

WILDERNESS MANAGEMENT PLAN

MOUNT RAINIER NATIONAL PARK

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Approved by:


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5-15-89
Date

(as amended in 1990, 1991, and 1992)

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PLAN PREPARERS AND PRINCIPAL CONTRIBUTORS

This Plan was prepared principally by Barbara Samora, Resource Management Specialist, with significant contributions and recommendations from other park Wilderness Plan Committee members:

Robert Dunnagan, Assistant Superintendent, Natural Resource Planning
John Wilcox, Tahoma District Ranger
Rick Kirschner, Subdistrict Ranger
Randy Brooks, Subdistrict Ranger
Lynn Arthur, Longmire Area Interpreter

The plan was distributed to all permanent and seasonal employees for review and comment. The final draft plan was developed with consultations with park staff representing all park administrative divisions; and with comments received through a 30-day public review period.

Amendments

A Wilderness Management meeting is held annually to discuss changes needed to the Wilderness Management Plan. This document includes incorporation of amendments approved in 1990, 1991 and 1992; elaboration on the history of backcountry management, and description and use sections of the plan, as required under NPS-77, Chapter 3.

I. PURPOSE OF THE PLAN

The Wilderness Management Plan is an action plan to be implemented as part of the Resource Management Plan for Mount Rainier National Park and is not intended to discuss general resource management issues in great detail. This plan has been developed in response to several Servicewide, Regional and park directives including NPS Management Policies on Wilderness Preservation and Management, the NPS Pacific Northwest Wilderness Management Program, and the Mount Rainier National Park Five-Year Goals (1988-I 993). Park management is directed to ensure that designated, potential and proposed Wilderness in the National Park system is managed according to the principals of the Wilderness Act. These directives call for specific steps to improve coordination and consistency in management of all Wilderness areas; to monitor human use, air quality and noise trends in Wilderness areas; to develop an initiative on interpretation and public information regarding Wilderness areas; and to develop a systematic resource management strategy for such areas.

Backcountry Recreation Management policies are described in NPS-77 Natural Resources Management, Resource Uses and outline requirements of Wilderness and backcountry management plans including a description the Wilderness, any previous planning history, compliance with environmental and cultural resource protection laws, and standards and management actions to protect Wilderness resources.

The Wilderness Management Plan for Mount Rainier National Park, formerly entitled, "Backcountry Management Plan," serves several purposes:

1. It serves as a public document which explains the various policies, objectives, and justifications employed by the National Park Service in administering the Wilderness resources of the park.
2. It serves as a reference for park employees administering the plan.
3. It provides a summary of documented environmental changes, likely causes; describes desirable Wilderness conditions; establishes standards for maintaining desirable conditions; and identifies management actions to be taken to mitigate damage.

The Backcountry Management Plan was developed with continual public involvement and was modified numerous times with every significant revision receiving thorough public review. This plan, now entitled "The Wilderness Management Plan," has evolved around some of the concepts of Wilderness management as described by Stankey, et al. (1985), in the publication "Limits of Acceptable Change (LAC) System for Wilderness Planning." LAC is described as a framework for establishing acceptable, appropriate and measurable resource and social conditions in Wilderness. LAC also represents a reformulation of the recreational carrying capacity concept, with the primary emphasis on the conditions desired in the area rather than on how much use an area can tolerate.

In the development and subsequent modifications of the original Backcountry Management Plan many of the planning steps Stankey and others have defined as LAC were accomplished. Consequently, as this Wilderness Management Plan replaces the older plan, the LAC process has been integrated into the management of the park's Wilderness resources. However, additional revisions are needed to meet the objectives of LAC, especially regarding the development of measurable standards. A modified LAC approach was taken to address threats for factors (such as aquatic resources) where exact measurable (e.g., quantitative) standards are not easily defined, given existing site-specific information, but where human use is recognized as a threat that can result in alterations to these resources. More quantitative standards will be developed for these factors as we gain more knowledge of their current status.

Wilderness Designation

Both the Mount Rainier National Park Act of 1899 and the National Park Service Organic Act of 1916 promote management of the park for the preservation of its natural features as well as providing for public use and enjoyment. The National Park Service manages Mount Rainier National Park for these purposes and directs operations toward preserving the natural ecological processes and features of the park. Most of the undeveloped portions of the park are managed as "de-facto" Wilderness as directed by the 1964 Wilderness Act. Camps Muir and Schurman, Sunrise Trailside Camp, portions of water supplies, road systems, and developed roadside areas are excluded from the Wilderness (See Fig. 1 and Appendix A).

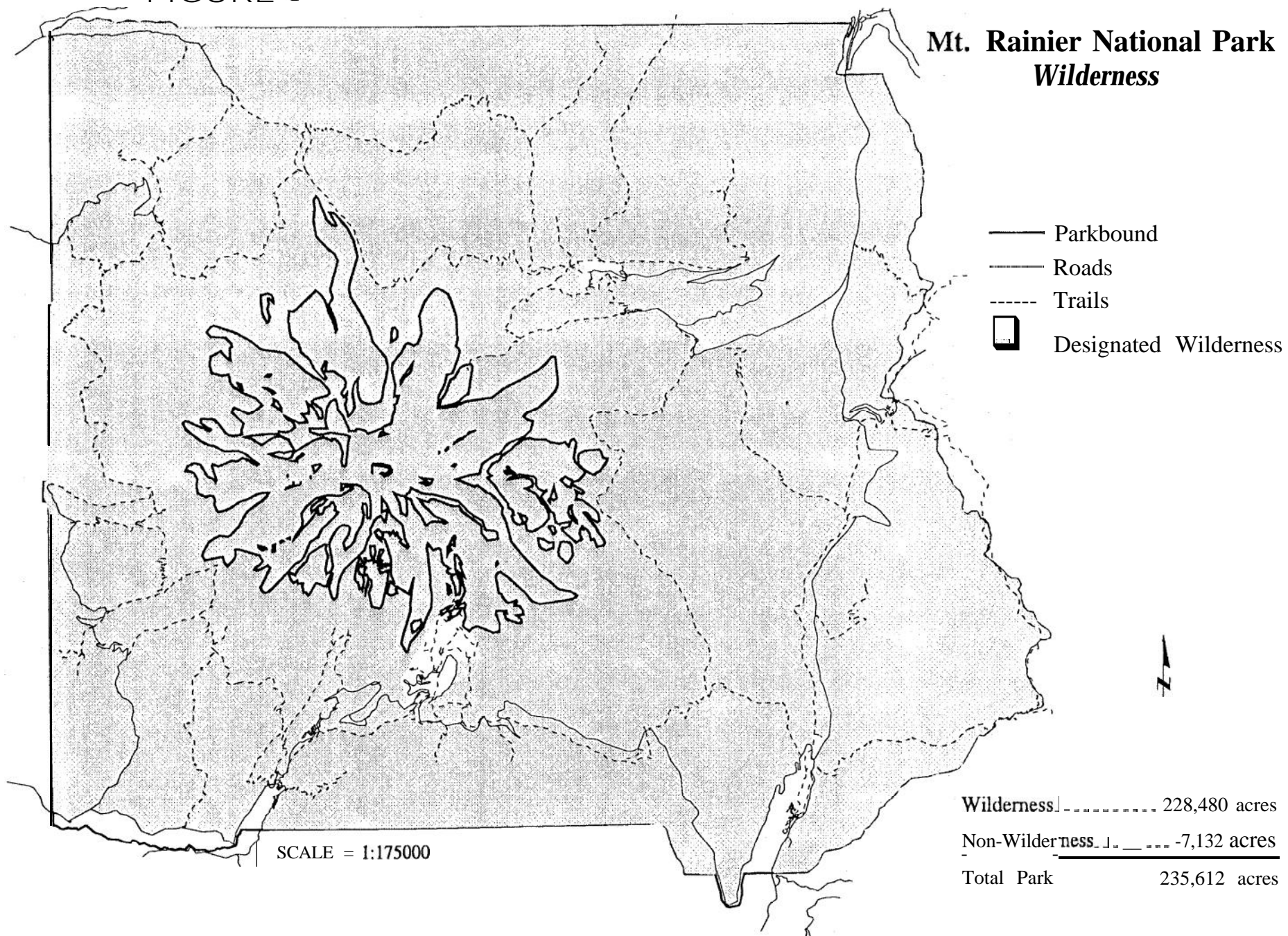
In 1974 the National Park Service proposed to Congress that some 210,700 acres within Mount Rainier National Park be designated "Wilderness." Public hearings regarding the proposed Wilderness were held in 1974 at Longmire and Tacoma, Washington with some 250 people in attendance. Congress took no action to designate the Mount Rainier Wilderness until 14 years later. However, the Backcountry Management Plan implemented in 1973 provided for the management of the park's backcountry in a near-wilderness state.

The 1974 proposal was amended to increase the size of the Wilderness and the bill became law on November 16, 1988, designating some 228,480 acres of Mount Rainier National Park as Wilderness (Public Law 100-668).

Compliance with the National Environmental Policy Act and Cultural Resource mandates

Environmental compliance mandates were met in 1973 when an Environmental Assessment was issued for public review, along with the 1973 Backcountry Management Plan. It was determined that the backcountry use and management plan would not have a major impact but would be beneficial to the environment and that a full environmental impact statement would not be needed (NPS, 1973). Additional environmental compliance is not required at this time since no significant changes are being proposed that were not discussed in the 1973 Environmental Assessment. However, NEPA compliance will be completed if significant changes to this Wilderness Management Plan are proposed in the future.

FIGURE 1



The controls on public use of the backcountry established in the 1973 Plan were challenged via litigation filed in 1975 and again in 1980.¹ In both cases the National Park Service's authority to establish regulations was challenged and in both cases was reaffirmed. The court did, however, stipulate that the Service must continue to assess human impacts in the backcountry and adjust quotas to reflect maximum use of these areas; and to employ the public review process to a greater **extent**. Although these stipulations applied only to the ten year period from 1978 to 1988, and previous to the Wilderness designation, impact inventories continue.

Compliance with Section 106 of the National Historic Preservation Act and other cultural resource mandates will be addressed before any alterations are made to designated historic structures and for projects involving ground disturbance. In 1991, several structures were listed on the National Historic Register of Places. These include trail shelters at Mowich River, Indian Bar and Summerland Trailside Camps; cabins at Huckleberry Creek, Indian Henry's, Mowich Lake, Golden Lake (Sunset Park), St. Andrews and Three Lakes; and all four fire lookouts at Shriner and Tolmie Peaks, Gobblers Knob and Mount Fremont. Historic structures will be maintained according to applicable mandates.

Compliance with archaeological resources protection mandates will be addressed through the Assessment of Effect on Cultural Resources process for each project involving ground disturbance before activities are undertaken.

¹ Penberthy v. Tobin et al., U.S.D.C. W.D. Wash. Civil 075-571 S.

II. HISTORY OF BACKCOUNTRY MANAGEMENT

In 1973 a Backcountry Use and Operations Plan for the park was implemented in response to deterioration of some of the park's natural resources, particularly in the subalpine meadows and a rapidly increasing public use of the backcountry. An estimated 150,000 day hikers and 15,000 backpackers and climbers used the park in 1972. Some visitors came in groups, averaging 25 persons for organized groups but as many as 200 in a group have visited the park's backcountry.²

Until 1973, controls on backcountry use were exerted only on parties wishing to build fires. Fire permits were issued for some 20 established camps but were not permitted elsewhere. There were no restrictions on party size, camp location, numbers of persons camped in any one area, or duration of stay. Lack of significant controls resulted in unacceptable impacts on the natural resources of the park and concern for the social well-being of backcountry use. In particular, problems that had developed which indicated a need for a backcountry management plan with some restrictions on visitor use were:

Existing backcountry policies tended to concentrate campers in the more accessible and scenic portions of the park, especially in the high meadows. Because the meadows are the most fragile ecological units of the park, a great deal of damage occurred. Trampling and unauthorized fires caused a severe loss of meadow vegetation.

Crowding at such camps (sometimes at 500% above estimated capacity) put a strain not only on the resource, but virtually destroyed the possibility of a quality wilderness experience.

Sanitation became an increasingly severe problem at backcountry camps. Undesignated and unauthorized camping where no sanitary facilities were present caused alarm. The largest lake in the park was threatened by human and animal wastes.

Illegal and improperly located fires caused immeasurable resource damage. Wood fires in subalpine areas pockmarked meadows with black rings and ashes, sterilized the soil, and accelerated erosion. Once built, fire rings attracted the building of additional rings.

Adirondack style trail shelters, most of which were built in the 1930s were in varying stages of deterioration and attracted vandals and litter, thus becoming an added expense to maintain and a less than desirable camping facility for many people.

Trails deteriorated from heavy use and eroded badly in some areas. Multiple "social"

² Dolle-Molle, J. Unpublished Report.

trails developed in subalpine areas from heavy use in early summer during snow melt. Fishing pressures from visitors entering the park along the north boundary from nearby logging roads caused unusually heavy use and unacceptable impacts on several lake shores as well as occasional conflicts with backpackers. Previous stocking of fish in the park's lakes had created heavy use by fisherman, and subsequent damage to shoreline vegetation.

As a result of these impacts, the Backcountry Use and Operations Plan was written during the winter of 1972-73. It dealt primarily with the overnight user because most adverse impacts were caused by excessive numbers of backpackers in certain locations. The purpose of the Plan was to Provide the opportunity for a quality experience with minimal impact on the natural resources. The Plan provided for the following:

A permit/reservation system that administered quotas on use in backcountry areas, limiting the numbers of parties or individuals in given places for given lengths of time.

Limits on the size of both backpacker and horse parties.

Removal of most campsites from fragile subalpine meadows and relocation of designated campsites in the more durable forested zones.

Relocation of trails where serious erosion problems were experienced.

Banning of open wood fires except in fireplaces at certain trailside camps. Use of petroleum fueled stoves was encouraged.

Restrictions on horse use on some 70 miles of trails.

Removal of four deteriorating trail shelters and an old pumphouse.

The quota system was administered through the use of a permit system. Backcountry use permits were required year-round for any overnight stay in the backcountry (one-half mile or more from roads). Zones were established in the park for administering this system, including:

1. The Climbing Zone - the area on the mountain above 7,000 feet or on glacier ice, generally considered to be the climber's domain. Relative free of vegetation, the zone was primarily an area of snow and rock.
2. The Crosscountry Zone(s) - areas below 7,000 feet and more than one-half mile from maintained trails. Vegetation types vary from lowland forest to alpine meadows, with the fragility of the areas varying accordingly.

3. The Trail Zone - the areas including all maintained trails, trailside camps, and areas within one-half mile of trails.

The 1973 Backcountry Use and Operations Plan was a reactionary instrument intended to halt a deteriorating resource situation and social crowding condition experienced through 1972. The perception of these conditions as “unacceptable” grew not from careful scientific study or extensive research efforts, but from observations by experienced park rangers and management personnel and visitor comments. Something had to be done to halt the problems before they became increasingly worse. Time and funds were not available to initiate scientific studies over numerous years to develop carefully designed solutions without more sacrifice of resource and social values.

The Plan was designed for the future, developed by public comments and land managers’ perceptions, and was intended to provide for public use of the backcountry while preventing the destruction of the very resource they came to enjoy. That design was never intended to be final and has undergone scrutiny and revision since its inception in 1973. In most cases, the original restrictions have been lessened or, in some cases, eliminated as managers found better ways of administering the Plan and users became more knowledgeable about backcountry manners and minimum impact camping.

The following changes in backcountry management were made as information on recreational impacts and visitor use became available:

1974:

Limitations were adjusted upward on groups of individuals from four persons per group to five, and horse parties from five head of stock to six.

1975:

Independent campers permitted to stay overnight at Camp Muir each night increased from 35 persons to 65. Independents at Camp Hazard were newly set at 60, an increase of 60 because previously all routes other than through Camp Muir on the southern side of the mountain were limited to no more than two parties at any one time for the southern side of the mountain.

1976:

Independents at Camp Muir was increased to 75 from 65.

Experimentally during the month of August, the one-half mile between parties requirement was waived for the Ingraham basin; later adapted pennanently for all routes.

1977:

Reductions:

- a. Close the Bench/Snow Lake basin and the meadows surrounding Mirror Lakes to camping due to high day use and resource deterioration.
- b. Use of bivouac permits restricted to Lake James, Sunset, and Fire.
- c. Reduce camp capacities at North Puyallup, Lake George, and Sunset.

Increases:

- a. Establish new camps at Eagle's Roost and Carbon River.
- b. Increase capacities at Maple Creek, Berkeley Park, and Indian Bar.
- c. Increase capacities in two mountain zones: Cathedral Gap to Disappointment Cleaver and Pebble Creek to Camp Muir.
- d. Increase capacities in four crosscountry zones.
- e. Eliminate capacity limit on Camp Hazard; lift one-half mile between climber camps limit.

1978:

Reductions:

- a. Limit the size of groups using Sunrise Campground to no more than 12 persons.
- b. Reduce to 12 the number of persons camping each night in the Mount Ruth/Inter Glacier areas from the 36 ordered by the Court on a trial basis.
- c. Forbid camping on fellfields along Muir Snowfield.

Increases:

- a. Add one site to Berkeley Park Camp.
- b. Establish unlimited camping zones in certain areas formerly limited to specific capacities (3 lower forest zones).
- c. Allow swimming in Mowich Lake.

Other:

- a. Remove Mowich Lake Campground from the backcountry reservation system and make it a frontcountry first-come-first-served walk-in campground.
- b. Implement dispersed camping at Golden Lakes.
- c. Remove six previously administratively closed to camping areas from that designation, thus opening those areas to camping.
- d. Make backcountry permits optional in winter (November 15 to April 16).
- e. Establish new camps at Yellowstone Cliffs, Granite Creek, Snow Lake, and Pebble Creek.
- f. Reduce the size of the zone limited to 12 persons per night from the area between Camp Schurman and the summit to between Camp Schurman and 10,200 foot level; experimentally made unlimited half way through the summer.
- g. Establish new camp at Camp Curtis with 23 defined sites.
- h. Make the Inter Glacier an unlimited camping area.
- i. Greatly increase the number of crosscountry zones, and increasing total capacities greatly.

