAR YEARS

Figure 32
requirements are educated approximations (49, p. 38). The inadequacies of the programs are already being realized. One implication of studies conducted to date is outstanding— that there are many promising signs pointing to growth in the years to come. This is obvious for a number of reasons. (1) Use and demand will naturally intensify following the rapid rise of the United States population which is estimated to increase 60 million persons by 1975. This will raise population number from 167 to 227 million (74, p. 48). (2) Accompanying this growth in numbers will be an addition in real income. It is expected that the personal income (after taxes) will reach $2,062 by 1975 (61, p. 1). (3) An increase in leisure time is also expected due to shorter work weeks, extended vacation periods, and increasing automation. (4) Technology is quickly closing the spacial gap between eastern and western North America. The planned budget of 50 million dollars to be spent on a super highway system during the next 13 years will enable more people to travel longer distances, cheaply and quickly (74, p. 48). Improved land and air carriers will further facilitate rapid transportation. (5) The development of an improved highway system will promote an increase of the industrial strip cities. These cities are expected to fill rapidly for the flight from farms is continuing at a rapid pace.
Forty million persons out of the predicted 60 million increase are to settle in the cities and suburbs (74, p. 47). This is the population that feels the greatest need for outdoor facilities.

Utilization of public recreation areas has not remained in proportion with normal social advances. It has far exceeded them. Use of vacation developments has been increasing at a much faster rate than the nearly four per cent a year that would reflect the combined efforts of growth of population and per capita income (49, p.38).

**Recreation in the Pacific Northwest**

The marked mal-distribution of population in relation to developed and potential recreational sites in the United States is striking. The physical geography of the Pacific Northwest is highly favorable for the expansion of this industry. The cultural geography, such as population distribution and transportation facilities, is not. Technology is capable of neutralizing limiting factors of cultural geography.

The Pacific Northwest lacks a number of locative factors essential in the production of some important industrial and consumer goods; however, the region possesses a surplus of valuable and enviable recreation resources. Thus the basis for trade is established for
regional differences are prime factors in commodity exchange. The potential for increased interchange of recreational services for consumer goods is important in the future welfare of this region.

In 1955 the value of tourism alone among the Northwest states was estimated at 410 million dollars (29, p.125). Marshal Dana, chairman of the recreational subcommittee of the Columbia Interagency Commission, recently stated that recreation was the number three industry of the region and that there is potential for a billion dollar business. Facilities in the Columbia Basin are going to play an integral part in the future of Pacific Northwest recreation. The number of tourists are expected to reach 40 million annually by 1960 (47, p.13).

A glance at the present and projected use statistics for this region is complimentary to the trends presented thus far. During eight years, from 1947 to 1954, State Park attendance in the Pacific Northwest rose to 10,421,000 annually, an increase of 330 per cent. By 1960, the yearly visitation is expected to be 18 million (8, p.3). The 1,531 public picnic areas and campgrounds of the Forest Service were enjoyed by 8 million people in 1954, a gain of 230 per cent since 1947. Estimates for 1960 approach 16 million (8, p.4). The number of
tourists in the Pacific Northwest's National parks have increased from 2,000,000 in 1947 to 4,580,000 in 1954—an advance of 220 per cent (8, p.5).

Accommodations are far short to meet the increasing demand. Presently there are facility shortages of 65 per cent in State Parks, 68 per cent in National Forest areas, and 50 per cent in National Parks (5, pp.3, 4, 5). Demand exceeds supply in all phases of federal recreational development. Although population in the Pacific Northwest is still relatively low, it is rising rapidly. Census figures predict a gain of 18 million in the west by 1975 (74, p.54). This will result in a substantial rise in the local vacation market. More suitable land should be set aside and designated for recreational purposes for both local and national utilization. Better planned programs of zoning are needed. A more detailed land-use classification map is a primary step. A complete regional plan is essential for all phases of industrial potential that will mesh with a national program. Areas most suited for mineral and lumber extraction, industrial and urban development, recreation, cropland, highways and all of the various social necessities, should be so designated before further land is mis-used. Little research and planning has preceded land development in the past. Here lies the basis for the growth of
a sound regional economy and a strong nation. This is effective conservation.

Those in a position to take advantage of the recreation resource often overlook this asset in favor of lumber and mineral wealth. Although returns are realized quickly they are generally short-lived and the recreation environment is spoiled. Therefore, a great deal of study and thought is necessary before sound planning can be applied to remaining virgin areas of the Pacific Northwest.

Recreation and the Stehekin Watershed

The Stehekin has the potential for filling a niche in regional and national recreation offerings. Here is a rich combination of ice, rock, matterhorn peaks, forested valleys, and near primeval isolation. Such combinations are rare within the United States. Plans are being considered to either log a portion of the area or dedicate the entire region to outdoor recreation.

As early as 1906 a proposal was presented by the Mazamas that the Lake Chelan region and its surrounding mountains be made into a National Park (4, p.14). This thought has risen and ebbed over the years. In the latter part of the 1930's a National Park Service Committee concluded, on a proposal for a North Cascades National Park, that:
"From a national standpoint, the area is unquestionably of national park caliber, is more valuable used as such than for any other use now ascertainable, and should receive park status under the National Park Service as the agency set up for providing highest conservational use and protection. Such a Cascade Park will outrank in its scenic, recreational, and wildlife values, any existing national park and any other possibility for such a park within the United States. Establishment of this area as one superb park is an inspiring project to fire the imagination, worthy of the Nation's effort." (4, p.14)

Currently, re-promotion of a National Park or National Monument status is occurring. This can be exemplified by C. Edward Graves' remarks:

"Two solutions have been proposed for the land use classification of the (Stehekin) valley itself. One is to make it a part of a National Park with a carefully regulated village type of tourist development. The other is to zone it as a Recreation Area of the Forest Service to be coordinated with the adjacent Wilderness Areas on the west, north, and east sides, and with careful planning for Lake Chelan in its upper reaches." (23, p.2)

He further states:

"There has also been the suggestion that the President should establish a Lake Chelan National Monument. Such a Monument, which might include the upper portion of the lake with its surrounding mountains and the entire valley with its immediate approaches, would certainly from the standpoint of scenic beauty be one of the nation's best." (23, p.2)