1980:

Reductions: None

Increases:

- a. Permit the building of fires on fire pans in the lower forest crosscountry zones.
- b. Dropped limits on the numbers of parties permitted to camp on the upper mountain above Camp Schurman.
- c. Elimination of the reservation system for all camps and cross-country zones except Camps Muir and Schurman and the group sites elsewhere.
- d. Opened two additional trail segments to stock use - from Tahoma Creek Picnic Area to the top of Emerald Ridge, and the Longmire to Rampart Ridge Loop Trail.

- e. Backcountry permits no longer required except between June 1 and October 15. Permits? quotas, and reservations apply only to this period.
- f. Permitted minor repairs to be made on trail shelters.

1981:

Reductions:

- a. Removal of the backcountry camp at Pebble Creek.
- b. Limited to day-use only the heavily impacted areas within one-quarter mile of St. Andrews Lake and Lake George. The designated campground at Lake George, however, will remain open to camping.
- c. Removal of one poor camping site at Cataract Valley Camp.

Increases:

- a. Two new trailside camps built at Pyramid Creek and Dick Creek, two sites in each camp.
- b. One or more new sites added to the following trailside camps: Eagle's Roost, Carbon River, Granite Creek, Snow Lake, and Klapatche Park.
- c. Eliminated certain crosscountry zones, including Inter Fork, Goat Island Mountain, Governors Ridge, and Shriner Lake because of very light use. These areas are open to unlimited numbers of parties.
- d. Opened certain other existing crosscountry zones to unlimited numbers of parties per night but maintaining the zone designation for management purposes and possible future regress. These include Elysian Fields, Vernal Park, Burnt Park, Slide Mountain, and Stevens Ridge.
- e. Adjusted zone boundaries of all other crosscountry zones into smaller areas, thus opening more land to unlimited numbers of parties per night.

NOTE: When comparing the 1981 edition of the Backcountry Management Plan with the 1980 version, there will appear to be other changes in capacities in trailside camps. These were printing errors.

1982:

Adjust dates for which backcountry permits are issued from June 1 through October 15 to June 15 through September 30.

Reservations for camping at Camps Muir and Schurman available only for Friday, Saturday and holidays, which are the most heavily used days.

Reservations for group sites at trailside camps will no longer be available.

1984.

Abolished reservation system for Camps Muir and Schurman. Established first-come-first-serve policy. Only 28 % of use was through reservations. Of this 28 % , 43 % either cancelled or did not show up to use their reservation. This high no-show/cancellation rate was fairly consistent from 1981 through 1983. Because of variable weather on the mountain, advance reservations are not a reliable option.

Established experimental minimum impact site in the Indian Henry's area.

Replace Hiker Impact Inventory (HII) system with photodocumentation.

Abolish use of trail registers.

1986:

Create Deadwood Lakes crosscountry zone (separate from Crystal Mountain crosscountry zone, with a limit of two parties. Decrease limit at Crystal Mountain to one party.

Expand Eagle Roost Camp from five to seven campsites.

Designate the old cabin site at Mystic Lake Camp as a group site.

Eliminate one campsite at Olallie Creek.

Expand Carbon River Camp from three to four campsites.

Establish revised impact monitoring methodology for trailside camps using measurements of bareground by radial transects, establishing permanent photodocumentation points, and establishing some vegetation transects.

1987:

Winter camping must now be out of sight of marked trails (in addition to being 100 yards from plowed roads and 100 feet from lakes and streams).

Establish self-registration at White River, Carbon River, Mowich Lake and Nisqually Entrance for visitors arriving after stations close.

Remove the Golden Lakes shelter.

Close Emerald Ridge trail to stock use. Use had been insignificant and costs of maintaining trail to stock standards is high.

Designate campsites at Camp Curtis. Historically a collection of 23 user created campsites existed along ridge between Glacier Basin and Camp Schurman. Reduced campsites to five to protect alpine plant communities.

Expand campsites at Glacier Basin from four to five.

Divide Mount Ruth crosscountry zone into two zones pending a detailed survey of existing impacts, sites and use patterns.

1988:

Closed one camp at Clover Lake Camp to protect rare plants.

Recommended eliminating the North Mowich trail shelter due to its deteriorating state. Compliance with cultural resource mandates were initiated to remove this shelter.

No other significant changes to the Backcountry Management Plan for this season. However, a committee was established to begin work on the Wilderness Management Plan pending designation of the Mount Rainier Wilderness. November 16, 1988 Congress designated 228,480 acres (97%) of the park, as Wilderness.

1989:

Wilderness Management Plan signed May 15, 1989. The Plan established limits of acceptable changes for Wilderness resource and social conditions; and defines standards for administrative use and management. Indicators or resource and social conditions, standards, and actions are identified for aquatic resources, wildlife, sanitation, landscape conditions, stock use, trail conditions, endangered, threatened, and rare species, campfires (campfires are no longer pennitted), air quality, and opportunities for solitude and experience.

Permits required year-round. Winter use zones established for Paradise, Mazama Ridge and Reflection Lakes.

Closed Clover Lake Camp to protect rare plant habitat.

Adjusted boundaries of zones to include alpine areas in Alpine zones (formerly called Climbing Zone).

Campfires no longer permitted in backcountry/Wilderness.

1990:

Group size for overnight camping in the alpine zones of the park was changed to protect alpine vegetation, as follows:

12 when camping on snow or ice; five when camping on bare-ground. As stated in the Wilderness Management Plan, 1989, no camping is permitted on vegetated areas.

As stated in the Wilderness Management Plan, 1989, permits have been required for overnight use of backcountry and Wilderness areas. This included areas surrounding Paradise, Mazama Ridge and Reflection Lake. Group size for overnight camping in these areas during winter periods was changed as follows:

Groups larger than 12 camping in the Paradise area must camp between 300 to 600 feet from public restrooms and are required to use these restrooms for disposing of their human wastes. Very large groups will be directed to use the Sunshine Point frontcountry campground.

Group size is limited to 12 for winter camping in the Mazama Ridge and Reflection Lakes areas.

No camping in the above winter use areas (which are designated Day Use areas during the summer) will be permitted between June 1 and September 30 and when snowfall is five feet or less at Paradise and two feet or less in the other areas.

No camping is permitted within 200 feet of roads (plowed or snow covered) in winter use areas.

The Lake James Trailside Camp was closed due to severe deterioration of the camp and water quality concerns. A new camp will be located behind the Lake James Backcountry Cabin (BCJC), with one individual and one group site.

Camping in the fragile subalpine meadows of the Van Trump Park crosscountry zone no longer be permitted. Camping still permitted in the alpine areas above Van Trump Park.

No camping permitted within 1/4 mile of the Mount Fremont Lookout.

New crosscountry zones were established as follows, to track visitor use:

Governors Ridge (limit one party); Tamanos Mountain (limit one party);
Fryingpan (limit one party); Moraine Park (limit one party).

Use limits for two crosscountry zones were changed to protect fragile subalpine areas, as follows:

Lower Curtis Ridge (two parties), Burnt Park (two parties).

Two new alpine zones were established to track use, as follows:

Camp Hazard Alpine, Thumb Rock Alpine. No limits are placed at this time on the number of parties permitted to use these areas. However, group size is limited, as stated above.

1991:

Eliminated self-registration during summer season due to the large number of overbookings that resulted.

Incorporated Moraine Park Crosscountry Zone (XMOR) into Old Desolate Alpine Zone (AOLD). Visitors had difficulty locating the zone and many incidents of illegal camping occurred as a result.

Began tracking use by Boy Scout groups and anglers,

Began tracking country of origin for foreign users.

Established party size limits for four previously unlimited subalpine zones in order to protect fragile vegetation communities:

Vernal Park (XVER) and Elysian Fields (XEYS) - Two parties per night.
Stevens Canyon (XSTE) and Slide Mountain (XSLI) - Three parties per night.

Established use limits for ATOK as three parties per night and designate specific campsites in the zone.

Established a winter zone to track use of the Ice Caves area (WICE).

1992:

After seven years of inventories of visitor use and recreational impacts, party limits were established for the following Alpine Zones to protect fragile alpine vegetation and address limitations, of human waste management:

| Zone | Limits on Parties/Night |
|-----------------------------|-------------------------|
| Carbon Alpine Zone (ACAR) | 3 |
| Colonades (ACOL) | 2 |
| Goat Island Mountain (AGOA) | 2 |
| Little Tahoma (ALIT) | 2 |
| Mount Ruth (AMOU) | 2 |
| Ptarmagin (APTA) | 3 |
| Sarvent (ASAR) | 1 |

Rangers and Natural Resources personnel will designate specific campsites and trails for the above zones, by May, 1995.

Rangers and Natural Resource personnel will develop recommendations for party limits, campsites, and trails for AKAU, ACCH, and ACTH by May, 1995.

Rangers will conduct annual training with RMI guides to encourage their compliance with minimum impact hiking and camping in fragile alpine environments.

Research will be conducted on passive revegetation methods for alpine zones.

Park policy and Restoration Handbook will be amended to include the following:

1. Wherever possible, transplants or seeds will be collected within 30 meters of the impact for forest, subalpine and alpine environments in order to maintain genetic integrity.
2. Passive restoration techniques (exclusion of human use, scarification, minimal seeding, replacement of desert pavement, addition of organic matter) will be the preferred method in all alpine environments.
3. Use of helicopters in alpine areas, particularly landing or transporting materials, should be minimized. (Chinooks used on Panorama Point have suspended substantial amounts of soil in the air. Disruption of the desert pavement substrate could lead to erosion, development of needle ice and conditions that do not favor plant growth.

Approved adding one site to BCGC after site review by park Botanist, Ranger Resource Management Specialist and Carbon Area Ranger.

Coordinate mutual patrols with USFS personnel, Packwood District. for Tatoosh, Glacier View, and William O' Douglas/PCT areas.

Public advised to take precautions not to damage vegetation and trees while hanging their food. Visitors should be encouraged to provide their own food storage devices such as the commercially available bear-proof containers.

Large groups (over 12 persons) who have used the MORA Wilderness for SAR and winter survival training will no longer be permitted to camp overnight in Wilderness in order to protect the "solitude" of other Wilderness users and comply with our established Wilderness standards for group size limits. Instead, they will be directed to camp in the WPAR (Paradise Winter Zone) or use Sunshine Point frontcountry campground.

The BCJC (James Cabin Camp) was changed to BCRC (Redstone Camp) effective January 1, 1993.

Trails within Crosscountry and Alpine zones are rapidly increasing resulting in a "shrinking" of the Wilderness. Staff will begin inventorying way trails. Data will be used as a baseline from which to monitor future extension and expansion of these travel routes.

III. MANAGEMENT GOALS AND OBJECTIVES

Manage the Wilderness as a distinct resource with inseparable parts.

Manage the use of other resources and activities within Wilderness in a manner compatible with Wilderness.

Allow natural processes to operate freely within Wilderness and preserve the quality of air, water, and other natural resources.

Attain the highest level of purity in Wilderness character within legal constraints.

Promote Wilderness values and benefits while preserving Wilderness character.

Utilize interdisciplinary scientific skills in managing the Wilderness.

Identify internal and external threats to Wilderness values and establish long-term programs for monitoring use and associated impacts, threats to rare and endangered species, water quality, acid rain and other forms of degraded air quality, and visual or sound impairments.

Control and reduce physical, ecological and social impacts of human use in Wilderness through education or innovative management. Regulate at the minimum necessary to achieve Wilderness goals and objectives.

Exclude the sight, sound and other tangible evidence of motorized equipment or mechanical transport wherever possible within Wilderness. Accomplish necessary Wilderness management work with the "minimum tool."

Remove existing structures and terminate uses and activities not essential to Wilderness management or not provided for by law.

Hannonize Wilderness and adjacent land management activities.

Preserve outstanding opportunities for solitude and a primitive and unconfined recreation experience in the Wilderness. Provide for varying degrees of challenge and opportunity for solitude by designating three zones:

1. Trail Zone: Provide for the easy access and use of the Wilderness by large numbers of visitors at any one time by concentrating their impacts upon durable and well-maintained trails and permitting camping along such trails only at designated campgrounds. During the summer months (July through September) the Trail Zone would likely provide only limited opportunities for experiencing solitude.

2. Crosscountry Zone: Provide a reasonable opportunity for challenge and solitude in a more “pristine” Wilderness by dispersing use in areas of lower forest and subalpine environments where no designated campgrounds, facilities, structures, or well developed and maintained trails (Type A or B trails) exist and users are encouraged to follow minimum impact techniques. Some areas may have narrow “way” trails (Type C trails). The opportunity for experiencing solitude in the Crosscountry Zone varies from moderate to high but in most cases would likely be higher than in the Trail Zone.
3. Alpine Zone: Provide for climbing and alpine hiking opportunities offering a higher degree of challenge and experience in areas above treeline, generally above 6000 feet or elsewhere on exposed rock, glaciers, and snowfields. Only two Type B trails exist in this zone. Some areas may have narrow “way” trails (Type C trails) that lead to heavily used vistas or climbing routes. Campers are encouraged to camp on permanent snow or ice; use only bareground areas that have previously been used as campsites; or may camp in the designated campgrounds at Camp Curtis.³

No camping is pennitted on vegetated areas of Alpine Zones. The opportunity for experiencing solitude in the Alpine Zone during the summer months ranges from high on the more remote or technically difficult climbing routes, to extremely low on the more popular routes.

³ Camping is also provided at Camps Muir and Schurman which are outside of the designated Wilderness and are addressed in a separate plan (see Appendix A).

IV. DESCRIPTION AND USE OF THE WILDERNESS

Description of the Park

Mount Rainier National Park is located on the western slope of the Cascade Range, approximately 65 miles southeast of the Seattle-Tacoma metropolitan area and approximately 65 miles west of Yakima (See Fig. 2). Mount Rainier is a towering snow and ice-covered dominant volcano that dominates Mount Rainier National Park and is a prominent landmark in the Pacific Northwest. Rising to a height of 14,411 feet above a surrounding environment that extends from sea level to the crest of the nearby Cascade Range at 6,000 feet, the "Mountain" is considered an "arctic island in a temperate zone."

The park consists of three major ecological zones. The upper mountain or alpine zone consists of snow, rock, and ice and fragile alpine vegetation that covers approximately 20 % of the park and begins at treeline, generally above 6,000 feet. The lower forest, consisting of silver and Douglas fir, western hemlock and western red cedar, covers approximately 58 % of the park and extends from the park boundaries to the subalpine meadows at about 5,000 feet elevation. Most park roads and other developed facilities are within this zone. The subalpine zone, characterized by scattered stands of subalpine fir and grassy and heather meadows extending from about 5,000 feet elevation to treeline, covers approximately 22 % of the park and is the most frequented zone for the majority of park visitors.

Mount Rainier is mantled by some 25 named glaciers that radiate from its crest on all flanks, including glaciers that are the largest and extend to the lowest elevations in the lower 48 states. The brilliant display of wildflowers in the subalpine meadows, the dense ancient lower forests, and the mountain itself, a mecca to snow and ice climbers throughout the world, attract as many as two million visitors each year. The Mount Rainier Wilderness encompasses approximately 97 % of the total park acreage.

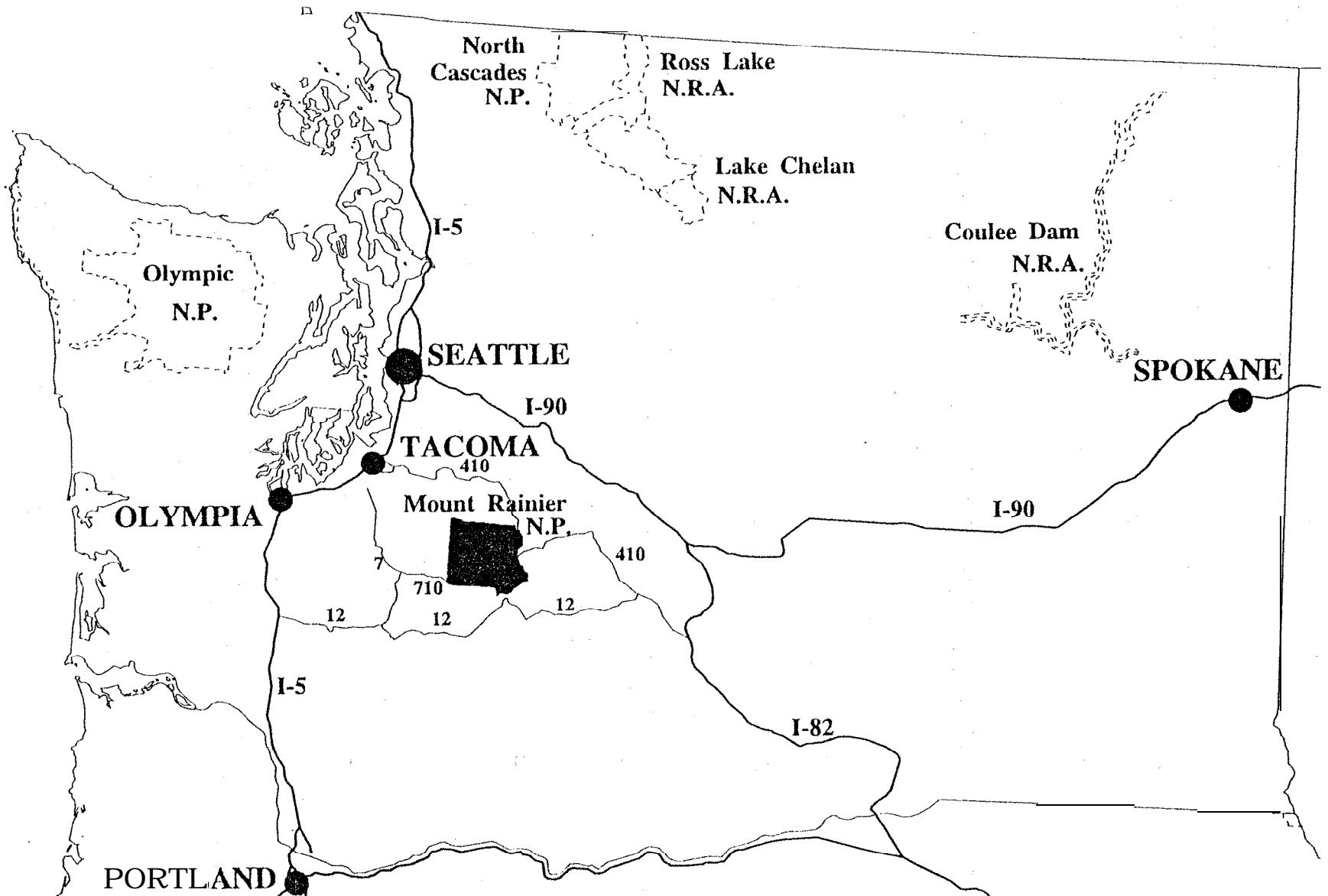
Regional/National Context

The Wilderness is not an isolated unit, but rather an integral part of the Puget Sound region, close to both a growing human population and a national forest system engaged in a struggle to define the future of multiple uses of the forests.⁴ Mount Rainier is one of three designated National Park System Wilderness areas in the State of Washington, and makes up 228,480 acres of the total 38.5 million acres of designated Wilderness administered by the National Park Service. Twenty-four Wilderness areas are administered by the U.S. Forest Service in the State of Washington; five of these are adjacent to the Mount Rainier Wilderness. The Bureau of Land Management manages one Wilderness area in the State of Washington.

⁴ Wortman, David. 1992. Adjacent Lands Study, Mount Rainier National Park. College of Forest Resources. University of Washington. Seattle, Washington.

FIGURE 2

Regional Setting



The park lies within 40 to 70 miles of the Seattle-Tacoma metropolitan area, and is predominantly surrounded by national forest lands administered by three separate national forest units. Private lands are located along the western park boundary in Pierce, Lewis and Yakima counties. Most private lands are commercial forest lands with only a few urban uses located along State Route 706.

USFS lands and designated Wilderness surround the park on all sides: Mount Baker-Snoqualmie (Clear-water Wilderness), Gifford Pinchot (Glacier View and Tatoosh Wilderness), and a Wenatchee administered portion of the Mount Baker-Snoqualmie on the northeast to eastern boundary of the park (William O'Douglas Wilderness). See Fig. 3. Historically, the forests surrounding the park have provided large quantities of timber for harvesting. The listing of the Northern Spotted Owl under the Endangered Species Act has resulted in significant modifications to forest activities on USFS lands. These forests contain some of the most productive forests in the world and have contributed significantly to the region's timber industry. However, as the region's urban population has grown, these forests have assumed an increasing role in providing recreational opportunities in the form of trails, campgrounds and winter sports facilities. "Spill over" recreation from USFS lands will likely affect Mount Rainier backcountry use.

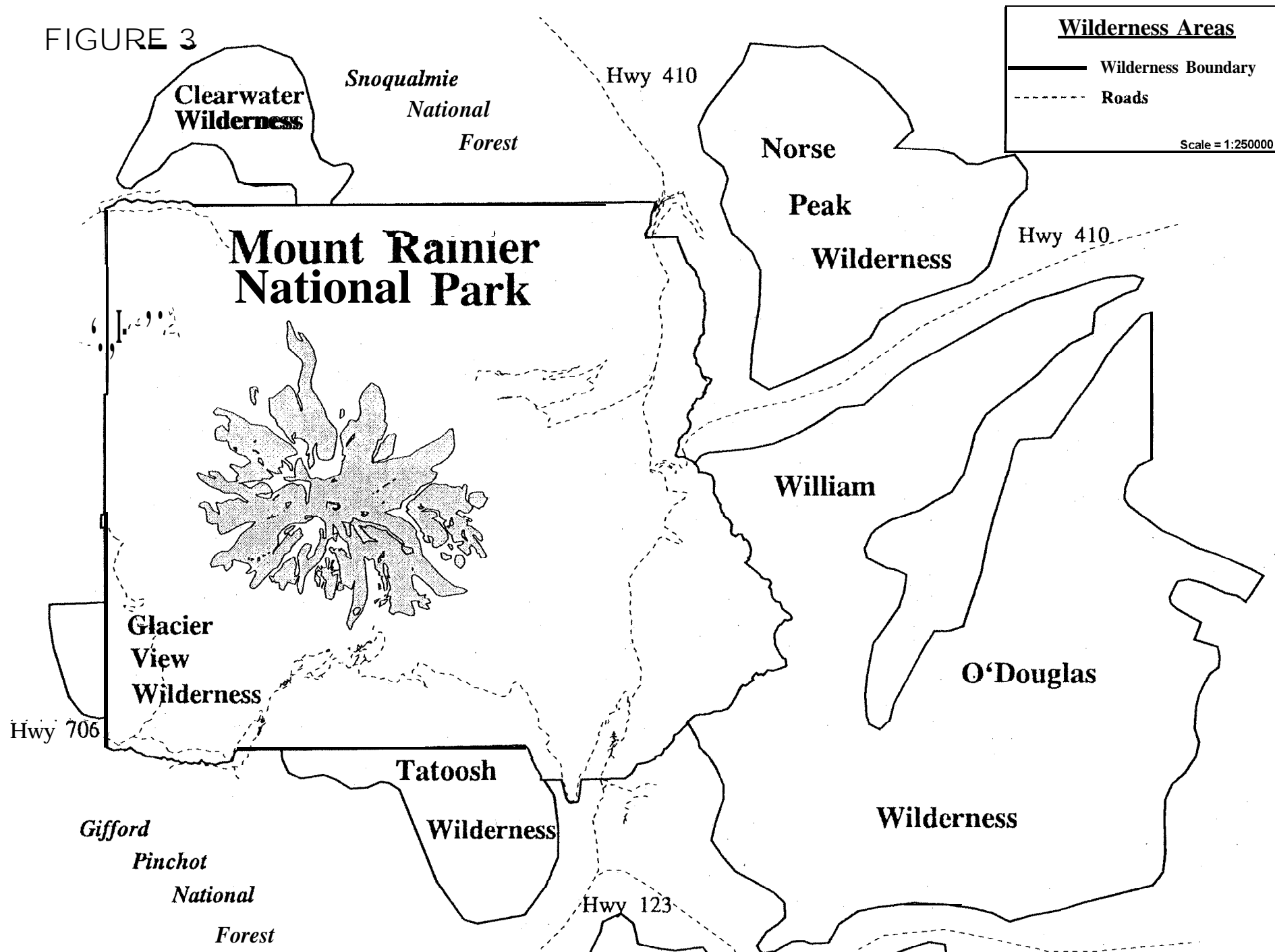
Each forest is required to develop forest plans that designate land uses over a 10 -15 year period and guide all natural resource activities and establish management standards for each forest. The listing of the Northern Spotted Owl under the Endangered Species Act resulted in significant modifications to forest activities as originally indicated in 1990 plans. At this time Congressional debate continues over spotted owl habitat. The outcome of this debate, as well as further judicial review, is likely to change current management outlined in the forest plans. All three forests with jurisdiction surrounding the Park have experienced dramatic reductions in acreage allocated to timber harvest with establishment of the Spotted Owl Habitat Conservation Areas (HCA).

Gifford Pinchot NF adjacent to the west, south and southeast park boundary is managed mostly as Wilderness. Approximately 84% of the Packwood District has been designated for conservation of the Spotted Owl.

Mt. Baker-Snoqualmie NF is on the north and east sides of the park. The White River District manages lands on the north. These lands are designated for several uses including wilderness, trailless recreation, viewshed areas, habitat for various species, recreation, Mather Memorial Parkway, Winter Recreation (Crystal Mountain) and timber harvest. Designation of HCA's encompasses 90% of the district.

The Wenatchee NF manages Mt. Baker-Snoqualmie forest lands to the east of the park, administered by the Naches Ranger District. Most of the western portion of the Naches Ranger District is designated as Wilderness. Forest lands adjacent to the park include large areas of wilderness as well as designated scenic retention, unroaded-non-motorized recreation, wild and scenic river and Mather Memorial Parkway.

FIGURE 3



The Naches district has not been as affected as widely by the Spotted Owl issues as the other surrounding forest districts although about half of the previously scheduled timber harvest have been cancelled.

Mount Rainier National Park management staff will work closely with adjacent USFS managers to address Wilderness management issues common to both agencies.

State DNR land managed for timber harvesting lies to the southwest of the park along the Nisqually River. Private commercial timber lands include Plum Creek on the northeast boundary and Champion on the western boundary.

The Puget Sound region has experienced rapid growth over the last twenty years. Much of this recent growth has encroached on the Park from the “urban fringe” of the Seattle - Tacoma metropolitan areas. The region is expected to continue this rapid growth. Lands surrounding the park are within three separate counties: Lewis, Pierce, and Yakima. The Washington State Growth Management Act was enacted in 1990 in response to legislative findings that uncoordinated and unplanned growth together with a lack of common goals toward land conservation pose a threat to the environment, to the public health, safety and welfare, and to sustainable economic development. The Act requires each County, and each municipality to develop a comprehensive plan addressing urban growth, sprawl reduction, transportation, housing, economic development, property rights, permits, natural resource industries, open space and recreation, environment, citizen participation and coordination, public facilities and services, and historic preservation. Land development regulations must be adopted within one year thereafter.

Much of the area of eastern Lewis County is in national forest. The area is not required to plan under the state Growth Management Act and currently has minimal development standards. The private lands located along SR 12 south of the park as well as along the Nisqually River are designated as Rural Mixed Use, with no current zoning and minimum lot sizes dependent only on sewer capacity.

Lewis County is the least populated of the three counties surrounding the park with a 1991 population of 60,5000 and a density of 25.1 persons/square mile. No rapid population growth has occurred here.

Pierce County is currently operating from a comprehensive plan enacted in the early 1960's but the county is in the process of updating its plan under the requirements of the Growth Management Act. Most of the eastern portion of the county adjacent to the park has been zoned as forest reserve to retain commercial forest production and growth directed into western portions of the county. Small subdivisions are scattered throughout the area. A proposal was submitted to the county for an amusement park development near the community of Elbe. Currently, development in this area is limited to one house per 80 acres, except in existing unincorporated rural centers.

Much of the land along SR 706 is designated as General Use in order to provide the minimum land use controls necessary for the less developed portions of the county. Single-family residential development is permitted; multi-family, commercial, manufacturing and industrial uses require conditional use permits.

Pierce county is the most populated and rapidly growing county of the three counties adjacent to the park. Between 1990 and 1991 the population increased by 17,597, most growth occurring in the Spanaway/Parkland area. Rapid growth is evident along the major roadways that link the park with the Puget Sound region. Population density in 1991 was 360.4 persons/square mile.

Much of the western half of Yakima County is mountainous and located in the Mt. Baker-Snoqualmie National Forest (administered by the Wenatchee National Forest), and is designated as forest watershed in the county's Optimal Land Use Plan. Private land holdings in this area are very small and scattered. There are no communities or urbanized areas in regions adjacent to the park. The area has a reported population of approximately 6300; most residents located in the extreme eastern portion of the region, near the City of Yakima. Limited rural use is permitted through subdivision, with minimum allowable lot size of 1/2 acre. The county is revising the land use plan to meet requirements of the Growth Management Act.

Visitor Use Analysis

National Park Service Wilderness policies mandate documenting use activity levels in Wilderness and describing a sociological profile of Wilderness visitors. Historical data and projections of future visitation are required in Wilderness Management Plans. Site specific information on types, amounts, time and locations of visitor use, as well as a profile of backcountry users including social measures of perceived Wilderness conditions are needed to determine whether management objectives are being achieved and to track current and project future demands on Wilderness resources. The purpose of this section is to provide a summary of historical, present, and future projected use of the Mount Rainier backcountry.⁵ A separate, more detail report summarizing backcountry recreational use is available.⁶

⁵ The term backcountry includes both Wilderness and non-Wilderness backcountry areas. Non-Wilderness areas are Camps Muir (BCCM), Schurman (BCCS), Sunrise Trailside Camp (BCSW), and the Paradise Winter Zone (WPAR). All other trails, zones and camps referred to in this report are in Wilderness.

⁶ Samora, B.A. 1993. Wilderness and Backcountry Visitor Use Analysis, Mount Rainier National Park. Mount Rainier National Park. Ashford, WA.

Overnight Use

A computer program was developed in 1981 by the University of Washington Cooperative Park Studies Unit for issuing backcountry permits and reporting use. Initially, the program was installed and operated on a mainframe computer. In 1984 the program was converted for use on a microcomputer, and visitor use nights were summarized by month for camps and zones. In 1987 the park's computer specialist redesigned the backcountry permit program to increase the data reporting and analysis capabilities. The program has been slightly modified since then to meet additional management needs.

The Mount Rainier Backcountry Permit System is a dBase program compiled using Clipper. A menu driven program is permanently installed on the park's network computer system and allows the Hiker Information Centers at Longmire and White River, and any Ranger Station to issue permits, prepare use reports by day, month, or year, or by camp, zone, or climbing route. At the end of the calendar year the Wilderness Coordinator has converted the program data files into dBase III Plus files for data analysis. Data were archived in this manner from 1984 through 1992 with the exception of lost computer data files for 1985 (hard copies of 1985 data are available). Data files from 1984 through 1987 contain information on camp and zone use, but not place of residence or many other variables we are now tracking. Data files previous to 1990 contain only permits issued during the months of June through September. Year-round permits were required for backcountry overnight use beginning in June, 1989. Data from 1981 to 1983 are not computerized but hard copies are available in the park's main backcountry files in the Wilderness Coordinator's office. Site specific data previous to 1981 are not available; however, total use statistics (visitor use nights) have been located dating from 1973. Computerized data from the University of Washington CPSU is available on tapes but, we are unable to convert these files without access to a SYBER mainframe. Darryl Johnson, sociologist at the CPSU is the park contact for this effort.

As of 1992, backcountry use can be summarized by specific camp/zone or climbing route; management zones (Trail, Crosscountry, Alpine); issuing station; trailhead entry and exit; day, month, season, or year; party size; length of stay; place of residence; stock users; and hikers vs. climbers. Additionally, we track climbers by party type (solo or group), return date, and success at reaching the summit. We also track fishing activity by camp or zone; backcountry use by Boy Scout groups; and permits issued for business (e.g., park employees working in the backcountry, natural history seminar groups, the climbing guide concessionaire, and commercial users (i.e., National Outdoor Leadership School).

Data have been summarized and presented using Harvard Graphics charts in Figs. 4 through 8 and Appendix G. All Figures noting backcountry overnight use include data from the months of June through September to allow comparison with historical data available for only these months. Data previous to 1990 include permits issued from June 15 through September 30. After 1989, data are reported for June 1 through September 30. In the future, use will be summarized by seasons for comparison with year-round data gathered since October, 1989.

FIGURE 4

MOUNT RAINIER NATIONAL PARK SUMMER BACKCOUNTRY USE

1980 - 1992

(for months of June - September only)