Thus far all attempts to establish permanent recreational boundaries on this region have failed.
have vigorously contested withdrawal of timber resources. The Forest Service placed enough value on the scenic assets to create a Glacier Peak Limited Area encompassing a portion of the watershed (see Figures 33 and 34). This classification was only a temporary measure—in essence it protected the area temporarily until further studies could be made. Apparently research is now complete for a wilderness area is to be created. Borders have been altered which leave sections with high recreational value out of the classification (see Figure 34). The remainder of the Stehekin is left open to exploitation of any sort unless further steps are to be taken. The United States Forest Service apparently believes that logging and recreation are compatible. The Lake Chelan Chamber of Commerce insists that a timber harvest would improve the recreational base. Their thoughts on this matter can be summed up in the following resolution:

"And Whereas, the Lake Chelan Chamber of Commerce has duly considered the matter and believes that any Wilderness Area in that location (Stehekin watershed) extending below an elevation of 4,000 feet would unduly curtail the economy of the area. "Now, Therefore, it is hereby resolved that the Lake Chelan Chamber of Commerce oppose any Wilderness Area at the head of Lake Chelan that includes any area below the elevation of 4,000 feet." (34, p.1)

This resolution of the Lake Chelan business men has infected the opinions of Chambers of Commerce throughout
Figure 33. Glacier Peak. View is to southwest from Cloudy Pass. This is one of the least known of Washington's five major volcanoes. It is also the least accessible. It is located on the outside edge of the watershed although a portion of Stehekin is included within the Limited Area borders drawn around it (see map). This mountain is one of the few signs of volcanic activity in the area. Photo courtesy Paul Bergman.
THE PROPOSED GLACIER PEAK WILDERNESS AREA

PROPOSED WILDERNESS BORDERS

EXISTING LIMITED AREA

STUDY AREA

STEHEKIN WATERSHED

Figure 34
the state and similar opposition is almost unanimous.

In contrast to these actions are outdoor clubs and various citizenry working to establish wilderness protection over a larger area. Views with more foresight are partially presented by Grant McConnell's statement in a letter to J. K. Blair, Wenatchee National Forest Supervisor:

"The present study (Glacier Peak) is too limited in that it fails to encompass the area to the north which deserves wilderness protection. This area is part and parcel of the same region as that in the Limited Area. There might be a few places (personally, I think none) elsewhere of such quality or such unity." (35, p.1839)

The resultant controversy is attracting nationwide attention. A victory for the logging opportunists would undoubtedly deflate the recreational resource base and Stehekin's potential would never be realized. Success for those supporting lower boundaries would be an important step in development. Plans for the remaining area must then be formulated.

Lack of publicity has been a major handicap of the region. Limited capital has prevented resort owners from doing a proper job. A great deal of beneficial advertisement, however, is resulting from the current conflict. The situation aroused interest in the New York Times when conservation editor John Oaks made mention of the Northern
Cascades and indicated further news (4, p.13). The National Geographic Society is currently preparing an article as is Sunset Magazine. C. Edward Graves' column "Conservation on the March" in the Carmel Pine Cone has discussed the watershed several times (21; 22; 23). The Sierra Club has shown great concern and printed both pictures and articles in their annual (4; 35). The Mountaineers, Alpine Club, Wilderness Society, American Forestry Society, and National Parks Association have all recently published stories on this region (77; 38; 14; 28; 31; 46; 68). Outdoor clubs are arousing the curiosity of the American public to the assets of the Stehekin.

It is evident that public interest in the Stehekin revolves around the natural environment rather than any cultural facilities that have been established thus far. Additional recreational industrialization of any sort, in the future, should fully utilize the physical base and mold the accommodations to complement the natural attractions. Perhaps the failure to do this is partially responsible for the present tourist picture.

Current utilization of the fish resource is a prime example of some overlooked potential. Fishing activity is promoted to a certain extent but little effort is expended to guide anglers towards productive water. Wild
Salmonidae abound in little-known tributary streams. Although the size of these fish are not exceptionally large, they are plentiful and easily caught. This resource is a potential attraction if it is properly utilized. Furthermore, it has economic significance for the value of wildlife in Washington during 1956 was estimated at around 88 million dollars (67, p.11).

The largest number of forest visitors are made up of fishermen; however, few goods and services are provided for the angler at Stehekin, or other tourists. Most fishermen are unimpressed with angling results (see Appendix 1, Questionnaire II). No groceries are available and only a meager stock of sporting equipment is kept on hand. Organized activity is practically non-existent. Guide service tours by foot, horseback, or automobile are lacking. What promotion is contemplated often fails in the initial stages.

Although a recreation industry has been established for six decades the potential is virtually untapped. Sites for additional developments, improvements, and revitalized resorts abound within the valley. Much of the favorable lake frontage is presently in use but some select spots are open for expansion. For instance the Weaver property is available. This could be made into an ideal location. It includes ten acres of flat lake
shore land with 500 feet of frontage. The plot is situated on the right bank of the river mouth. There are no connections with the river road and communications are strictly by water. Other drawbacks are the presence of stumps in the immediate lake area; however, many of these stumps have been pulled or are in the process of being pulled for greater boat safety. Only rudimentary development has occurred here but much could be done with road connections and improved boat access. This area also contains a beach and the gradual slope permits swimming. The prominent down-lake wind is effectively blocked at the Weaver site.

The abundance of level and privately-owned land farther up the valley would provide many possible development sites. Mr. Arthur Peterson, who owns 119 acres near the mouth of Company Creek, is a far-sighted individual. This land has been designated for resort development. Planning and labor have been carried on for many years but progress has been retarded due to lack of time and capital. Sixteen acres are also owned at Bridge Creek which have development potential. The valley floor contains considerable room for expansion of this sort.

The camps and shelters provided by the Forest Service are quite adequate for present needs although some are poorly located. Room for enlargement is ample and
additional sites plentiful. Trail shelters and high country camping spots are also available. A complete coordinated program between private and federal interests would do much to enhance tourism. Formulation of plans for recreational management must be instigated soon before exploitive pressures increase in demand.