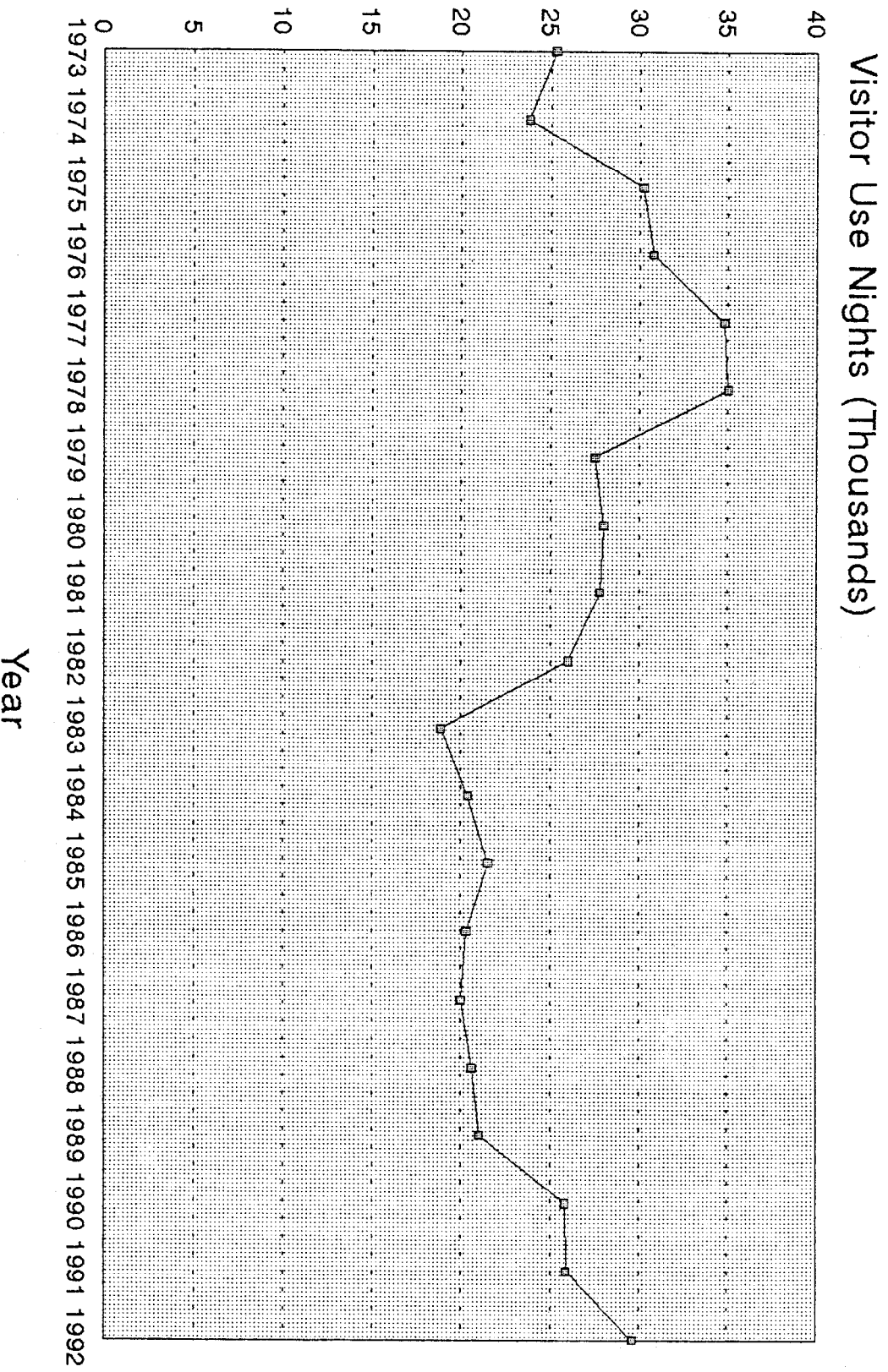
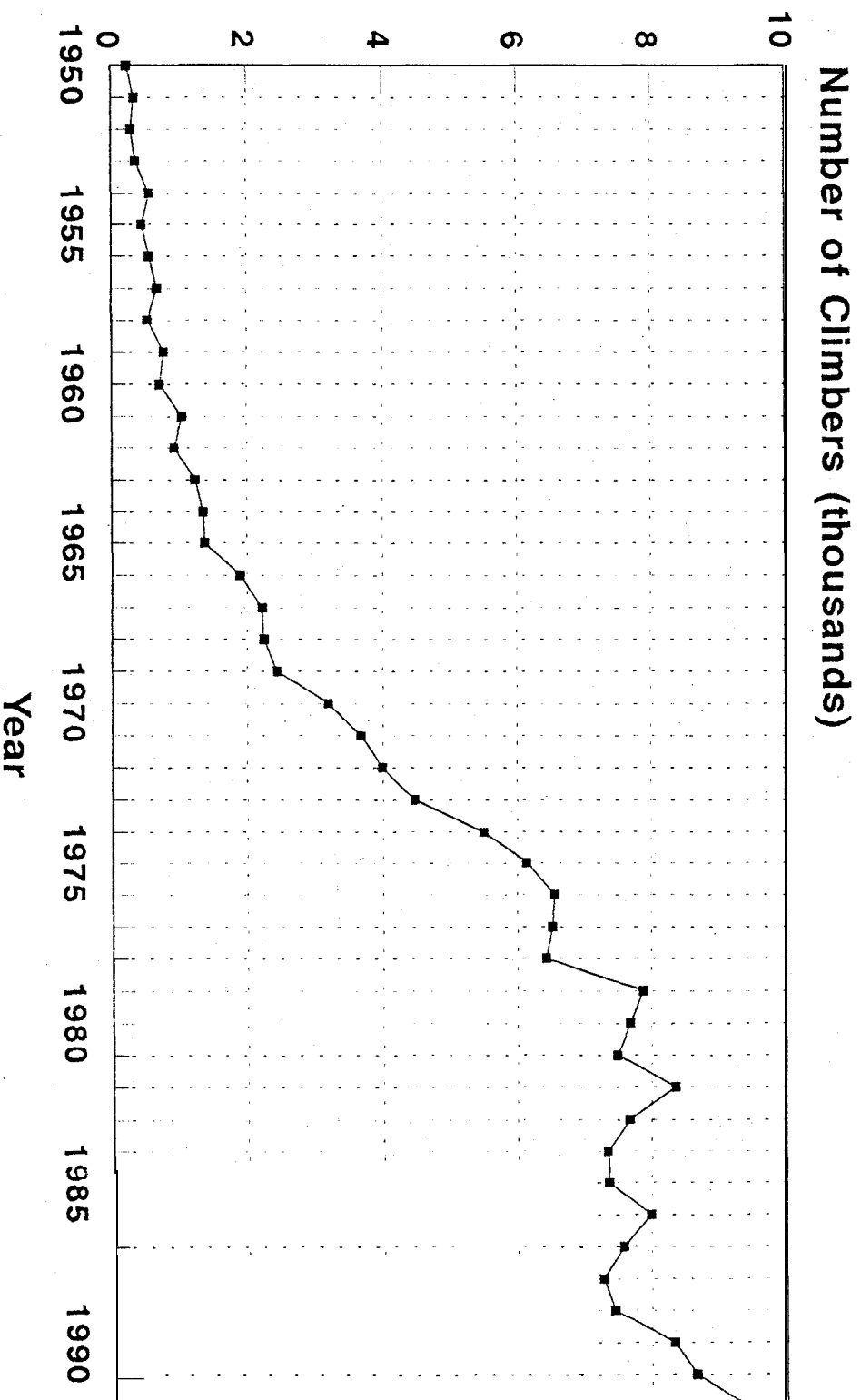


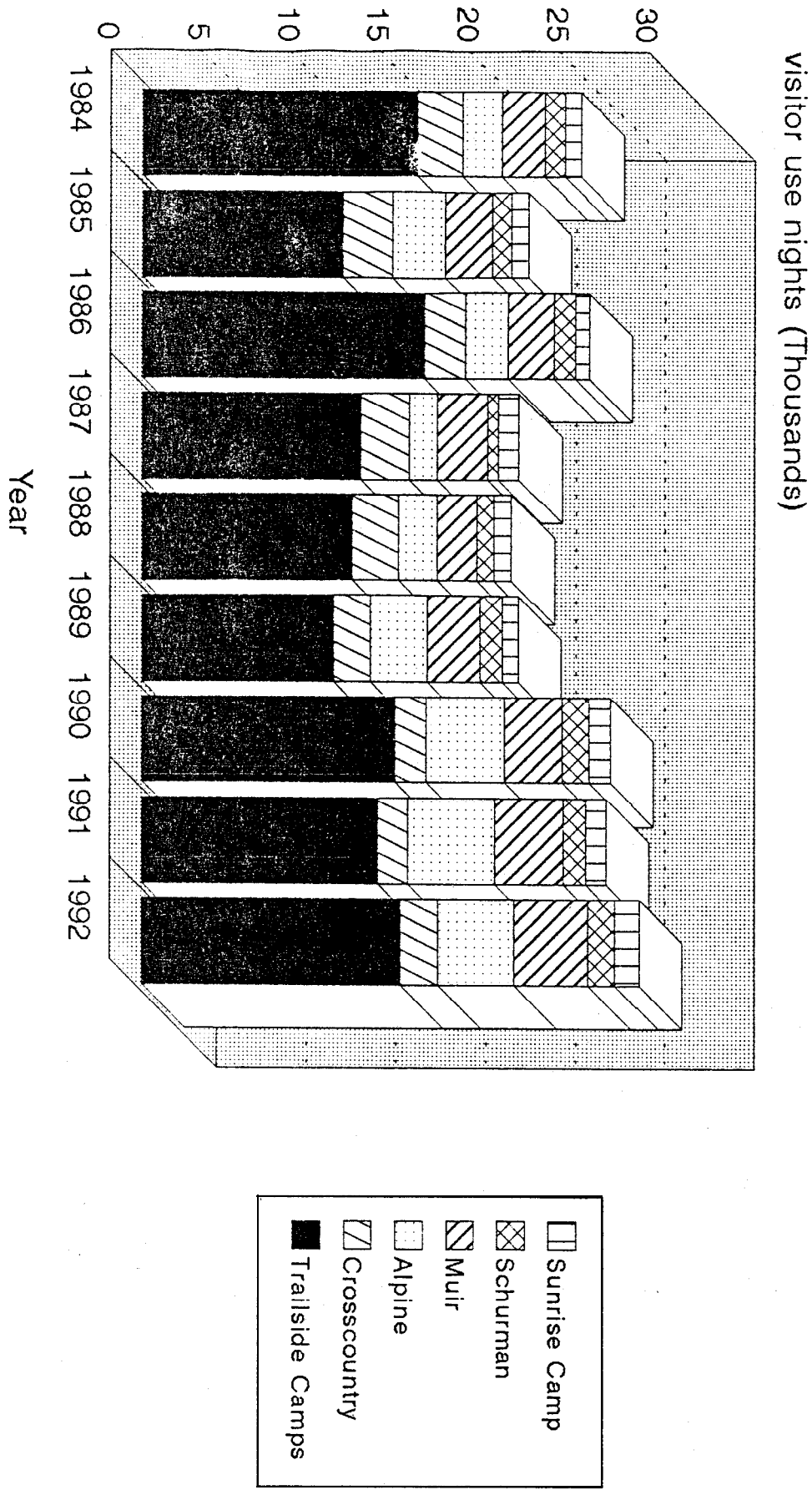
FIGURE 5

Climbing Use Mount Rainier National Park 1950 - 1992



(data gathered from climbing permits)
B.A. Satter, 3/93

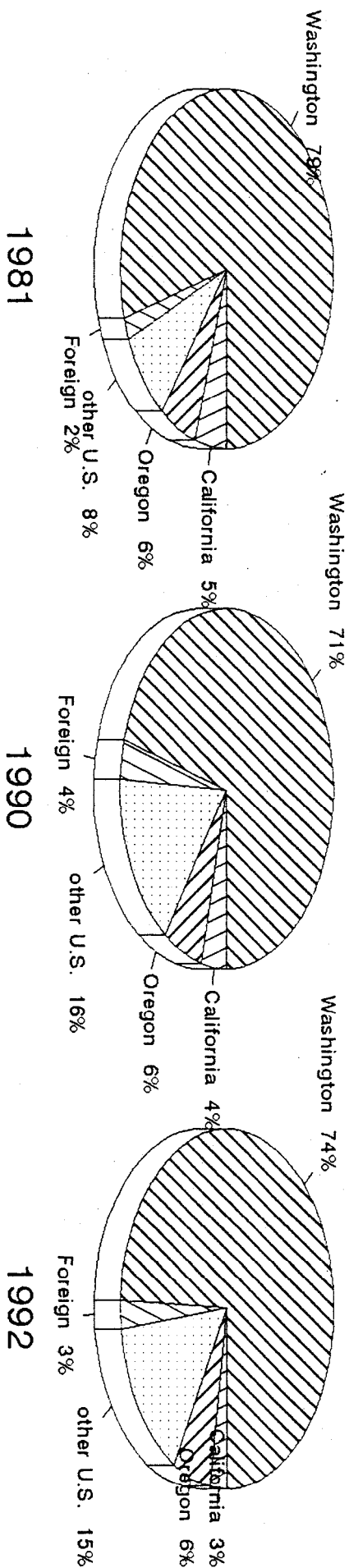
Backcountry Use By Management Zone 1984 - 1992



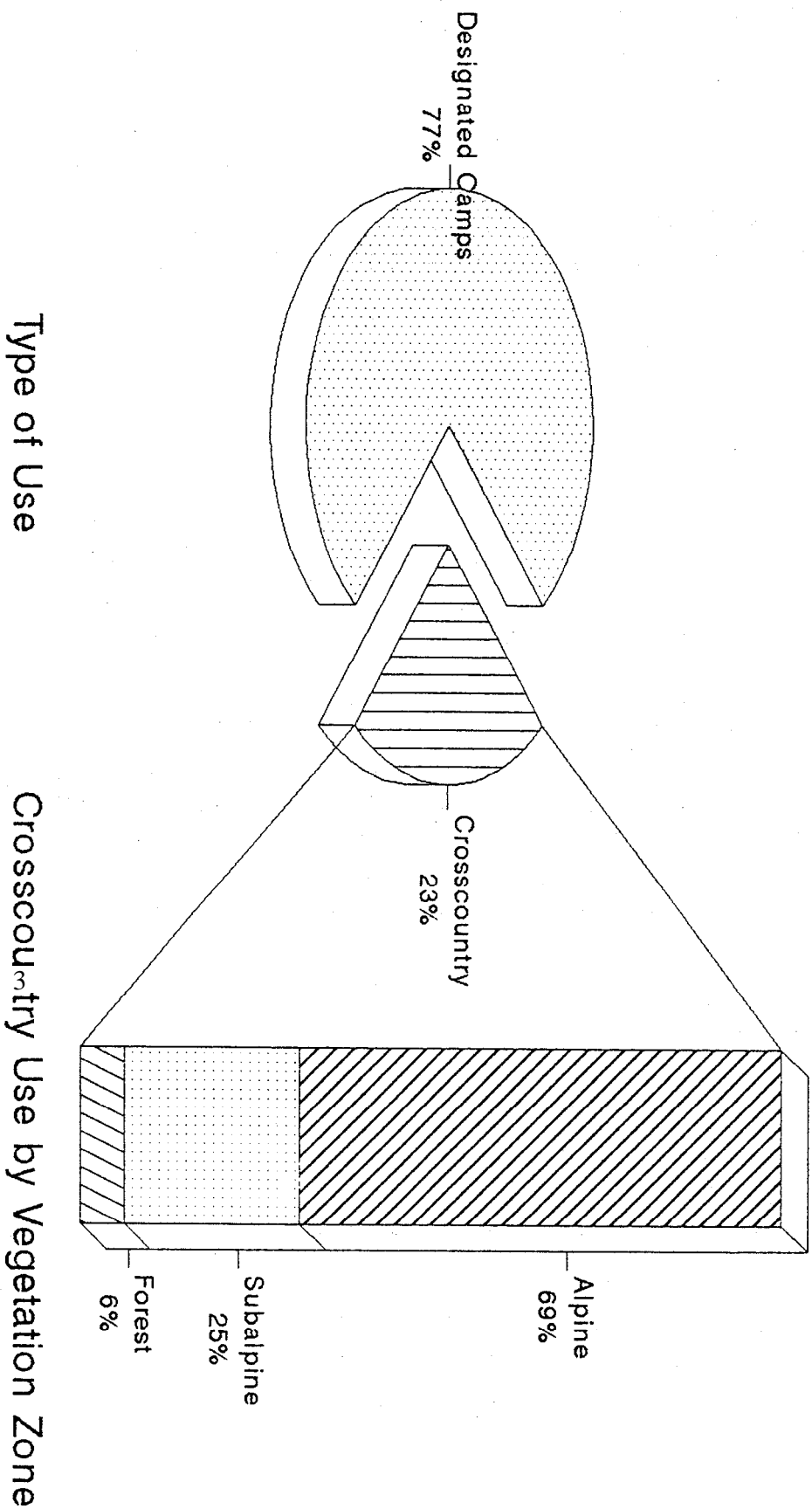
data compiled from backcountry permits
Muir, Schurman and Sunrise Camps are non-Wilderness
B.A. Samora, 2/93

FIGURE 7

Origin of Overnight Backcountry Visitors



Backcountry Use by Type and Vegetation zone 1992



Climbing statistics represent year-round use and were extracted from annual climbing reports prepared by Paradise Rangers and from the Backcountry Permit System for non-guided climbers.

Total Use

The 1990 Visitor Survey found that only 14 % of visitors stayed overnight in the park; 29 % of these visitors spent one or more nights in the backcountry.⁷

Total backcountry (visitor use nights) and climbing use (number of persons) are presented in Figs. 4 and 5, respectively. Use by management zones from 1984 - 1992 is presented in Fig. 6.

There have been few or no overnight stock users in the backcountry during the past five years. Although some day use with stock occurred in 1991, use has been extremely low in the Mount Rainier backcountry during the past five years. There are no reliable data on stock use before 1989.

Use by Season

Although most backcountry use occurs during the months of June through September (Appendix G), comparisons with 1990 data (not shown) suggest off-season use is increasing in all management zones.

Place of Residence

According to the 1990 Visitor Survey, local residents from the four counties surrounding the park account for 44 % of total park visitors. Most backcountry users were from the state of Washington in 1992 (74%), as compared with 71% in 1990 and 79% in 1981. In 1981, 19% of backcountry users resided out of state (including Oregon and California); 24% to 26 % in 1990 and 1992. Over the past decade, foreign visitors made up 2 % to 5 % of backcountry overnight use. Data were not summarized by zip codes for 1992; however, residents of the Seattle-Tacoma area made up approximately 32 % of total backcountry overnight use in 1981, and 27 % in 1990 (Fig. 7).

Type of Travel

Twenty three percent of backcountry users are crosscountry travelers, utilizing Alpine or Crosscountry zones; the remainder prefer to hike along designated trails and stay in one of the Trailside Camps (77 %) (Fig. 8).

⁷ Johnson, Darryl R., Karen P. Foster, Katherine L. Kerr. 1992. Mount Rainier National Park 1990 Visitor Survey. NPS-CPSU. College of Forest Resources, University of Washington. Seattle, Washington. 136p.

Alpine Zone standards were developed to protect fragile alpine vegetation, which cover about 10% of the total backcountry, and permanent snowfields and glaciers which also cover approximately 10% of the backcountry. Most crosscountry travel occurs in alpine environments (69%). Standards for Alpine Zones were designated in 1992 to increase protection of these fragile, but heavily used areas.

Crosscountry Zone standards were designed to protect subalpine and lower forested environments. Twenty-five percent of crosscountry travelers utilize the subalpine areas which cover approximately 23 % of the backcountry. Limitations on use were placed on all subalpine Crosscountry Zones by 1991 after inventorying human impacts, studying recreational impacts on fragile plant communities, and comparing existing conditions to standards developed for limits of acceptable change. Only 6% of crosscountry travel occurs in lower forested environments which comprise 56% of the total backcountry, and are thought to be the most resistant and resilient to recreational use. Consequently, no use limitations were placed on lower forest Crosscountry Zones.

Use by Hikers vs. Climbers

Hikers and climbers often cause different types of recreational impact. Climbers generally have a specific destination and are thought to spend less time hiking once they reach their campsite or climbing destination, but more time climbing a specific snow-covered route. Hikers are thought to spend more time traveling over snow-free areas where social trails and damage from camping can easily develop. In the mid-1980s, Rangers observed more hikers traveling to alpine areas than in previous years. Consequently, we began tracking hiker and climber use of the backcountry in 1990, with specific interest in use of fragile alpine environments outside of the designated Camps. Crosscountry hikers made up 16 % of total use of Alpine Zones in 1992 (Appendix G).

Party Size

Trailside Camp users in 1992 traveled mostly in parties of two (45 %), followed by solo hikers (23 %). Groups of five or more made up only 3 % of total Trailside Camp use. Data from 1991 showed similar trends for Trailside Camps.

In 1992 the majority of Alpine Zone campers traveled in parties of two, three and four; party sizes of seven or more accounted for only 11% of the use. Groups using Camps Muir and Schurman traveled mostly in parties of two (40%) and three (25 %); only 14% of the total use at these high camps was by parties of six or more.

Crosscountry Zone users in 1992 traveled mostly in parties of two (45 %), although 22 % traveled alone.

The majority of Wilderness Winter Zone users (Mazama Ridge, Reflection Lakes, Ice Caves, and Van Trump), travel in parties of two (51%); larger groups used the Paradise Winter Zone (WPAR). In 1992 boy scout groups comprised the majority of groups traveling with more than twelve persons (44 out of 60 total groups).

Trailhead Use by Backpackers

Trailhead use by backpackers was obtained from backcountry permits. The most heavily used trailheads by overnight users are Paradise (all trails) with 7738 combined exits and entries, followed by White River, Ipsut Creek, Sunrise, and Longmire (Appendix H). Moderately used trailheads included Mowich Lakes (trail to Tolmie or Ipsut Pass), Fryingpan Creek (trail to Summerland and Indian Bar); Sunrise Point (Palisades Trail); Narada Falls; and the West Side Road.

Trail Encounters

Trail patrol logs have been used to document trail use by day hikers, backpackers, and climbers encountered during Ranger patrols during 1991 and 1992. Historical trail use (1978 to 1988) were obtained from the park archives and Ranger district files. These data and total trail use as documented in patrol logs from 1991 and 1992 is available in a separate report (Samora, 1993). Selected data is presented in Appendix H.

The most heavily used trails during 1992 as documented by total trail encounters (average daily combined day hikers, backpackers, and climbers), were: Comet Falls (49), Ipsut Creek to Carbon Glacier (49), Snow/Bench Lake (40), Pinnacle Peak (42), Fryingpan Creek to Summerland (35), Narada Falls (34), Summerland to Indian Bar (33), Glacier Basin (21), Spray Park (28), and Carbon Glacier to Mystic Lake (27).

Day use in 1992 was highest along trails at Comet Falls, Bench/Snow Lake, Carbon Glacier, Pinnacle Peak, Narada Falls, Fryingpan Creek to Summerland and Indian Bar, and Spray Park (Fig. 9). Spray Park, Bench/Snow Lake, Ipsut Creek to Mystic Lake (including Ipsut to Carbon Glacier), Tolmie Peak, Summerland, and Glacier Basin were the most heavily used trails by day hikers in 1991 (Fig. 10). Average day use of these trails range from nine to 49 hikers. However, as many as 300 day hikers have been documented along one popular subalpine trail on a weekend day.

Information on day use at Spray Park was gathered as part of a study being conducted by the University of Washington to document social conditions and use of this heavily visited subalpine parkland. Researchers counted as many as 257 day hikers in the Spray Park meadows on a sunny weekend day, suggesting that day use may have been greater at Spray Park in 1992 than was documented in patrol logs.

FIGURE 9

Mean summer day use of trails, as documented on patrol logs for summer, 1992.

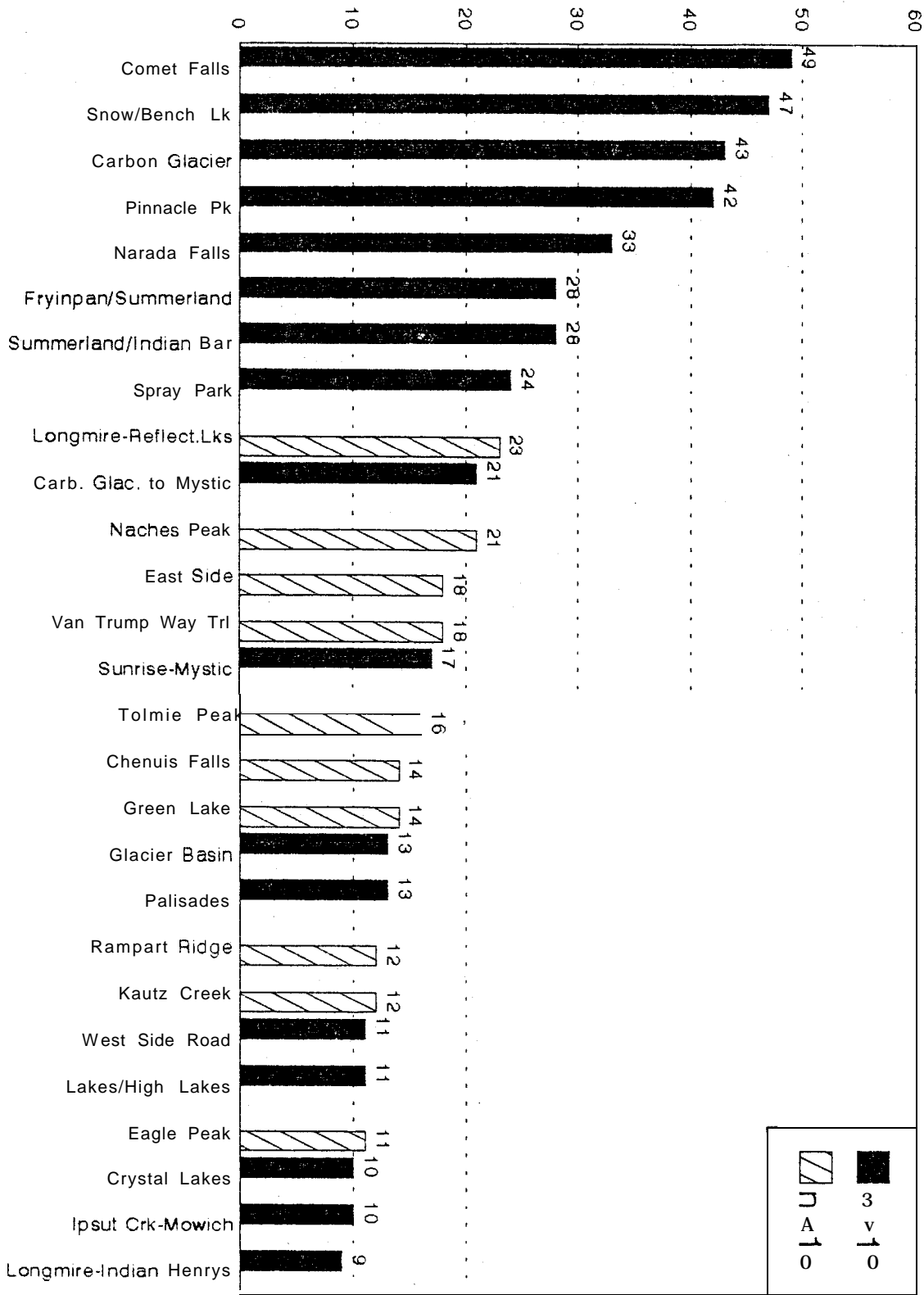
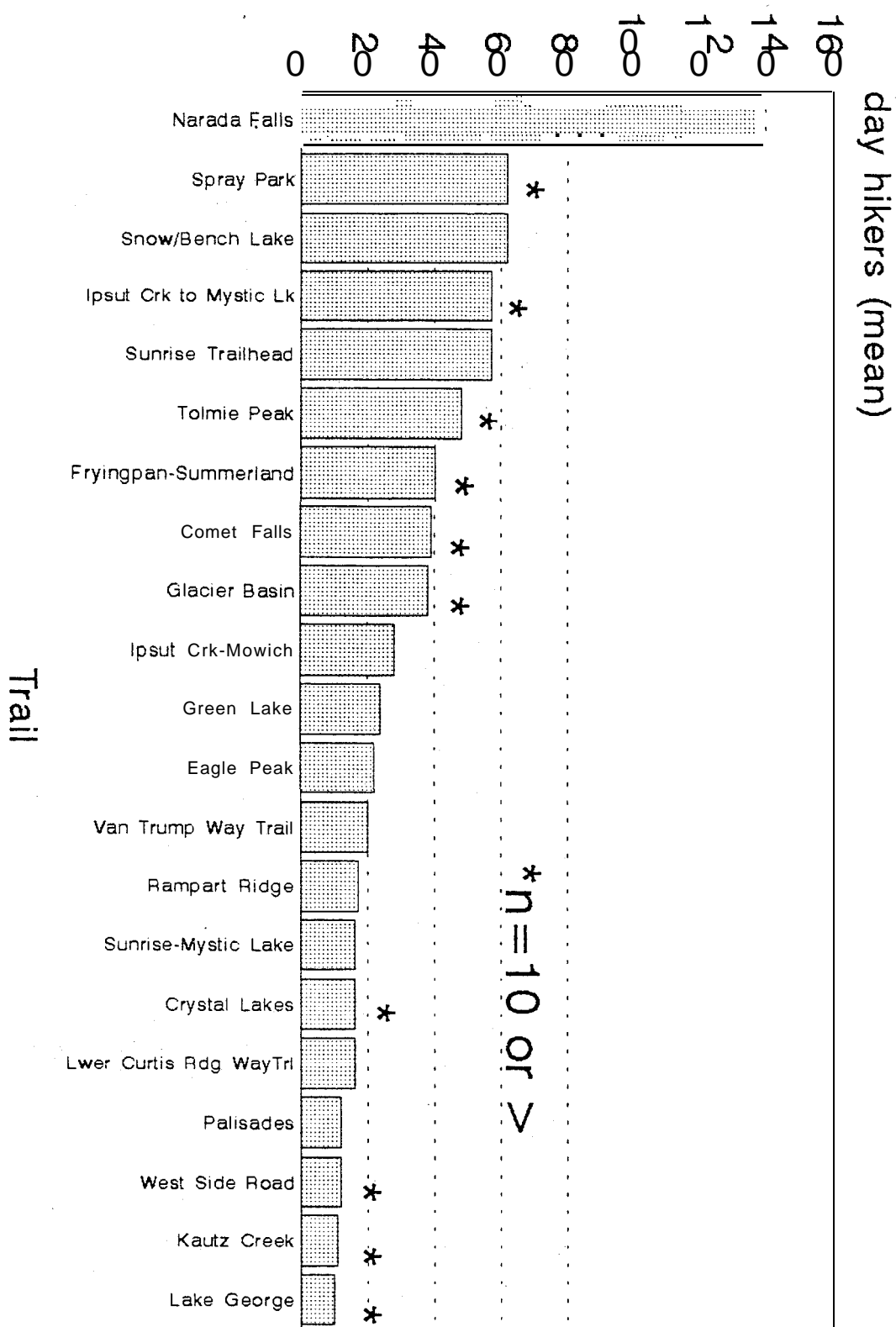


FIGURE 10

Number of day hikers on selected trails during
(mean summer value).

1991, for trails with 10 or more day hikers



data compiled from patrol logs and for Spray Park, Snow Lk, Kautz Crk, and West Side Rd from
NRP Day Use Study. Patrol data = number of day hikers recorded/patrol period.

B.A. Sr a, 4/92

Historical trail use from 1978, and 1985 through 1988, is presented in Samora 1993 and is summarized below. Most of these data are for Longmire backcountry district trails and suggest day use of Comet Falls, including the Van Trump Way Trail (WTVT) and Kautz Creek have increased substantially. Closure of the West Side Road since 1988 has affected day use of Lake George and Gobbler's Knob, and St. Andrews to Klapatche trails, but has had much less affect on use of the Golden Lakes from North Puyallup, and the Emerald Ridge trails. The average number of day hikers using the Lake George area was 19 in 1978; 23 (summer mean) for 1983-1988, and 8 (summer mean) day hikers for 1991-1992. Average use of the trail from St. Andrews to Klapatche Park was 15 day hikers and 8 backpackers per day (summer mean) for the years 1978, 1983, 1987, and 1988; and one day hiker and one backpacker per day in 1991-1992. According to these data, the Golden Lakes and the Emerald Ridge trails were not primary day use trails. Use of the Emerald Ridge trail by backpackers has been minimal. Trail counts suggest that backpacker use of the Golden Lakes trail has changed little since 1978. Overnight use of the Golden Lakes Trailside Camp initially decreased in 1988 with the closure of the West Side Road, but has increased over the past several years to slightly higher levels than those documented in 1982.

Use of the Indian Henry's area including Devil's Dream Camp, Indian Henry's Hunting Grounds, Mirror Lakes and Pyramid Peak Way Trail were well documented for the years 1983, and 1985 through 1988. Average summer use is 16 day hikers and 9 backpackers per day for 1991 - 1992, 4 day hikers and 6 backpackers in 1978; and 2 1 day hikers, and 9 backpackers from 1983 through 1988. Use of this area has changed only moderately since the closure of the West Side Road, but has shown a substantial increase from use documented in 1978.

Use of Summerland meadows was documented in 1985 and 1986. Comparisons with 1991-1992 suggest that day hiker use increased approximately 37 % since 1985.

An average of 41 day hikers used the Spray Park trail in 1986, more than 60 in 1991, and 24 in 1992 (although, as previously stated, another study suggests 1992 day use may be underestimated for Spray Park).

For trails where day use has been documented, the most heavily used trails historically were Spray Park, Summerland, and Comet Falls/Van Trump, and Indian Henry's area, followed by Lake George and St. Andrews to Klapatche Park. This trend continued through 1992, with the exception of day use at Lake George and Klapatche Park. Use by backpackers of these two areas has increased since closure of the West Side Road.

Trail Counters

Mechanical counters have been installed along selected trails to measure total trail use. Counters were designed and developed at the U.S. Forest Service Equipment Development Center in Missoula, Montana and manufactured by Diamond Scale or Scientific Dimensions. Compu-tech TR-41 trail counters were installed with a TSS-32 Trail Sensor System in

subalpine areas along the Van Trump Park Way Trail and across the creek and beyond the Trailside Camp at Summerland. The TR-41 senses vibrations of pedestrians passing over the sensor pad and activate the system's counting mechanism. All components of this trail counter are designed to be buried so that the unit is undetectable to passing hikers.

Lack of personnel and mechanical breakdowns limit the use of these data. Nonetheless, they are useful in documenting general trends in trail use. Fig. 11 presents mean values for the month of August obtained from trail counters installed along selected trails throughout the park. Trail counters were located within one mile of trailheads on most trails.

Trail counter records show the most heavily used Wilderness trails are Spray Park, trail from White River Campground trailhead to Glacier Basin and Sunrise, Comet Falls, and Bench/Snow Lake. Although Kautz Creek shows high use, data were gathered only in 1991. Heavily used Type C5 (way) trails include Pyramid Peak and Van Trump Park.* The Knapsack Pass Way trail comparatively, receives moderate use but equal to that of the Crystal Creek Type B trail to Crystal Lakes.⁹

Counters were installed at Van Trump Park and Summerland to assess the relative amounts of use by hikers traveling beyond Comet Falls and Fryingpan Creek. About two-thirds of the hikers using the Comet Falls trail continue into Van Trump Park. Most hikers (87%) using Fryingpan Creek trailhead travel beyond Summerland. All hikers passing by the upper trail counters are assumed to also pass through the lower counters. Observations by backcountry staff suggest that the percentage of hikers entering these areas from other access points is minimal.

Visitor Profile for Day Hikers

Information on visitor demographics were gathered during 1991 and 1992.

A limited survey was conducted during 1991. Informal contacts were made with day hiker groups using four Wilderness trails during the months of July, August and early September, to determine their trip objectives, place of residence, length of stay, destination, and group composition. Selected data is presented in Appendix I and in Samora 1993.

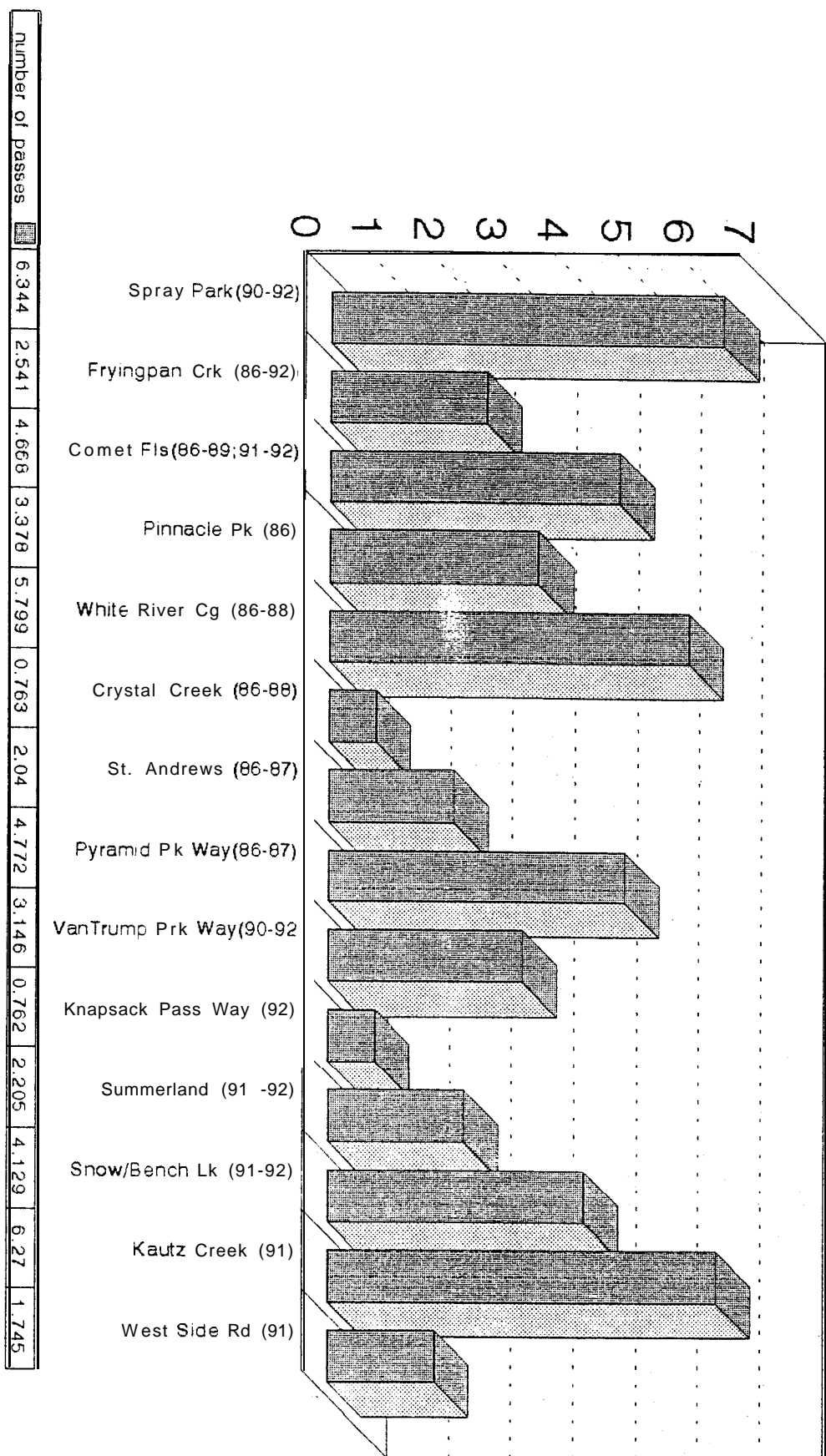
⁸ Type C5 trails are "way" trails or frequently used travelways, mostly created by hikers. These trails are normally used by experienced Wilderness travelers and are generally not marked except to protect natural resources. These trails are routinely inspected by Rangers for erosion and other resource damage. Maintenance is limited to preventing additional resource damage. Trail width should normally not exceed 18 inches.