Despite the numerous assets of the region there are some formidable obstacles for recreational development in the Stehekin. Most of them center around the remote nature of the locale. The Lake Chelan approach is unique and pleasurable but somewhat expensive and time consuming on the launches now in use. Small boat traffic is at times restricted due to the whimsical character of lake weather. The closest approach by road is from the west by a very rough Forest Service extension of PSH 17 through Marblemount (see Figure 1, p.6). The route leads to within two miles of Cascade Pass and is being increasingly utilized each year (see Figure 35). Movement in this area offers little economic gain to establishments in Stehekin. Other pass routes present the same disadvantage. Air travel is expedient but somewhat expensive which limits this means of entrance. An automobile trail leading directly into the region would undoubtedly increase the annual visitations greatly and soon. Such a road is feasible. The proposed North Cross-State
Figure 35. An August days outing at Cascade Pass. This is one of the most popular camping locales in the watershed. It is not unusual to observe a greater number of persons in this area than can be found at Stehekin. Many other persons were in the Pass area besides those in the photograph at the time of this picture. Cascade Pass lies at an elevation of 5,392 feet. The Stehekin River rises on the east and Cascade Creek, a tributary of the Skagit River, has its genesis on the west. Access is provided by a road along Cascade Creek to within two miles of the summit and the Stehekin River road which terminates 6 miles east of the pass. Relatively good trails lead to the area. Photo courtesy Paul Bergman.
Highway, if completed, would eventually run a spur down Bridge Creek to connect with the river road. Perhaps this route would be highly advantageous; however, values must be pondered before entrance of this sort is permitted since considerable damage could result. Lack of congestion may compensate for the prohibition of automobile entry (see comments in Appendix). This is one of the region's great aesthetic values. Such an entrance would certainly distract from the wilderness aspect. There are an abundance of potential sites that could easily be reached by wheeled vehicle.

A superb natural base has been created within the Stehekin watershed. Only the best planning and development can do justice and in turn produce the greatest economic gain. Long range goals should culminate by offering commodious facilities and a wilderness environment in close proximity. Neither should infringe or clash with the values of the other.

Proper zoning, adequate capital and investment, directed development, and correct publicity will not only bring benefits to Stehekin but surrounding areas as well since Chelan is the most popular gateway for entrance and exit. Recreational development in the Stehekin watershed will be lucrative and affect other Pacific Northwest tourist areas. Leisure time spent in this area will be
considered a wise investment.
Planning is the keynote in developing Stehekin's recreation resources. Proper land-use designations will discourage the evolvement of a heterogeneous landscape. Integrated zonation will correlate the facilities and prevent discord between the natural and cultural environments.

Placing aside a large portion of the watershed in a wilderness state may reduce the scope of the resource conflict but other problems would remain. Presently, the jurisdictions of the United States Forest Service are an all or nothing type of administration, for in establishing Wilderness of Wild Areas, they eliminate all signs of civilization while close to the borders they may permit roads, logging, resorts, and other forms of cultural modification. These contrasting uses are not closely harmonious and such administration does not do justice to areas having the topographic character of the Stehekin watershed.

Intervening areas, between lake and wilderness, require recreational status with assured protection against lumber and mineral exploitation. Buffer zones should be established that gradually grade from the
civilized comforts of commercialism to true mountain wilderness for side by side they are as incompatible as logging and recreation.

A Zoning Plan

A plan has been devised which is especially adaptable to the Stehekin area. It consists of a series of five zones which grade from an area open to controlled resort development to wilderness (see Figure 36).

Zone I includes all private land, except for a few patents, and roughly follows the 1,500 foot contour. Extensive private development outside of this area would be difficult due to terrain. Tributary valleys have been completely excluded. Commercialism might be allowed the greatest latitude on private sites near the head of the lake and spread for a short distance up the Stehekin valley. Organization camps would be permitted as well as picnic grounds such as are found in the State Parks. The delimiting contour of 1,500 feet, with a cut-off at the end of private land in the valley, would prevent this use from clashing with the wilderness setting (see Figure 36).

Zone II establishes an area that would permit development of group summer camps, picnic, and tenting grounds. Close regulation by the Forest Service would be necessary so the least possible conflict with surrounding scenery.
would occur. Boundaries would be determined, generally, by the 2,000 foot contour, taking in much of the valley floor from the end of private land to Bridge Creek. Coon Lake and an extension into the Agnes valley is also included (see Figure 36).

Zone III is an area restricting development to Forest Service camping grounds such as are now in an improved state and also allowing the existing road to penetrate as it has through the previous two zones. Here borders would closely follow the 2500 foot contour, extending into Bridge, Flat, DeVore, Rainbow, Company, Boulder, Park, and Agnes Creeks for short distances. Improved, maintained camps at choice spots should be hidden from general view and blend into the natural landscape as much as possible (see Figure 36).

Zone IV calls for a section set aside strictly for trails, rough camps, and shelters which could be maintained and checked at regular intervals. This area, in most cases, would be a tributary of Zone III. An extension to a point near Cascade Pass would tend to relieve the camping pressure on the alpine meadows. An added penetration up Bridge Creek might stop in the area of State Creek junction and extent short distances up tributary streams as indicated (see Figure 36). This could prove to be a popular camping area. The expansion into
the Agnes should end at approximately the West Fork, an excellent base camp region for numerous wilderness trips. Boundaries should be set short distances into the remaining tributaries. This type of development is compatible with wilderness values for the only actual difference will be the inclusion of very rustic type camps and shelters. The arm of Zone IV jutting up the southwest face of McGregor Mountain contains the rudiments of a relatively good trail which provides an exciting two day trip for those not physically capable of extensive wilderness travel. Horse trips could be taken to the 7,000 foot level and camping grounds here would enable an overnight stay and a scramble to the peak in the morning for a fine view of the entire rugged wilderness of the Stehekin.

Zone V consists of all the area not included in the previous categories and presently bounded by the watershed. It would be desirable to apply buffer zones to the surrounding forests and mountains. Development should be limited to trails. A plan of watch and maintenance must be included with regular checks made by trail crews and persons designated for patrol.

The map points out that buffer zones are lacking in sections along the lower end of the valley where commercial development is permitted. A natural check occurs
over much of the area established by bluffs and the 50 plus per cent slopes of the glacial valley. Persons wishing to leave the valley floor environment would do so normally by trail which follow the drainages, through some gradation, and once behind the primary ridge, cultural-Stehekin is effectively hidden and all signs of civilization left behind.

With such a system of zoning all types of outdoor summer recreation will eventually be available. The gregarious person wishing comfortable accommodations may seek Zone I while those desiring more solitude and closer communion with nature, depending on degree, may choose several grades until the wilderness is penetrated. Even those restricted to Zone I will benefit aesthetically by the existence of the wilderness for the setting is a vital segment of the environment.

Development of Federal Land

Many of the existing trails were built principally for fire protection and have avoided ridges, the location of the scenic vistas. Some pose grueling hikes even for the most hardy. Many have returned to the natural state. A very intensive relocation and rebuilding program for trails is in order for the Stehekin watershed.

Various campgrounds have been poorly chosen. Some are too near roads or in extremely dusty and stony
locations. Others are awkwardly situated in regard to water supply or in a rundown condition. The unimproved campsites are left to one check per summer by passing trail crews—maintenance that is far short of what is desired. A rejuvenation in all phases of federal facilities is needed if increasing use be properly managed.

The Purple-Boulder Creek trail provides a scenic loop trip. (The various features mentioned here can be noted on Figure 36.) Sections in the lower Boulder area are suitable for camping spots in Zone IV for overnight layovers or fishing camps. The Rainbow Creek trail needs relocation for excessive switch backs and a steep gradient require unnecessary labor to arrive at Rainbow Lake. McAlester Lake path, that connects with Rainbow trail, would benefit by campsites at the junction of State and Bridge Creeks for wilderness entrance and exit stopover points. Any camp improvements at Rainbow, McAlester, and Dagger Lakes should conform with wilderness standards as should those in the Washington Pass area. Downstream from the East Fork-Bridge Creek junction, more unimproved camps might be needed for those interested in fishing and climbing in this area. The South Fork or Bridge Creek trail could be rejuvenated so a loop trip would be open via Rainbow Lake. A few rustic camps would accommodate travellers. The Stilletto look out route should be
worthy of reopening. The same should be done to the trail between the South Fork and Storm Creek which provides a scenic trip approaching the north face of McGregor Mountain and its ridge. The overgrown Lake Ann trail needs to be cleared and perhaps looped with a re-established Maple Creek path with rustic camps along the Zone IV extension. A route into Storm Creek would provide good access to Sandalee Glacier for those interested in the wilderness side of McGregor Mountain. Rustic camps are essential in the lower North Fork of Bridge Creek. The trail to Goode Ridge should be re-maintained and extended into Greenvie Lake if possible. The present site of the unimproved Park Creek camp would benefit from improved status and such rustic camps should be placed farther into Zone IV. Cottonwood camp, at the end of the road, needs to be improved and the lower end of the Cascade Pass trail relocated. Rustic but well marked campgrounds would be advantageous below Cascade Pass in the Pelton Flat area. A trail would enhance the appreciation of Trapper Lake as it is entered from the Cascade Pass area or from Cottonwood Camp. Numerous camp sites are available in the Zone IV area of Flat Creek. The loop trail being contemplated, connecting Flat Creek with the West Fork of the Agnes, will open one of the most rugged and remote areas of the Cascades. Five-mile
camp in the Agnes is well-located but similar rustic developments could be established in nearby areas. The bridge across Agnes Gorge might be rebuilt for a fine easy loop trip and a spectacular view. The South Fork of Agnes Trail is adequate for movement in and out of this area from the Glacier Peak region. The Swamp Creek side route should be maintained for trips to the unnamed glacier found in its headwaters.

The re-opening of the Junction Mountain trail is worth-while for the panorama obtained at the summit. A rejuvenated path into Cabin Creek would provide opportunities for fishing and access to the peaks of Heather and Sisi ridges. Company Creek trail needs improvement especially in its upper reaches and a connecting link with DeVore Creek would create a fascinating loop trip. DeVore Creek trail requires clearing in the higher areas. Improved and rustic camps in the lower areas of both creeks would be valuable additions. This may prove to be one of the most popular loop trips due to spectacular scenery, excellent fishing waters, and good climbing peaks. Other areas containing similar assets are the Agnes watershed, Flat, Park, the North Fork of Bridge Creeks, and Cascade Pass.

Additional improved camps are desirable along the Stehekin in Zone III, and many good locations exist
paralleling the river. The present camps in the Zone II area are usable but improvements are needed. Other areas in Zone II, where favorable, might be designated for picnic grounds and organization camps.

Group summer camp sites in Zone II are not readily available for here the valley is narrow, walls rise abruptly, and no large tributary fans have been formed. A good possibility exists, however, around Coon Lake where a broad shelf has been formed. Clearing of trees in the lake and around the shore would provide excellent swimming conditions for the water is quite warm when compared to other hydro temperatures of the watershed. Coon Lake has supported substantial populations of cutthroat and eastern brook fishes. The shallowness of the lake occasionally causes winter kill but a plan for restocking would provide excellent fishing.

Locations are available for camps and picnic facilities from the end of private land to High Bridge. A great deal of landscaping would be necessary for much of the area is covered with large stream-washed rocks and boulders. The location of the High Bridge Guard Station has potential for a variety of developments. Alternative uses other than tenting could be adapted to High Bridge and Tumwater camps. Possibly, organization camps could be installed further up the valley but the
topography nearly restricts extensive building projects. Camping grounds might prove to be the most feasible for slide and high water danger becomes more imminent as the valley narrows.

**Economic Development**

Vigilance and careful planning are necessary in Zone I for even in this restricted area garish establishments can be considerable harm to the recreational values. Gradation is needed. A sub-zone near the lake would be maintained for developments with commodious facilities. Commercial establishments should gradually lessen as they ascend the valley and become more harmonious with the environment. Services such as a dude ranch or golf course are possibilities. A good tourist capacity may be developed with a well-balanced lower zone, multiplying many times the number of people that will be able to enjoy the watershed. An over-night camp ground near the lake would be desirable for lay-over accommodations wished by those entering and leaving the wild areas.

Existing commercial recreation facilities have been poorly planned. All occur at the head of the lake relying on the Boat Company launches, plane service, and minor small boat travel for entrance and exit of trade. Poor moorage facilities are characteristic. Planned activities for the guests are practically non-existent.
The assumption seems to be that guests will be well-satisfied to sit and ponder, take an unguided trek, or have a few rounds of shuffle board, ping pong, or badminton. Horseback riding facilities are only spasmodic. A few boats are for rent at resorts but a general public service is missing.