⁹ Type B trails include the primary trails such as the Wonderland trail that surrounds the mountain. These trails are improved and maintained to accommodate foot and stock (on selected trails) traffic but contain an overall lower construction standard than Type A trails such as the Paradise trails. Type B trails contain trail construction items such as bridges, culverts and other types of drainages, punchon, and etc. Trail tread may be limited to the space required to form a single-file trail except on grades where the maximum is justified. The overall grade is less than 15%. For distances less than 150 ft., grade should not exceed 18%. Type B trails exist only in the Trail Zone of the Wilderness.

FIG 9E 11

Trail use for selected trails in Mount Rainier National Park as represented by mechanical trail counters installed along these trails. Mean values for the month of August were calculated from data available from 1986 through 1992. Sample size varies for each trail as noted by years represented.

Number of Passes (thousands)



Spray Park=from middle of switchbacks above Spray Falls; Summerland= Summerland Meadows across creek above Camp; Van Trump=way trail at beginning of Van Trump Park; Pyramid Peak=way trail beyond Mirror Lakes; White River=just past trailhead at campground; West Side Rd=.2 mile above parking lot

Contacts were made with as many groups as possible, at all points along the trail.

Contacts were made along the Spray Park trail from Mowich Lake to Spray Park on five separate days; 183 groups were contacted. The primary trip objective of 92 % of all groups contacted was hiking. Other primary trip objectives for Spray Park were photography, climbing, and viewing wildflowers. Most day hikers were from King County (83 % of these from Seattle), followed by Pierce county, and other parts of Washington state. The majority of day hiking groups were composed of friends and families, followed by solo hikers. Most groups traveled in party sizes of two, and three, followed by solo hikers. Groups with party sizes greater than five made up 4% of hikers; one group had 40 persons. Over half of all day hikers contacted visited the area for five hours; almost a quarter stayed for six hours.

The West Side Road from the parking area below Dry Creek to Lake George was sampled on three days; 22 groups were contacted. Most day hikers were from Pierce County, 14% were from King County, and 13% from other parts of Washington. Most groups were couples or friends with only a small portion of families hiking in this area. Party sizes were less than five with the exception of two groups; one was a Mountaineers hiking group. Day hikers stayed from one to seven hours with the majority staying five to six hours. Hiking was the primary trip objective for all but one group (swimming at Lake George was this group's primary objective with hiking as a secondary objective). Two groups used bicycles to access their trailhead day hike destination.

Contacts were made on the Kautz Creek trail from the Kautz Creek trailhead to Indian Henry's on seven separate days; 37 groups were contacted. A third of these hikers were from King County (mostly from Seattle); followed by Pierce County, and other parts of Washington. Most day hiking groups were couples, or traveling with families, and friends. The majority of day hikers traveled in groups of two and stayed from one to twelve hours; most groups stayed two to eight hours. Hiking was the primary trip objective of all groups contacted. No secondary trip objectives were noted.

The Bench/Snow Lake trail was sampled on six separate days; 120 groups were contacted. Over half of all groups were from the State of Washington, (13 % from Pierce County, 12 % from King County); although, almost one quarter were from states other than Washington, Oregon and California. Groups were composed mostly of couples or families; and traveled mostly in pairs, followed by groups of four. Groups over five made up 12% of use with party size as high as fourteen. One organized group (a photography group) was documented using this trail. Most day hiking groups stayed two to three hours. Hiking was the primary trip objective for almost all groups contacted; photography, fishing, viewing wildflowers, and climbing were other important trip objectives.

In 1992, demographics of day hikers at Bench/Snow Lake were gathered by a graduate student from the University of Maryland as part of a project to study the effects of a verbal interpretive message on recreational impacts.” Data was gathered on 25 separate days (Fridays through Sundays from 9:30 a.m. to 5:00 p.m.); 398 groups were contacted. The investigator contacted every group that entered the trailhead and obtained information on place of residence, trip objectives, party size, length of stay, and group type. Sixty-five percent of these groups were from Washington State with the majority from King and Pierce Counties. Most groups traveled with family members. Eleven organized groups made up 3 % of use and included commercial groups (2), Church groups (4), Youth groups (4), and two singles clubs. Organized groups ranged in size from six to 22. Most groups traveled in party sizes of two; only 11% of groups traveled in parties over five. Of the groups with party sizes over twelve, five groups were families or families and friends combined with party sizes ranging from 13 to 19. The majority of groups stayed from one to four hours. Hiking was a primary trip objective for 396 out of 398 groups; other primary trip objectives were photography, fishing, wildflower viewing, and wildlife viewing. The most important overall trip objectives noted by groups contacted were hiking, photography, wildlife viewing, wildflower viewing, and birdwatching.

The Spray Park area receives considerable day use, but with the exception of limited data gathered in 1991 and presented above, little is known about the exact amount, type of use and its relationship to resource damage. Similarly, the **extent** to which this level of day use represents a conflict with the Wilderness experiences of backpackers and day hikers is unknown. A description of visitor demographics, trip characteristics, and visitor perceptions of solitude and trip quality using Spray Park as the study area was initiated in 1992. Funding was provided through General Management Planning funds and is being conducted through a Cooperative Agreement with the University of Washington. This project is a case study in which a Limits of Acceptable Change (LAC) model will be applied to the Spray Park area. In the process, extensive analysis will be conducted on the utility of social psychological measures of perceived Wilderness conditions as desired conditions and indicators of desired conditions. In addition, social indicators will be compared with biological conditions and indicators. Results from the study will help in applying the LAC model to other park and Wilderness areas.

University of Washington investigators refined their survey and monitoring techniques during the 1992 field season. Visitors were contacted as they entered Spray Park and asked to participate in a two-part visitor use survey. Each party member completed an Entrance Questionnaire and was asked to complete an Exit Questionnaire on their return trip. A mail-in questionnaire was also pretested at the survey site. Visitor use levels were monitored by counting visitors that passed by four specific sites on the Wonderland Trail, and from Mount Pleasant. The study will continue through 1994.

¹⁶ Kernan, Anne. In prep. Effects of a Verbal Interpretive Message on Minimum Impact Compliance. M.S. Thesis. University of Maryland.

Future Projections for Backcountry Use

The majority of backcountry users are from the State of Washington. Many reside in the Puget Sound region which has grown rapidly by over one million people since 1970 and, according to 1990 census data, will increase by approximately 500,000 by the year 2000. Continued rapid growth will increase development pressures and lands adjacent to the Mount Rainier Wilderness may be converted to more urban uses. Rapid growth is evident along the major roadways in Pierce County that link the park with the Puget Sound region. Continued rapid growth will undoubtedly require transportation improvements in the form of new and improved roads and infrastructure. Such changes may dramatically increase travel to the park and affect visitors' Wilderness experience.

Outdoor recreation activities within the Park and the surrounding regions were recently projected using a model developed in the Pacific Northwest Outdoor Recreation Study (NORS).¹¹ The NORS model utilized data gathered in the 1990 Mount Rainier Visitor Survey and projected future demands on activities such as camping, hiking, sightseeing, picnicking, visits to park information facilities, etc. Results suggest activity consumption by the years 2000 and 2010 will significantly increase for backcountry camping and day hiking in the park, as compared to that of the surrounding region. Researchers believe that the demand for Park recreation opportunities will dramatically increase and continue to outpace demand in the surrounding region.

With the listing of the Northern Spotted Owl under the Endangered Species Act and the region's growing urban population, these forests have assumed an increasing role in providing recreational opportunities in the form of trails, campgrounds and winter sports facilities. "Spill over" recreation from USFS lands will likely affect Mount Rainier backcountry use.

¹¹ Hospodarsky, D., D. Johnson, P. and P. Brown. In press. Projected Consumption of Outdoor Recreation Activities within Mount Rainier National Park and Surrounding Region.

V. AREA ISSUES AND CONCERNS

1. PRESERVATION OF THE WILDERNESS ENVIRONMENT IN ITS NATURAL STATE.

As required by the park's enabling legislation, and the National Park Service Organic Act, one of the primary objectives of park management is preservation of the natural and historic features of the park. The Wilderness Act directs that areas be managed for use and enjoyment in ways that leave them unimpaired as Wilderness and for the protection and preservation of Wilderness values. These mandates require park managers to allow for public use without permanently damaging resources. However, visitor use to any degree causes some impact. Thus, the level of use that will be tolerated without causing unacceptable damage must be determined and not exceeded. Specific threats include:

Continued impacts from camping and hiking activities (trampling, vegetation damage and removal, erosion, sedimentation of lake and stream shorelines: development of social trails and campsites, expansion of way trails, damage to designated trails); impacts resulting from past management practices

adjacent land use practices (timber harvest effects on wildlife populations, biodiversity, and aesthetics)

human waste management effects on aquatic systems and public health

air quality and effects on soils, water, vegetation and dependent organisms.

effects of visitor use on wildlife

unnatural populations of elk and their effects on terrestrial and aquatic ecosystems.

Many other natural resource issues such as air quality, water resources, hazard trees, and wildlife are addressed in more detail in the park's Resource Management Plan. Additional research, baseline inventories, and long-term monitoring programs are needed to determine the effects of recreational use on Wilderness resources.

2. PROVIDE FOR DIVERSE BUT COMPATIBLE EXPERIENCES AND OPPORTUNITIES FOR SOLITUDE.

Visitors vary greatly in their expectations of a Wilderness experience. Some may come for reasons other than experiencing the Wilderness itself. Climbers, for example, frequently climb simply to get to the summit or for a feeling of accomplishment and camaraderie. Some may feel that a Wilderness experience can include other parties camped nearby, while others prefer to leave trails and all other signs of humans seeking a more primitive experience.

Specific issues are:

inadequate data on day use of the MORA Wilderness

inadequate tools to measure and monitor “solitude”

lack of information on the effects of noise and visual intrusions on visitors
Wilderness experiences at MORA

effects of aircraft overflights

effects of administrative use of aircraft and mechanized equipment

3. REMOVE AND REFRAIN FROM CONSTRUCTING STRUCTURES OR OTHER DEVICES INCONSISTENT WITH WILDERNESS. Specific issues include:

The need to remove unnecessary structures such as public shelters, unnecessary bridges, and other trail structures. One public shelter recommended for removal is designated an historic structure.

The need to maintain and interpret historic structures in Wilderness rather than viewing them as intrusions into the Wilderness setting.

Providing toilet facilities in Wilderness addresses human waste management needs but compromises Wilderness integrity and results in an increased carrying capacities for these sites.

The need for minimum signing in Wilderness

Installation and maintenance of radio repeaters and research related devices necessary for park management but somewhat inconsistent with Wilderness.

4. CONTROL VISITOR USE OF THE WILDERNESS TO THE DEGREE NECESSARY TO MEET STANDARDS ESTABLISHED FOR ACCEPTABLE CHANGE, AND TO STRIVE FOR MANAGEMENT TECHNIQUES THAT ALLOW VISITORS FREEDOM IN THE WILDERNESS.

Balancing use with preservation of Wilderness values

Use limitations necessary for protection of fragile environments.

Use limitations may be necessary due to constraints of human waste management.

5. PROVIDE FOR VISITOR AND EMPLOYEE EDUCATION/INTERPRETATION OF THE WILDERNESS

Educate visitors in Wilderness philosophy (purpose, role in society, Region and nation), management, and techniques to minimize impacts to Wilderness resources.

Educate/train employees in Wilderness Management to better protect the park, serve the public and comply with Wilderness mandates.

VI. LAWS, POLICIES, GUIDELINES

The following laws, policies, and guidelines affect Wilderness management within Mount Rainier National Park.

1. Legislation:

Mount Rainier National Park Act of 1899: Designates the park “for the benefit and enjoyment of the people” and requires regulations which “provide for the preservation from injury or spoilation” of park resources and “retention in =their natural state.”

The National Park Service Organic Act of 1916: Creates the National Park Service and directs the service to, “promote and regulate the use” of parks. It states that the “fundamental purpose” of parks is, “to conserve the scenery and the natural and historic objects, and the wildlife therein.” The act also directs the Service, “to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.”

The Wilderness Act of 1964: Provides for the designation of Wilderness areas. Directs such areas to be managed: (1) for use and enjoyment in ways that leave them unimpaired as Wilderness, (2) for the protection and preservation of their Wilderness values, and (3) for acquiring information to facilitate preservation and public use of Wilderness. The act defines Wilderness as: A tract of undeveloped federal land, of primeval character, and without permanent improvements or human habitation; where the forces of nature predominate, and the imprint of human civilization is not readily perceived. The area provides outstanding opportunities for solitude and an unconfined and primitive type of recreation. Wilderness is described in the act as, “an area’ where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain.”

The National Environmental Poficv Act of 1969: Directs all government agencies to use an interdisciplinary approach to decision making for any management actions that will impact on the environment. The Act requires the preparation of an Environmental Impact Statement that assesses the effects of proposed actions, discusses alternatives, mitigating actions, and long and short term effects.

Endangered Species Act of 1973: Requires all federal agencies to take actions necessary to ensure that management activities authorized, funded, or carried out by them do not jeopardize the continued existence of listed endangered and threatened species, or result in the destruction or modification of critical habitat of such species.

Clean Water Act (Federal Water Pollution Control Act of 1972 and Executive Order 11752): Establishes a national policy to enhance the quality of water resources and to prevent, control, and abate water pollution. The Executive Order directs all Federal agencies to comply with federal, state, interstate, and local standards and limitations regarding the quality of air, water, and land resources.

Clean Air Act of 1977: Established for the purpose of preserving, protecting, and enhancing air quality. Establishes National Parks greater than 6,000 acres as mandatory Class I air spaces. Managers of such lands have direct responsibility to protect the air quality and related values, including visibility.

Native American Graves Protection and Repatriation Act of 1990: Established to protect Native American human remains and objects on federal lands and in federal facilities.

American Indian Religious Freedom Act (42 USC 1996): Established to protect and preserve for American Indians their inherent right of freedom to believe, express, and exercise the traditional religions of the American Indians, Eskimo, Aleut, and Native Hawaiians, including but not limited to access to sites, use and possession of sacred objects, and the freedom to worship through ceremonials and traditional rites. This statute does not create additional rights or change existing authorities? but as a matter of policy in keeping. with the spirit of the law, the NPS will be as unrestrictive as possible in permitting native American access to and use of traditional sacred resources for customary ceremonials.

Redwoods Act of 1978: Reemphasizes Congressional concern for all National Park System lands: "... administration of these areas shall be conducted in light of the high public value and integrity of the National Park System and shall not be exercised in derogation of the values and purposes for which these areas have been established."

The Antiquities Act of 1906: Provides for the protection of historic or prehistoric remains, or any antiquity on federal lands.

The Historic Sites Act of 1935: Authorizes the programs that are known as the Historic American Buildings Survey, the Historic American Engineering Record, and the National Survey of Historic Sites and Buildings; authorizes the preservation of properties of national historic or archeological significance.

The National Trust Act of 1949: Facilitates public participation in the preservation of sites, buildings, and objects of national significance or interest. Created the National Trust for Historic Preservation.

The National Historic Preservation Act of 1966, as amended, 1976, 1980: Declares a national policy of historic preservation, provides authority for the expansion of the National Register of Historic Places, established the Advisory Council of Historic Preservation; and provides procedures to be followed by federal agencies in the event of a proposal that might have an effect on designated or eligible National Register properties. Requires each federal agency to establish a program to locate, inventory and nominate to the National Register all properties under the agency's control; directs each federal agency to exercise caution so that properties which may be eligible are not inadvertently transferred, sold, demolished, substantially altered or allowed to deteriorate significantly.

Archaeological and Historical Preservation Act of 1974: Amends the 1960 Salvage Act, provides for the preservation of significant scientific, prehistoric, historic, or archaeological data that might be lost or destroyed as a result of any alteration of the terrain caused as a result of any federal project or program.

The Archaeological Resources Protection Act of 1979: Provides for the protection of archaeological resources located on public lands and defines archaeological resources to be any material remains of past human life or activities which are of archaeological interest and are at least 100 years old; established a requirement for the excavation or removal of archaeological resources from public lands. Archaeological resources covered by the Antiquities Act of 1906 are covered by this act.

The Geothermal Steam Act, Amendments of 1988: Public Law 100-443 and FR 28790, Vol. 52, No. 148, identified Mount Rainier National Park as having "significant thermal features. . .". and requires protection of these features from geothermal activities outside the park.

2. Executive Orders:

E.O. 11988 "Floodplain Management," May 24, 1977 and E.O. 11990, Protection of Wetlands, ": Instructs federal agencies to avoid to the extent possible the long and short term adverse impacts associated with the occupancy and modification of floodplains and wetlands and to avoid direct or indirect support of development in floodplains and wetlands wherever there is a practicable alternative. Where floodplains or wetlands cannot be avoided, these procedures will focus on mitigation of the adverse effects of any action. (NPS Special Directive SP93-4, of August 11, 1993 provides Revised Guidelines for NPS Floodplain Compliance).

E.O. 11593 "Protection and Enhancement of the Cultural Environment," May 3 1, 1971 instructs all federal agencies to provide national leadership in historic preservation, and to assure the preservation of cultural properties in federal ownership. The order directs all federal agencies to locate, inventory and nominate all sites, buildings, districts, and objects under their jurisdiction or control that appear to qualify for listing on the National Register of Historic Places.