Since Lake Chelan is a determining factor in the tourist trade, many possibilities exist for improvement of water transportation. The launch trip could be more enjoyable. A start has been made in this direction with the installation of a speaker system and an operator gives occasional comments on the landscape; however, many vistas are overlooked and narration is intermittent. Continual interest could be maintained with lectures on the natural and cultural history of the lake between observation points. Outstanding landforms could be pointed out to familiarize persons with topographic features and notes on small boat navigation might also be included. A map would be a valuable addition with a key to location as the trip is made. Possibly a larger and more important trade could be attracted by the suggested improvements and persons relying on lake transportation into the area would have a more enjoyable trip.

Resort owners could cooperatively, or singly, establish their own launch service. This would offer the
advantages of a more convenient departure time and faster runs for patrons not wishing to meet the departure hours of the boat company nor become involved in the four hour journey. As the situation stands, tourists must be at the Chelan dock at 8:00 a.m. If the rendezvous is missed the alternatives are to attempt to overtake the boat company launch at 25 Mile Creek, charter an airplane or remain in Chelan until the next morning. A later departure by smaller craft would eliminate these alternatives and provide an entirely new one. A trip from 25 Mile Creek to Stehekin would be an asset and could easily be made in one and a half hours. An eleven o'clock a.m. schedule would eliminate overnight stays in Chelan or extensive evening driving for regional customers. Also, down lake departure times could be set for one o'clock p.m. so those returning could easily travel 200 miles or more before darkness. Various side trip offerings might also be worked into this journey. Such a system would seemingly be attractive to those wishing more efficient and less costly transportation.

A third phase of lake travel that is being neglected concerns small private boats. Moorage and other facilities should be installed or improved to lure a greater share of this growing type of recreation. Lake Chelan is a large and fascinating water body and provides ample
room for hundreds of boats to cruise and speed over the surface; however, the treachery of lake storms has been magnified and fear has been associated with the long trip to Stehekin in many cases. Refuge from turbulent waters are few and scattered and only the well-informed know of their location. Much of the shore consists of vertical walls and are disastrous to boats moored near them in rough water. Randall Morse has constructed a navigation chart which is a definite contribution to the Stehekin recreation industry. Through its use many of these risks can be avoided. A desirable addition to boat safety would be a coast guard vessel to patrol the waters during the tourist season when the traffic increases. Research on lake weather should be conducted so that relatively safe forecasts could be made in advance. Reliable forecasts such as this would add greatly to the safety of small boat travel. Hourly reports, such as are broadcast on the Chelan Radio Station during the summer, are excellent for present lake conditions but give no predictions.

A "marina" type of resort might possibly be located at the Weaver site. This would handle a good share of the traffic and other resort accommodations might also be installed. The locale offers swimming and water skiing. Other facilities could be installed to entertain guests not inclined towards aqua-sports or hiking in the
watershed.

The remaining resorts need expansion, remodeling, and more facility installations. The public landing should be improved for there lies the possibility for an important business. Moorage should be commodious, groceries, boat and car rental, restaurant and other general recreational supplies and services should be available. This has the potential as the headquarters for the general public, access for penetration and exit, and the supply point for goods and services.

All developments must be based on the natural resources and not rely on a wide variety of luxurious facilities to satisfy the public. Planned activities are the key to receiving the highest returns from the area. For instance, single day horse trips into the high country wilderness would be pleasing to many. Guided trail treks to observe natural features, wildlife, and wilderness is another rewarding form of entertainment. Bus service with scheduled stops would be attractive and reduce reliance on expensive car rental. Guided fishing trips into excellent tributary waters could be promoted (see Figure 37). Mountain climbing expeditions of varying degrees of difficulty might attract many that have the desire but lack the know how for solo trips. Packers for equipment and grocery replenishment would be desired.
Figure 37. Stehekin River fish. Good fishing still exists in the river for those who know when and where to go. The stock could be built up considerably with good management practices. Occasional catches such as this are within the grasp of tourists if they are properly guided. Although the largest fish come from Stehekin River waters, many tributary streams consistently yield a greater number. Many smaller streams could be heavily fished without harm and provide enjoyment for a great number of people. Photo courtesy Paul Bergman.
Such service for those going to upper camps or the wilderness could be provided by commercial establishments in Zone I.

Such planning is involved and expensive. However, the returns in economic value and satisfaction derived by the possible number of persons utilizing these resources would provide the greatest long run returns and the best possible utilization of the area. This region requires wise planning from the beginning for if unplanned development occurs it may result in irreparable damage to the natural environment. Major jurisdiction lies with the United States Forest Service for, with few exceptions, their record of recreational management is excellent.
CHAPTER SEVEN
SUMMARY AND CONCLUSION

The Stehekin watershed is endowed with a rich combination of recreation resources. The basin, fanning out from the northwest corner of spectacular Lake Chelan, is almost encircled by an array of mountain ranges. Spire-like peaks give a serrated effect to the region's highland rim. Peaks and ridges were sculptured by Pleistocene glaciation. U-shaped valleys mark the passage of rivers of ice. Numerous glaciers remain in high mountain basins and are nourished by winter snows. The glacial reservoirs feed the many streams which cascade from every slope. A varied climate promotes evergreen forests which carpet lower slopes while alpine meadows display their flowering beauty in higher elevations. Wildlife add their numbers to the environmental complex. Fish inhabit lakes and streams. Birds and mammals have food and refuge in the natural cover.

The scene is not without the sign of man. Some have capitalized on the setting by offering meals and lodging at the river's mouth. A small road penetrates the valley from which foot-paths radiate; however, the invasion has been slight and modification negligible.