3. Other Designations

The Butter Creek Research Natural Area was established in 1942 and includes the entire watershed of Butter Creek, approximately 2000 acres located in the Tatoosh Range in the southern part of the park. An additional 560 acres was added to the area in 1972, encompassing portions of the drainage located on U.S. Forest Service lands in the Tatoosh Wilderness. Research Natural Areas (RNA's), are prime examples of natural ecosystems and areas with significant genetic resources with value for long-term baseline observational studies or as control areas for comparative studies involving manipulative research outside the park. NPS Management Policies direct that RNA's will be managed to provide the greatest possible protection of site integrity in accordance with their designation. Activities in RNA's will be restricted to nonmanipulative research, education, and other activities that will not detract from the areas' research values.

4. Department of Interior and National Park Service Policies:

National Park Service Management Guidelines: Establishes policies for management and use of Wilderness resources and other park activities. This includes necessary control of resource use, pollution control and abatement, to monitor critical resources for change, and modify management or other practices having adverse effects on natural processes.

NPS-77 Natural Resources Management Guidelines: Chapter 3 provides specific guidelines for backcountry and wilderness management.

NPS-28 Cultural Resources Management Guideline: Provides specific management procedures for cultural resources, including compliance with provisions of the National Historic Preservation Act (16 USC 470), the Advisory Council on Historic Preservation's regulations regarding "Protection of Historic and Cultural Properties" (36 CFR 800), and the Secretary of the Interior's standards and guidelines regarding "Archeology and Historic Preservation" (FR 48:44716-40) and "Federal Agency Responsibilities under Section 110 of the National Historic Preservation Act" (FR 53:4727-46).

Pacific Northwest Wilderness Management Program: Establishes management objectives and wilderness management standards for the NPS Wilderness and backcountry areas of the Pacific Northwest Region; and proposes actions related to Wilderness uses and capacity determination, education/training of NPS staff and public; and interagency coordination.

Mount Rainier National Park Statement for Management 1988: Contains management objectives including, “to preserve and perpetuate the park’s environmental resources and the atmosphere of Wilderness solitude on lands meeting the criteria for inclusion in the National Wilderness Preservation System” and, “to provide alternatives with minimal restrictions on backcountry users to minimize resource damage and human waste disposal.”

Master Plan for Mount Rainier National Park (approved, 1984): The Plan is based upon law and policy and establishes the purpose of the park, management categories, and the approach to be utilized in visitor use and facility development. The Master Plan identifies and guides park resource management and use, natural science research and monitoring.

Mount Rainier National Park Five-Year Goals 1988-1993: Describes six major goals and actions to be taken to improve the internal effectiveness and efficiency of park operations to gain knowledge and experience in collaborative team work and to strengthen the communication flour and sense of unity throughout the park. The six major goals are as follows:

1. Improve parkwide communications and operations.
2. Foster effective relationships with individuals and groups who affect or are affected by the park.
3. Develop the human resources of the park.
4. Excel in protecting the resource and serving the visitor.
5. Encourage commitment to effective parkwide safety.
6. Initiate a General Management Plan for the 21st century.

Resource Management Plan for Mount Rainier National Park (approved, 1986): The plan outlines various natural and cultural resource management issues, discusses the current situation and provides alternatives considered and selected to address each issue.

Fire Management Plan: The details of process and direction for carrying out the park’s wildlands fire management program are contained in this plan. The plan was approved in 1988 but is presently being amended to comply with changes to NPS-18, Servicewide fire management guidelines. Certain fires will be permitted to bum within a predetermined prescription while others will be suppressed using one or more of the available suppression strategies.

Trails Management Handbook: This plan defines standards for maintaining all park trails including Type A, B and C trails within the Wilderness.

Sign Plan: The plan is currently being revised and will define standards for sign specifications and placement in the park. Standards for signs placed in Wilderness are discussed under Chapter IX.

Hazard Tree Management Plan: Developed areas including trailside camps, patrol cabins and fire lookouts, are annually inspected in accordance with the Hazard Tree Inspection Guidelines.

MORA Restoration Handbook: Provides guidance on restoring impacted soils and vegetation in the park.

Bear Management Policy: document is scheduled to be revised and updated to reflect changes noted in this Wilderness Plan.

Other regulations and directives pertain to management of the park's Wilderness are: 36 C.F.R. and related compendium, and park Superintendent's Office Orders regarding the use of mechanized equipment, helicopters, and stock (See Chapter VIII, IX, and Appendices).

VII. AREA CLASSIFICATIONS

1. Trail Zone: This zone includes Type A and B trails, trailside camps, and areas within one quarter mile of the trails or trailside campsites. Where trailside camps are on lakes the trail zone extends to 1/4 mile around the lake. Thirty-eight trailside camps with 143 individual campsites and 23 group sites have been established (see Appendix B).¹² The Trail Zone includes areas of lower forest, subalpine, and some alpine environments. Use capacities in the trail zone are established by the number of campsites available and are based on ecological and sociological considerations as specified in the standards outlined in Chapter VII. Stock are permitted on specified trails and at four camps in this zone (with 16 individual and three group sites). (See Appendix E). 60,317 acres are included in this zone.
2. Crosscountry Zone: Crosscountry zones are located a minimum of one quarter mile from the Trail zone (including trails and trailside camps) and from roads. Crosscountry zones extend from lower forest areas to subalpine environments up to treeline, which generally begins at 6000 to 6800 ft. elevation.

Visitors are expected to use these zones without man-made guides or assistance such as signs or Type A or B trails, although some Type C trails exist. Hikers are asked to utilize Type C trails where they exist rather than creating numerous paths throughout these areas. No designated campsites exist and visitors are required to follow minimum impact camping techniques.

There are three unlimited use zones in the lower forest zones and 31 limited use zones (providing overnight camping for a total of 71 parties per night) throughout the lower forest and subalpine environments. Group size is limited to five persons/party. Use capacities are based on ecological and sociological considerations as specified in the "standards" stated in Chapter VII. Existing conditions are compared with these standards in determining use limitations for these zones. 127,249 acres are included in this zone.

3. Alpine Zone: This Zone extends above treeline, generally from the 6,000 foot elevation level and contains primarily exposed rock, glaciers and snowfields. Some areas have narrow Type C trails that lead to heavily used vistas or climbing routes. Hikers are asked to use these trails where they exist.

¹² This includes the Sunrise Trailside Camp which is outside of the designated Wilderness (see Appendix A).

Campers are encouraged to camp on permanent snow or ice; use only bareground areas that have previously been used as campsites; or may camp in the designated campgrounds at Camp Curtis.¹³ Camping on vegetated areas is not permitted. No new sites are permitted to be constructed, and enhancement of existing sites with additional construction such as rock walls or windbreaks is not permitted.

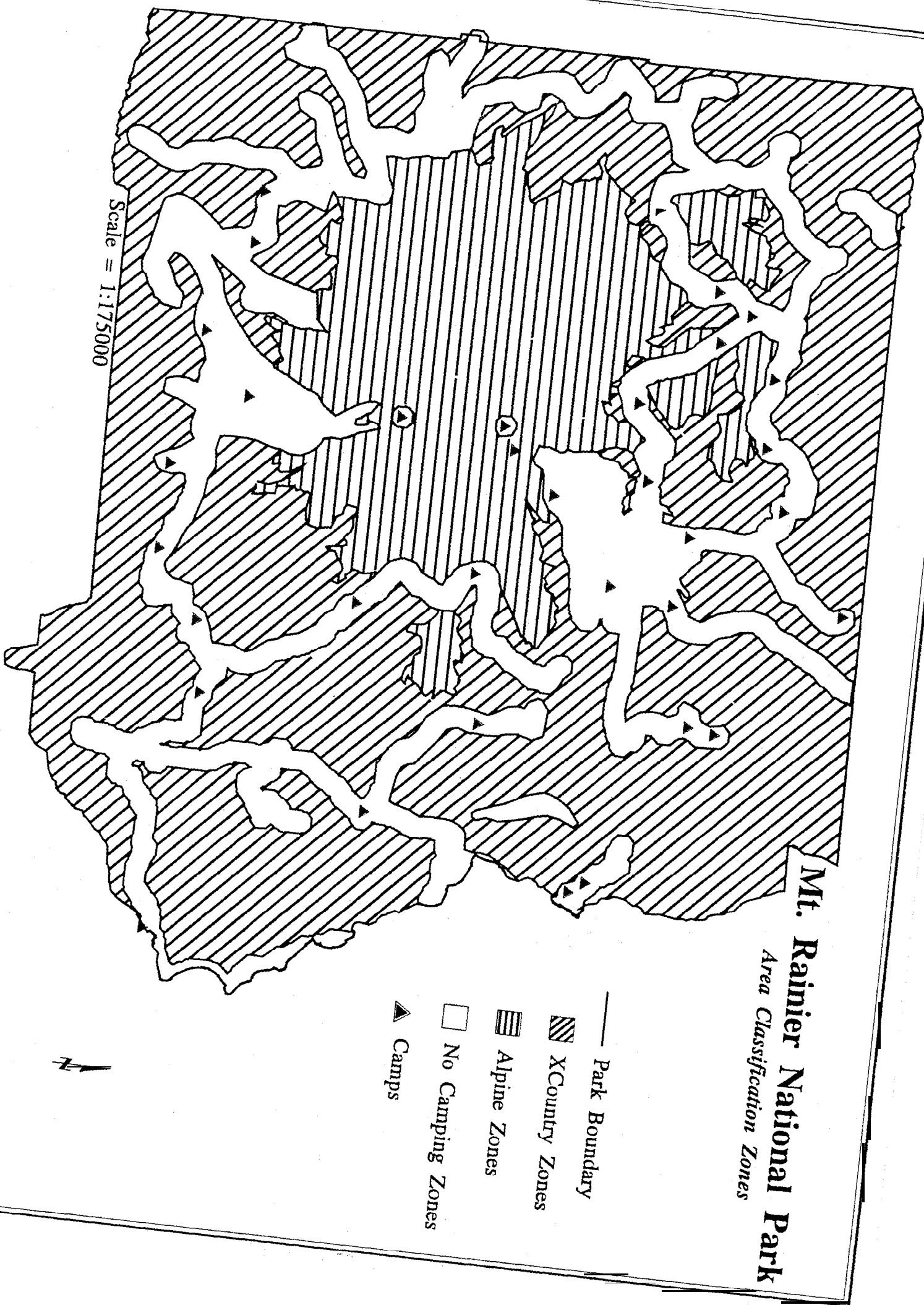
There are ten limited use Alpine Zones providing overnight camping for a total of six parties per night; two limited use zones providing overnight camping for a total of 72 persons per night; and 9 unlimited use Alpine Zones. Group size is limited to 12 persons when camping on snow and ice and five persons when camping on bareground. There are 47,147 acres are included in this zone.¹⁴ Capacities in these zones are established based on ecological and sociological considerations as specified in the “standards” stated in Chapter VII with special emphasis on resource damage to alpine vegetation; sanitation considerations and effects on downstream waters; and crowding.

4. No Camping Zone: This includes all areas within 1/4 mile of and including Type A and B (designated) trails, established camps, areas within 1/4 mile of roads (summer conditions), areas within 200 ft. of roads (winter conditions), and other specially designated areas that cannot tolerate resource impacts that may result from camping activities, or to protect public water supplies. See Appendix B for description of current No Camping Zones.

¹³ Camping is also provided at Camps Muir (overnight camping for 110 persons) and Schurman (overnight camping for 35 persons) which are outside of the designated Wilderness and are addressed in a separate plan (see Appendix A) .

¹⁴ This includes Emmons Flat which is also outside of the designated Wilderness and is addressed in a separate plan (see Appendix A).

FIGURE 12



VIII. STANDARDS FOR WILDERNESS RESOURCES AND SOCIAL CONDITIONS

The Wilderness Act mandates that present and future generations will have available “an enduring resource of wilderness:” and an area “retaining its primeval character and influence, . . . managed so as to preserve its natural conditions, ” and an area which “generally appears to have been affected primarily by the forces of nature, with the imprint of man’s work substantially unnoticeable (See Appendix C). Park management must determine at what point “substantially” and “noticeable” change has occurred and does not appear to have been caused “primarily” by the forces of nature. Consequently limits of acceptable change for major resource and social conditions (factors) have been described in the form of “standards. ” “Indicators” listed are the variables to be measured to detect the state or condition of the resource and to measure the standard.

Standards have been developed using our best available knowledge of the Mount Rainier Wilderness including ecological limitations, visitor use and existing environmental conditions; and current literature available on Wilderness management. These standards will be reviewed annually and refined as we gain more knowledge on their effectiveness in meeting Wilderness management objectives. In addition, a discussion of current conditions and monitoring programs pertaining to each factor is included. Specific actions are defined to improve conditions when they are not consistent with standards.

Factor: AQUATIC RESOURCES

Indicators

Obvious signs of pollution from humans and stock, litter, food particles, cleansing agents and other wastes; high levels of chemical and biological indicators of cultural eutrophication of lakes, streams and wetlands; presence of social trails adjacent to lakes, streams or wetlands; habitat and populations of aquatic organisms (fish, amphibians, macroinvertebrates, aquatic vegetation, plankton).

Current Conditions

There are approximately 382 lakes, 470 rivers and streams and an unknown number of cold and hot springs in the Wilderness. All but two creeks originate inside the park Wilderness. The majority of influences on park waters are from management activities, visitor use or atmospheric influences. Threats such as alterations due to air pollutants and from human use, sedimentation from shoreline erosion and contamination with human wastes, and past management activities such as fish stocking and efforts to eliminate exotic fish species? are recognized and are currently being investigated. Approximately 12 amphibians, several species of Sculpins and Salmonids (cutthroat, Bull Trout/Dolly Varden, whitefish and possibly steelhead and salmon are native; several species of trout, and kokanee salmon were introduced); and an unknown number of aquatic macroinvertebrates, zooplankton and phytoplankton species exist in the aquatic systems throughout the Wilderness. Additional

inventories and long-term monitoring programs are needed to determine the status of these species and overall state of the aquatic systems within the Wilderness.

Visitors are advised to treat surface waters when used for drinking water. Information on the recommended methods of treatment can be obtained at all Ranger stations.

Current Monitoring Actions

Aquatic Conditions are evaluated according to EPA National Surface Water Survey Analytical Methods Manual (1985). Measurements of physical, chemical and biological parameters are rated according to legal and recommended EPA standards for Quality Criteria for Water (1976); and comparison to other similar natural systems; presence of coliform organisms is evaluated according to the State of Washington Administrative Code.

Eighteen stream sampling stations were monitored during spring, summer and fall from 1986 to 1988 to establish baseline information on water quality and to detect threats to surface waters. A qualitative fish survey was conducted during 1993. Forty-two lakes have been sampled since 1987. Aquatic resources have been monitored for physical, chemical and biological parameters: temperature, transparency, turbidity, dissolved solids, dissolved sediments, dissolved oxygen, pH, conductivity, ions, nutrients, metals, fish, macroinvertebrates, and plankton. Some recent inventories have included amphibians. Sampling frequencies for future monitoring will be determined after careful analyses of this multi-year inventory effort. The effects of human wastes on aquatic resources is also discussed under the Sanitation factor.

Current Policy

All lakes and streams are naturally occurring and are largely unaltered by humans, with the notable exception of stocking of non-native fish up until 1972. Aquatic ecosystems will be managed to maintain and restore natural processes and native species indigenous to the Wilderness.

Trail Zone

NO campsites will be located less than 100 feet from surface waters, except as noted below.” Where trailside camps are located on or adjacent to lakes, NO camping is permitted within one-quarter mile of the lake except in the designated campsites

15 When trailside camps were established in the 70's and 80's, some campsites were intentionally designated in previously disturbed areas. Rather than create additional disturbance to the Wilderness, campsites located less than 100 feet from waters that are not threatening aquatic or other natural resources will not be relocated. Justifications will be prepared for each site, documenting our reasoning for not complying with this standard, and will be on file in the Wilderness Coordinators office.

(between June 1 and September 30 or anytime when snow depth is two feet or less). NO toilet facility will be placed less than 200 feet from surface waters and all toilets will meet specifications as described under the Sanitation factor. NO washing or use of cleansing agents, disposal of dishwater or food, human or animal wastes is permitted within 200 feet of surface waters, NO trails will be permitted in areas where they may cause sedimentation into adjacent surface waters, or threaten critical habitat of aquatic organisms (such as herptofauna or shoreline macroinvertebrates). See Wildlife Factor and standards.

Standards: NO measurable degradation of water quality (as determined through aquatic resource monitoring programs) should result from human activity, including park administrative use and management of the Wilderness. Coliform counts for adjacent lakes and streams will not exceed the legal limit as defined by the State of Washington Administrative Code.

Actions: Long-term monitoring programs will be conducted to determine the effects of recreational use and management activities on aquatic resources and to develop more measurable standards such as using mean concentrations of selected nutrients (e.g., nitrates, sulfates, phosphates), and identification and monitoring for indicator species. Sites suspected of contributing or causing water quality problems may be more frequently monitored. Where adjacent surface waters are suspected of being seriously degraded by recreational use, as suggested by documented chemical, biological or physical characteristics, trailside camps may be closed or use limited until problems can be mitigated. Visitors will be advised to treat all drinking water. Campsites located less than 100 feet from surface waters that threaten aquatic or other natural resources will be closed and restored to natural conditions. Toilet facilities not meeting Sanitation standards will be removed, relocated and/or replaced with an alternative waste management system, if feasible. Periodic inspections of management facilities such as underground fuel tanks and sewage treatment facilities will be conducted to prevent contamination to downstream Wilderness areas. Inventories of aquatic organisms will be conducted and habitat maps developed to aid in monitoring the effects of human use on aquatic fauna. Trails that threaten aquatic resources will be closed and damage mitigated. Public education: interpretive media and enforcement of regulations will be utilized to protect aquatic resources. Introduced fish species will be eradicated using methods that are least disruptive to aquatic ecosystems and values.

Crosscountry Zone

NO camping is permitted less than 100 feet from surface waters. NO washing or use of cleansing agents, disposal of dishwater or food, human or animal wastes is permitted within 200 feet of surface waters. NO trails will be permitted in areas where they may cause sedimentation into adjacent surface waters, or threaten critical habitat of aquatic organisms (such as herptofauna shoreline macroinvertebrates). See Wildlife Factor and standards.

Standards: Standards for this zone will be the same as described for the Trail Zone.