The early records of exploration in the Stehekin
basin accent the natural grandeur. Minerals were the stimulus for the first wave of man's entry. It was soon evident that the problems of extraction and transportation made mining infeasible. Many left—a few stayed on. Those remaining found profit in catering to visitors attracted by the scenery and wildlife. Thus the recreation industry was born in Stehekin. The early years witnessed considerable numbers of tourists spending leisure time at the head of Lake Chelan. Later, the raising of the lake level destroyed many favorable sites. A reduction of game fishes lessened the appeal of the area to fishermen. For 30 years the region's recreational activities stagnated. Resort owners looked for a post-war influx that never came. There are signs of increased visitations; however, the trade desires other facilities than are offered for their interests lie in the outdoor aspects of Stehekin rather than resort accommodations. A re-evaluation is necessary to meet the needs of present visitors.

Recreation has not been the only attraction of the Stehekin watershed. Prospectors have long sought gold, silver, and copper in these rugged mountains. Although mineral deposits have been found, none have been profitably developed. The timber is attractive to the loggers. The total harvest may exceed one-half billion board feet
but this is a negligible amount no matter how vital it seems to local businessmen. Cutting scars would mar the landscape—the recreation environment would be depreciated. Saw mills would need to wait 120-140 years for another harvest—recreation would provide a continuous return for an indefinite period. Other resource exploitation presents no serious threat to recreation.

Recreational use of the Stehekin watershed offers good returns both economically and aesthetically. Recreation, as a national industry, has grown tremendously in the last two decades. The pressure on recreation land use is increasing due to growing populations, more leisure time, paid vacations, higher living standards, publicity, and the travel-mindedness of U. S. citizens. The federal government has expansion programs but facilities will still be short of what will be needed. The Stehekin has favorable conditions for aiding in alleviating this pressure.

The locale has national park qualifications—seen by some but overlooked by many who are in a position to capitalize on the assets. Instead of banding together for a recreational development plan, factions blinded by the meager timber supply have opposed planning. The struggle is having a beneficial effect for much needed publicity is circulating. As a result outdoor enthusiasts
are coming in increasing numbers. These groups disregard
the present facilities which are ill-suited to their type
of activity. Here lies the key to a successful recrea-
tion industry for few of the outdoor enthusiasts will
ever be interested in the cultural environment amid such
grandiose surroundings. Numerous sites exist for future
developers interested in servicing this type of trade.
Although the remote locale of the region appears inhibiting, this factor is gaining value. Lack of congestion
and crowding, characteristic of more accessible areas,
will prove to be an invaluable asset.

Recreational development in the Stehekin presents a
challenge. Extreme care must be taken to interweave the
cultural and natural environment with the least possible
discord. Planning is essential. All types of utilization
must be considered in order to achieve the greatest
returns. A zoning plan would permit a wide latitude in
use and prevent values from overlapping. Zoning would
allow a gradation from commercial comforts to true wil-
derness. The box-like character of the watershed is
especially well-suited for such planning. Wilderness
provides the setting and dominates the area while a por-
tion of the valley floor should be set aside for tourist
facility development. Planning must also include a re-
vamping of federal and private construction. A great
increase in use must be expected and the necessary arrange­ments provided. Trails and camps need extensive work. Goods and services must be available from private concerns. Several possibilities exist for improvement of lake travel—the main thoroughfare for entrance and exit of trade. If such planning is initiated the Stehekin watershed may very well become a mecca for outdoor enthusiasts of the Pacific Northwest and the nation.

Little research has preceded recreational development in the past. The value of increased forethought will bring dividends never before realized. Geography points out most of the basic considerations that must precede each plan. Regional and cultural differences cannot be avoided in an integrated recreational policy.

The United States must retain a storehouse of areas where its citizenry can escape the rapid pace of modern living and regain composure and spiritual strength. Resources such as this rank in the strategic category. So little is to be lost and so much to be gained by placing the Stehekin in a preservative state. The recreational resources are unmatched—all other values are secondary.

The resource conflict will be decided soon. If exploiters are checked and proper planning carried through, Stehekin can become nationally famous. The carrying capacity of the area can support thousands
annually--numbers that will discover rewards not found elsewhere. The Stehekin watershed can play a vital role in the recreational well-being of the American people. Nature has supplied the raw materials--man must preserve and properly develop the gifts.


34. Lake Chelan Chamber of Commerce. Resolution. Mar. 5, 1957. 1 p. (Mimeographed)


45. Piper, Charles V. Flora of the state of Washington. 1906. 637 p. (Contributions from the U. S. National Herbarium. v. 11)


56. Thompson, Margaret. The case for a national park in the Cascades. As presented in debate with Col. Howard Hanson. Seattle, Washington, March 1, 1940. 9 p. (Mimeographed)


APPENDICES
APPENDIX I

QUESTIONNAIRES

The formulation of these questionnaires was brought about through the lack of information on the Stehekin watershed. Furthermore, many of the opinions and ideas, drawn from observation by the author needed the basis furnished by this sampling. This was a random sample and occurred during the month of July, 1957, by personal interview both by the author and cooperating residents. The difficulty of movement and the time involved required that persons be approached whenever the opportunity presented itself. Groups, as well as single vacationers, were solicited. The results represent a general picture of the types of persons that are presently utilizing the area and their evaluations and ideas.

Three separate forms were prepared and distributed and include: (1) questionnaire for use on the passenger boat, (2) questionnaire for use in the Stehekin area, (3) questionnaire for use on the trail.

The answers have been totaled. The included map lists the general area of residence of each questionee. Finally, comments are included which indicate observations, percentages, and pertinent and oft repeated suggestions.
Questionnaire I - Passenger boat summary - 42 forms filled and returned.

The lake excursion is appealing to a wide group of people although the majority of use seems to come from those over forty years of age. Most of the persons interviewed came from Washington with a wide scattering making up the remainder (see Figure 38). Family trips were common but rarely exceed the average of three to a group indicating the expense problem. Over seventy percent were making a round trip which infers that the greatest use of the excursion lies in tourist side trips and one day outings by the surrounding population.

STUDY OF THE RESOURCE POTENTIAL FOR RECREATION IN THE STEHEKIN WATERSHED

This questionnaire is in conjunction with an Oregon State College master's thesis study being conducted on the recreational potential of the Stehekin watershed. Information gathered will not be associated with any individual person without specific approval. Your cooperation in completing the following questionnaire will be appreciated.

<table>
<thead>
<tr>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Check your sex and age group. A. 24 Male 18 Female B. Age. 1. 4 Under 18 2. 9 18-30 3. 6 30-40 4. 17 40-55 5. 3 55-65 6. 4 Over 65</td>
</tr>
<tr>
<td>II. What is your home city and state? See Map</td>
</tr>
<tr>
<td>III. Is this your first trip on the passenger boat to Stehekin? 32 Yes 10 No</td>
</tr>
</tbody>
</table>
IV. Are you traveling: 20 With your family  
14 With a group  8 Alone  
A. How many are in your party?  Average-3

V. Are you taking a one day around trip or planning on staying over in Stehekin?  
A. 30 Around trip  B. 12 Staying over

VI. How is the weather?  
A. 3 Stormy  B. 11 Cloudy  C. 28 Sunny

VII. Have you enjoyed:  
A. The scenery.............. Yes 41 No 1 
B. The accommodations and services on the boat.... 42 
C. The layover at Stehekin. 36 2 

VIII. Do you think the layover at Stehekin is long enough?  25 Yes 17 No  
A. If you do not, how long would you like to have it?  

IX. Were you satisfied with the services and accommodations at Stehekin? 33 Yes 5 No  
A. What do you think might be done to improve them?  

X. Do you have any suggestions as to what might be done to improve the trip to and from Stehekin?  

XI. If the opportunity arose, would you take the trip again? 41 Yes 1 No

XII. Will you recommend this trip to your friends? 42 Yes No

XIII. Would you like to see increased recreational facilities in the Stehekin valley?  
28 Yes 6 No  
A. If your answer is yes, would you indicate more specifically what you would like? (use back of page if necessary)
Satisfaction dominates most of the comment questions. However, there were some complaints covering the stop over at Stehekin. Those dissatisfied thought the layover should be extended from one to six hours although two hours seemed a popular time limit. Suggestions as to facility improvement at Stehekin usually referred to better eating and recreation accommodations.

Most of the opinions regarding improvements of the trip referred to a faster run, better observation accommodations, and some sort of guide service to point out vistas of interest. Generally speaking, there was satisfaction expressed regarding boat service by those interviewed.

Persons acquainted enough to comment on increased recreational facilities in the Stehekin valley had the following statements and suggestions: (Samples only)

1. "This is one of the few places left that is uncommercialized where persons who go to places like this in the first place are not disappointed."

2. "Short trail trips, picnic grounds, small store where necessary items could be purchased."

3. "The valley is sufficiently commercialized."

4. "Should be made a National Park, (and) advertised more. More trails if possible and more accommodations."

5. "We like it natural."
6. "Protected pools, tennis and badminton courts, wading pools, for children, swings and sandbox for children, pamphlets or printed map detailing and positioning places of interest in Stehekin area '(valuable in planning one-day or half-day jaunts)'."

7. "Remoteness is (the) charm of Stehekin."

**Questionnaire II - Stehekin Summary - 39 forms filled and returned**

The even distribution between age divisions, family and acquaintance groups, and first and repeat visits, reflects the in-between appeal of Stehekin as contrasted to the highly cultural boat trip and the wilderness nature of the trail trips. The greatest use comes from residents of Washington and all are basically from large urban surroundings (see Figure 38). The range of accommodations used and the length of stay indicates that a variety of vacationers spend their leisure time here.

Nearly all persons utilizing the area have interests in the natural base rather than the cultural facilities and find them adequate to meet their requirements except in the activity of fishing. Suggestions for improving the lodging and eating facilities center around expense and inconvenience of obtaining commissary supplies. Opinions for improved transportation generally trend toward scheduled bus and taxi trips. Again, transportation into the area was thought to be too costly or slow
with poor scheduling.

Opinions regarding the desirability of increased facilities or leaving the area in a natural state varied widely as some of the following comments indicate:

(Samples only)

1. "More fish could be planted, tennis courts, horses for rent, small golf course."

2. "More fish planted in the lake and streams, a heated swimming pool, and have the road extended further up in the valley."

3. "Better campgrounds - no logging or logging trucks in road."

4. "The small boat - private owned boat fad is on. Need a boat marina to attract such trade."

5. "The Stehekin area has much to offer a visitor. However, it seems as if a beautiful area degrades much when throngs of the public are able to trample thru a region. Again, it seems a shame that more people could not visit an area that has such resources."

6. "Additional trails in lake area. More nature interpretive activity by the government agency in charge, in this case, the USFS."

7. "Personally, I think the greatest appeal of the Stehekin is its remoteness, quietness, primitive and under-commercialized state. Any overdevelopment would cause it to lose much of its appeal to me."

QUESTONNAIRE FOR USE AT STEHEKIN

This questionnaire is in conjunction with an Oregon State College master's thesis study being conducted on the recreational potential of the Stehekin watershed. Information gathered will not be associated with any individual person without specific approval. Your cooperation in completing the following questionnaire will be appreciated.
I. Check your sex and age group.
A. 25 Male 14 Female  B. Age. 1. 3 Under 18
     2. 5 18-30
     3. 11 30-40
     4. 12 40-55
     5. 4 55-65
     6. 4 Over 65

II. What is your home city and state?  See Map

III. Is this your first visit to Stehekin?
    19 First visit  20 Repeat vacation

IV. Are you vacationing:
    17 With your family
    15 With a group  7 Alone
A. How many are in your party?  1 to 5

V. How many days are you spending in the Stehekin area?  1-60 days

VI. Are you staying at a:  7 Lodge  21 Cabin
    11 Campground

VII. What are your favored daytime vacation activity interests? (Check as many as are applicable)
A. 10 Water sports
B. 22 Fishing
C. 1 Golf and tennis
D. 9 Small area sports, i.e., horseshoes, shuffleboard, etc.
E. 12 Horseback riding
F. 20 Mountain climbing and hiking
G. 13 Camping and wilderness travel
H. 29 Relaxing and sightseeing
I. 2 Other 7 Photo - Paint

VIII. Are the accommodations satisfactory to meet the requirements of your activity interests stated above?  37 Yes  2 No

IX. How would you rate the lodging and eating facilities?  32 Good  7 Fair  0 Poor
A. What improvements would you suggest?

X. What is your opinion of the transportation facilities, for the tourist, in the Stehekin valley?
   23 Good  14 Fair  2 Poor
What improvements would you suggest?
XI. If you fish, how do you consider fishing in the lakes and streams of this area?
   Outstanding  3 Excellent  8 Good
   11 Fair  1 Poor

XII. Are you satisfied with the boat and plane service into this area? 32 Yes 5 No
A. How might it be improved? ________________

XIII. All things considered, how would you rate your vacation at Stehekin?
   8 Outstanding  22 Excellent
   9 Good  1 Fair  1 Poor

XIV. Would you like to see increased recreational facilities in the Stehekin valley?
   19 Yes 16 No 1 No Com. 4
A. If your answer is yes, would you indicate more specifically what you would like? (Use back of page)

Questionnaire III - Trail summary - 33 forms filled and returned

This group of vacationists had the largest percentage of younger persons. Although seventy per cent were under forty years of age this does not necessarily restrict the hard-earned appreciation of Stehekin's mountains to the younger set for the remaining thirty per cent ranged in age from forty to sixty-five years. However, it would seem to indicate that the greatest use would come from very active individuals.

The majority of these persons were in this area for the first time with nearly as many from California as from Washington (see Figure 38). All came from crowded surroundings and the major portion agreed that this was an outstanding vacation area.
Camping, hiking, and mountain climbing were the foremost activities. Everyone interviewed found the area well-suited for these purposes. Very few traveled by horseback alone - most combined a pack horse with walking and the rest backpacked completely.

Lake Chelan and Cascade Pass nearly tied as means of entry, both of which are well-suited for this purpose although other entrances exist and are used.

Opinions were nearly unanimously in favor of preservation of this entire area, or part of it. Opinions were also decidedly against recreational development. Some of the pertinent and interesting statements in regards to this subject are as follows: (Samples only)

1. "I would like to have the area available for use by people interested in it as a wilderness, e.g. backpackers, climbers, etc. I don't think facilities should be available for those people who are more interested in something like Coney Island."

2. "I think the lodges, restaurants, garages, etc. should be concentrated at entrance points on private land for private profit."

3. "The entire region warrants preservation of the most permanent character; perhaps National Park Status would ensure both wilderness protection of the back country and selected mass recreation facilities in such spots as the Stehekin valley."

4. "I would like to see all of it a National Park."

5. "All this area is very worth while as a recreational area, in fact none lovelier."
6. "Make the surrounding area more available for more people to explore and enjoy."

7. "This is my first visit to any of this area so I am not able to qualify my answer except to say that as the population of the state increases, more and more recreational areas will be needed. This seems like a wonderful area to maintain."

STUDY OF THE RESOURCE POTENTIAL FOR RECREATION IN THE STEHEKIN WATERSHED

QUESTIONNAIRE FOR USE ON THE TRAILS

This questionnaire is in conjunction with an Oregon State College master's thesis study being conducted on the recreational potential of the Stehekin watershed. Information gathered will not be associated with any individual person without specific approval. Your cooperation in completing the following questionnaire will be appreciated.

DATE From 7/6/57-8/6/57

I. Check your sex and age group.
   A. 22 Male  11 Female  B. Age.
      1. 2 Under 18
      2. 13 18-30
      3. 9 30-40
      4. 8 40-55
      5. 2 55-65
      6. _ Over 65

II. What is your home city and state? See Map

III. Is this your first visit to this area?
    25 First visit  8 Repeat vacation

IV. Are you vacationing: 4 With your family
    26 With a group  3 Alone
    A. How many are in your party? From 2-34

V. Are you: 2 Just passing through
    31 Spending your entire vacation here

VI. Are you: 23 Backpacking  31 Hiking with packhorse
    8 On horseback

VII. How many days do you plan on spending in the watershed? From 2-60 (average 11) days
VIII. How did you enter the Stehekin watershed:
A. 19 Lake Chelan
B. 14 Trail--What pass? All Cascade

IX. What are your vacation activities while you are here? (Check as many as are applicable)
A. 30 Camping and hiking
B. 20 Mountain climbing
C. 1 Fishing
D. 1 Prospecting
E. 2 Other Horseback riding - Photography

X. How would you rate the quality of the area in meeting the requirements of your vacation activity interests?
22 Outstanding 10 Excellent 1 Good 2 Fair 1 Poor

XI. Would you like to see increased recreational facilities in the Stehekin valley floor?
10 Yes 18 No 5 No comment
A. If your answer is yes, would you indicate more specifically what you would like? (Use back of page)

XII. Are there any particular areas of the Stehekin watershed that you would like to see preserved for recreational use? 25 Yes 3 No 5 No comment
A. If there are, will you draw them in on the map and note your reasons on the back of this page.

XIII. All things considered, how would you rate the vacation advantages in the Stehekin section of the Cascades?
22 Outstanding 11 Excellent 8 Good 2 Fair 1 Poor
Summary

Out of the 110 persons interviewed, by this method, sixty-seven per cent resided in Washington, eight per cent in Oregon, and fifteen per cent came from California. Approximately seventy-three per cent visited the area for the first time. Fifty-seven per cent of the total favored further recreational development of some sort while twenty-nine per cent were opposed and nineteen per cent undecided. This general picture of present opinion and use is presented as a representative sample and usable as fairly reliable source material.
RESIDENT AREA OF PERSONS RETURNING QUESTIONNAIRES

- PASSENGER BOAT QUESTIONNAIRE
- STEHEKIN QUESTIONNAIRE
- TRAILS QUESTIONNAIRE

- MONTREAL, CANADA
- CHICAGO, ILLINOIS
- LINCOLN, MASSACHUSETTS
- DETROIT, MICHIGAN
- MADISON, WISCONSIN
- INDIANA (NO CITY LISTED)

Figure 38
APPENDIX II
PERSONAL INTERVIEWS


APPENDIX III

SOURCES OF ILLUSTRATIONS

All photograph credits are included within the text.


Figure 8. U. S. Department of Agriculture, Division of Climate and Crop Weather. Climatic summary of the United States. Washington (State), 1930 through 1952.

Figure 9. U. S. Forest Service. Map of Chelan district, Wenatchee national forest. 1949.


Figure 15. U. S. Forest Service. Base information from map of Chelan district, Wenatchee national forest. 1949.


Figure 36. U. S. Forest Service. Base information from map of Chelan district, Wenatchee national forest. 1949.

Figure 38. Information compiled from Questionnaires, Appendix 1.