Actions: Actions are similar to those stated for the Trail Zone. Areas suspected of seriously degrading water quality may be closed or use limited until problems can be mitigated. Users will be advised of area closures by signs at the site and through backcountry permit restrictions. Campsites located less than 100 ft. from lakes, streams or wetlands will be closed and restored to natural conditions. Trails that threaten aquatic resources will be closed and damage mitigated. Public education, interpretive media and enforcement of existing regulations will be utilized to protect aquatic resources.

Amine Zone

NO camping is permitted within 100 feet of lakes, tams, or streams. NO trails will be permitted that threaten adjacent aquatic resources. NO toilet facility will be placed less than 200 feet from lakes, streams or tams. When toilet facilities are not available, visitors will be directed to utilize the disposal methods as described under the Sanitation standards for the Alpine Zone. NO washing or use of cleansing agents, disposal of food, human or stock wastes is permitted within 200 feet of lakes, tams or streams .

Standards: Human waste will not contaminate downstream areas (as determined through monitoring programs). Coliform counts for adjacent lakes and streams will not exceed the legal limit as defined by the State of Washington Administrative code.

Actions: Long-term monitoring programs will be conducted to determine the effects of human use on aquatic resources and to develop more measurable standards. Where human use is suspected of being a threat to aquatic resources (as documented through monitoring programs), or creating public health threats to backcountry water supplies, areas may be closed or limited to visitors until problems are mitigated. Public education, interpretive media and enforcement of regulations will be utilized to gain compliance.

No Camping Zone

Standards and actions for the No Camping Zone are the same as for the Trail Zone except that NO camping is permitted.

Factor: WILDLIFE

Indicators

Population declines or increases, wildlife displacement due to presence of humans; unnaturally high populations due to human factors and resulting in unnaturally occurring impacts on terrestrial and aquatic systems; habituated wildlife problems (with some consideration for visitor and employee safety); introduced or non-native animal species; and documented cases of poaching.

Current Conditions

Mount Rainier provides diverse habitat for about 130 species of birds, 50 species of mammals, approximately 12 species of amphibians and 2 species of reptiles. External land management practices influence habitat and wildlife populations within the park. Information on invertebrates is scant. No formal program exists for the management of wildlife resources in the Wilderness. However, elk, bear and goat have been specifically addressed in the park's Resource Management Plan. Exotic animals known to inhabit the Wilderness include several species of non-native fish and insects. An occasional feral cat has been observed in the Wilderness. No other exotic animals have been documented. Inventories of herpetofauna were initiated in 1991.

Current Monitoring Actions

Wildlife conditions are evaluated by the impact internal and external influences have on animals, especially rare, threatened and endangered species. Wildlife observation cards are used to document the presence of wildlife. Monitoring programs for elk and northern spotted owl document the presence and habitat use of these species in the park.

Numerous wildlife studies have been conducted over the past several years and include studies of vertebrates such as elk, goat, Spotted Owls, amphibians and reptiles; and invertebrates such as Coleoptera and Lepidoptera. Records of wildlife observations are maintained. However, there are no specific programs for monitoring effects on wildlife as it pertains to Wilderness management.

A literature search was conducted to determine wildlife indicators that could be used to develop LAC standards (Walkinshaw 1992; Keman 1992).

Poaching patrols are conducted by the Rangers during the fall hunting season.

Current Policy

Wildlife will be managed to allow natural ecological successions, including natural infestations of native insects, to operate freely without human influences unless public health

is threatened. Wildlife indigenous to the Wilderness will be maintained with emphasis on rare species. Extirpated (indigenous) species may be introduced into the Wilderness, subject to NPS policies pertaining to wildlife. Artificially high wildlife populations that are severely damaging terrestrial and aquatic ecosystems may be controlled, according to National Park Service Policies. Exotic species may be controlled using integrated pest management techniques. (Management Policies, 1988).

Trail Zone

Wildlife may invade campgrounds in the Trail Zones. Visitors will be instructed to store food properly and without damaging vegetation. All food cooked for a meal should be eaten, no leftovers. Cooking and eating equipment should be cleaned as soon as meals are over. Cooking activities should be a reasonable distance from sleeping areas. Structural pests identified in patrol cabins, fire lookouts and historic shelters, will be controlled using integrated pest management (IPM) techniques and are subject to NPS policies pertaining to IPM.

Standards: Visitor use will not decrease wildlife habitat quality by more than 10% within the Trail Zone.

Actions: Indicator species (sensitive to human presence), will be identified to determine the effects of human use on wildlife. Population trends and distribution will be monitored. Critical habitat for these species will be identified, mapped, and monitored to determine the efficacy of standards. If human influences are determined to be severe (as measured against the standard), actions will be taken to mitigate the effects through limits on use or complete closure of areas. If certain animals become more than an occasional nuisance measures will be taken to reduce the problem by temporarily closing the site to public use until the animal is no longer frequenting the area. Actions will focus on removing the human influence. Patrol cabins and historic structures will be monitored regularly for structural pest problems.

Crosscountry Zone

Standards: No decrease in the quality of wildlife habitat will be permitted in Crosscountry Zones.

Actions for the Crosscountry Zone will be the same as for the Trail Zone with the exception of campground closures for nuisance animals. Since no designated camps exist in this zone visitors will be advised when problem animals are frequenting a particular area. Areas may be closed if displacement of wildlife has been determined to be the result of human use. No structures exist within Crosscountry Zones.

Alpine Zone

Standards and Actions for the Alpine Zone will be the same as for the Crosscountry Zone.

No Camping Zone

Standards and Actions for the No Camping Zone will be the same as for the Trail Zone except that no camping is permitted in this zone.

Factor: SANITATION

Indicators

Human or stock waste, toilet paper, offensive odors, sightings of inappropriate sanitary behavior, litter in toilets or on the ground, presence of toilet holes, pollution of nearby waters as indicated by high levels of chemical and biological indicators, excessive noise from administrative use of helicopters in removing human wastes from Wilderness and backcountry areas.

Current Conditions

Human waste disposal is one of the most critical management problems of the Mount Rainier Wilderness and other backcountry areas. Fecal waste is often the medium for disease, can cause alterations to aquatic ecosystems and create aesthetic problems. Giardia and other evidence of water contamination have been documented throughout the Wilderness, and employees and visitors are advised to treat all drinking water. Sanitation is a particular concern for the alpine areas of the Wilderness. The increased use of the high elevation sites has resulted in the accumulation of human wastes. Wastes do not decompose rapidly on snowfields and as spring melt occurs, the past season's accumulation becomes apparent. Alpine hikers and climbers generally melt snow for drinking water, increasing the potential for contamination from these wastes. Complaints have been frequently received about the volume of human wastes observed along the more popular climbing routes. Disposal of human wastes during the winter-use period is also a concern.

Several methods of waste disposal are available to Wilderness users, but no means are without problems. Historically, toilets have been provided at trailside camps, patrol cabins and fire lookouts as well as in heavily used areas of the Alpine Zone where they are essential for resource and visitor protection. However, several pit toilets in trailside camps have been inappropriately placed and threaten adjacent surface waters. Helicopter removal of human wastes from Alpine toilet facilities is costly, time-consuming, and poses some threat to employee health. Other methods for human waste disposal include compost-assisted toilets, surface disposal, "catholes," and the "blue bag" system. Surface disposal increases decomposition through exposure to sun and air, but also increases the likelihood of contact

by humans, and if improperly located, of water pollution. “Catholes” are shallow (approximately 6” deep) holes dug in the organic layers of the soil where microorganisms are thought to be more abundant. However, research has suggested that a number of pathogens survive for at least one year buried in the most organic layers of the soil, and depth or type of burial appear to have no bearing on reducing pathogens. Thus buried feces can remain a health hazard for years. The “blue bag” system was initiated in 1984 to address human waste disposal problems in alpine areas, especially along popular climbing routes. Visitors are asked to place human wastes inside plastic bags available at all Ranger stations, and to dispose of bags at designated locations, usually outside of the Wilderness. Wastes from blue bags and alpine toilets are disposed through licensed waste facilities. Additional public education efforts and emphasis on voluntary compliance is needed to determine the adequacy of the blue bag system.

Backcountry hikers and campers are expected to carry out their trash. Burying trash or depositing trash or human wastes in crevasses is not permitted.

Current Monitoring Actions

Sanitation conditions are evaluated based on presence or absence of human waste outside of toilets and privies, the level of nutrients, especially nitrogen compounds and abundance of aquatic macrophytes found in adjacent aquatic systems, the presence of microorganisms associated with public health concerns (as stated in the State of Washington Administrative Code), and the proper placement of pit toilets based on soil and vegetation conditions of the surrounding area.

Sanitation conditions are monitored in all zones through documentation on backcountry impact cards. Backcountry Rangers and/or Maintenance employees periodically (not regularly) inspect toilets in Trail Zones and the designated campgrounds in the Alpine Zone. Inventories and long-term monitoring programs are needed to establish more measurable standards for the sanitation factor. See Aquatic Resources factor for additional monitoring actions.

A study was initiated in 1991 to develop site-specific criteria for locating and maintaining pit toilets and providing recommendations for alternative waste management systems for backcountry areas.

Current Policy

The objectives for managing human waste disposal in the Wilderness are to prevent contamination of surface and ground waters, minimize discovery by others, and to maximize decomposition of wastes.

Trail Zone

A toilet will be provided, where feasible, at trailside camps (for public use), and backcountry cabins and fire lookouts (for administrative use). Toilet paper will not be furnished. Generally, no toilet will be located less than 200 feet from surface waters, within the zone of seasonal high groundwater, or in poorly drained soils. Pit toilet holes for human waste disposal are acceptable at most Trailside Camps where suitable site conditions exist, although other methods, such as composting toilets may be employed where possible. Site selection for pit toilets will be made based upon soil conditions, depth of water table and distance from campsites and surface waters; and locations will be selected to minimize the presence of offensive odors and pests. Toilet design and siting will minimize visual impacts. Visitors in trailside camps are encouraged to use toilet facilities. Visitors hiking along Trail Zone trails are also encouraged to use toilet facilities at trailside camps. Where nearby toilet facilities are not available, NO human waste will be deposited less than 200 feet from surface waters; and "catholes," will be dug at least 6 inches deep in the organic layer of the soil. Visitors and staff are required to pack out all trash.

Standards: Coliform counts of adjacent surface waters will not exceed the standards as defined by the State of Washington Administrative Code (Chapters 173-201, sub-paragraphs 045, 050, 070, 080). When more than five signs of human or stock wastes are documented within a Trailside Camp or along a specific Type B trail, backcountry patrols and public education efforts regarding sanitation concerns will be increased.

Actions: Inventories will be conducted and long-term monitoring programs implemented to develop more measurable standards for the Sanitation factor. Pit toilets in violation of the standards (as indicated by unsuitable soil conditions and/or exceedance of coliform counts) will be removed immediately and actions taken to mitigate damage to adjacent surface waters. When all reasonable locations for pit toilets have been exhausted, an alternative waste management system may be installed, or the trailside camp may be permanently closed. Public education, interpretive media and enforcement will be utilized to gain compliance with sanitation standards.

Crosscountry Zone

NO camping is permitted within 100 feet of surface waters. NO toilet facilities will be provided in crosscountry zones. NO human wastes will be deposited within 200 ft. of surface waters. In high use areas, visitors are encouraged to deposit human wastes in a level spot, in "catholes," at least six inches deep in the organic layer of the soil. In areas receiving low use, visitors should dispose their wastes on the surface in a dry, open exposure, not likely to be visited by others. Feces should be scattered and smeared with a rock or stick to maximize exposure to the sun and air

and increase decomposition. Toilet paper waste should be packed out as trash. Visitors should disperse their wastes when traveling in groups. Visitors and staff are required to pack out all trash.

Standards: Coliform counts of adjacent surface waters will not exceed the standards as defined by the State of Washington Administrative Code (Chapters 173-201, sub-paragraphs 045, 050, 070, 080). When more than five sitings of human wastes are documented along a Type C5 trail or within a Crosscountry Zone, backcountry patrols and public education efforts regarding sanitation concerns will be increased.

Actions: Inventories will be conducted and long-term monitoring programs implemented to develop more measurable standards for the Sanitation factor. Public education, interpretive media and enforcement will be utilized to gain compliance with standards. If areas are not being adequately protected through these methods, crosscountry zones or portions of them will be closed to camping until problems can be mitigated.

Alpine Zone

NO camping is permitted within 100 feet of lakes, streams or tarns. Toilet facilities are available at Camps Muir (solar toilet), Schurman (pit toilet), and Emmons Flats (latrine) outside of the Wilderness; and at Ingraham Flats (latrine), and Camp Curtis (pit toilet), inside the Wilderness. Human waste from pit toilets is periodically removed and flown out of the Wilderness. Hikers and climbers are expected to use these facilities whenever possible. Where toilet facilities are unavailable, human wastes should be deposited in the “blue bags” provided at Ranger Stations, and packed out of the Wilderness for proper disposal. Where blue bags or toilet facilities are not available, and in areas receiving low use, visitors should select sites that are a minimum of 200 feet from lakes, streams or tarns, and dispose of their wastes on the surface in a dry, open exposure, not likely to be visited by others. Visitors and staff will remove all litter and trash, including toilet paper waste (except where toilets are provided): from the Wilderness. Trash will not be deposited in crevasses or other areas.

Standards: Coliform counts of adjacent lakes, streams or tarns will not exceed the standards as defined by the State of Washington Administrative Code (Chapters 173-201, sub-paragraphs 045, 047, 070, 080). When excessive amounts of litter (more than two handfuls within a Zone), or signs of human waste (more than two sitings within a Zone) are documented, backcountry patrols and public education efforts regarding sanitation conditions will be increased. Excessive signs of human waste (more than five sitings within a Zone) may result in limiting use of the Zone.

Actions: Inventories will be conducted and long-term monitoring programs implemented to develop more measurable standards for the Sanitation factor. Public education, interpretive media and enforcement will be utilized to gain compliance with standards. Visitors will be strongly encouraged to use the “blue bag” system of waste disposal. If voluntary compliance is not effective in achieving sanitation standards, the “blue bag” system may become mandatory and/or areas may be closed until problems can be mitigated.

No Camping Zone

Standards and actions for the No Camping Zone are the same as for the Trail Zone except that NO camping is permitted.

Factor: **LANDSCAPE CONDITIONS**

Indicators

Amount of denuded ground vegetation as a result of camping activities, vegetative species composition, size and distance between campsites, fire scars, trees mutilated or stripped of limbs, litter, cut vegetation, ground disturbance around tents (e.g., trenching), rock walls around sites, and presence of social trails, presence of exotic plants, presence of miscellaneous items such as tree stumps, abandoned telephone lines, insulators, aircraft wreckage, trail construction materials and other items.

Current Conditions

Campfires may damage vegetation, modify the soil, leave scars, and the consumption of decaying vegetation in man-made fires disrupts the natural litter layer of the forest floor. Fires are prohibited in all areas of the Wilderness as of June 15, 1989.

Trails are discussed under Trail Conditions.

Camping in the Trail Zone is permitted only at designated camps when snow depth is two feet or less. See Appendix B for a complete list of designated trailside camps. Trailside camps have one or more campsites, composed of a marked site stake, tent or sleeping area, access trail and a community toilet. Individual sites within these camps are limited to no more than five people per party, except for the designated group sites, which can accommodate 12 persons. Stock parties are permitted at specified trailside camps, but are limited to a total of 12 persons or stock in combination on the Pacific Crest Trail and a maximum of five stock on other specified trails (see Appendix E). When snow depth exceeds two feet camping is permitted anywhere at least 100 ft. from surface waters and 200 ft. from roads @lowed or unplowed).

No designated campsites exist in Crosscountry Zones and travelers and campers are expected to use the Wilderness without signing and well-developed travel routes. Visitors are required to use minimum impact techniques in these zones. Group size is limited to five persons when snow depth is two feet or less and 12 persons when snow depth exceeds two feet.

In Alpine Zones of the Wilderness, campers are encouraged to camp on permanent snow or ice; use only bareground areas that have previously been used as campsites(unless closed by park management); or camp in the designated campgrounds at Camp Curtis. Camping on vegetated areas is not permitted. No new sites are permitted to be constructed, and enhancement of existing sites with additional construction such as rock walls or windbreaks is not permitted. Group size is limited to 12 persons when camping on snow and ice and five persons when camping on bareground.

Miscellaneous items such as tree stumps, abandoned telephone lines, insulators, aircraft wreckage, trail construction materials and other items exist throughout the Wilderness. Park personnel remove such materials as time and funding permit.

Several impacts resulting from human use occur throughout the Wilderness. Denuded ground vegetation from camping or trampling, expanding trailside campsites, campfire scars, mutilated trees, and litter and rock walls built for windbreaks are being inventoried and impacts mitigated as time, staff and funding permit.

Revegetation and soil stabilization plans are prepared when necessary and approved by the Superintendent.

Wilderness areas are revegetated only with native species of similar genotypes. Seeds and plants are collected as close as possible to the area being revegetated; avoiding removal of vegetation from the immediately impacted site. Collections are made in less sensitive areas and propagated or grown in the park greenhouse or through contract with the Soil Conservation Service.

Several species of exotic plants have been identified as occurring in the Wilderness. A limited control program using biological and mechanical methods has been implemented for eight major species (flat pea, Scotch-broom, foxglove, tansy ragwort, common mullein, Klamath weed, bull thistle and Canada thistle). Management of exotic vegetation is addressed in more detail in the park's Resource Management Plan.

Current Monitoring

Landscape conditions are rated based on sensitivity of soils, geology, vegetation and aquatic resources and aesthetic conditions. Campsite inventories are performed using the following criteria: bareground area and vegetal relationships, area developments (e.g., fire scars/rings, garbage, human waste), mutilations, access trails and visual obtrusiveness. Type C and social trail conditions are inventoried for linear distance, width, depth, slope, gullying,

associated drainage disruption and number and condition of multiple treads. Monitoring protocols for trailside camps, crosscountry and alpine zones are available as separate documents.

Campsite impacts in all zones are monitored by measuring bare ground areas and documenting other recreational impacts. Inventories of Trailside Campsites have been completed for all but 12 Camps. Crosscountry Zone inventories have been completed for only the Van Trump, Southern Spray Park, Deadwood Lakes and Pyramid Peak Crosscountry Zones. Inventories have been completed for eleven Alpine Zones.

Park personnel monitor presence of exotic plants in the Wilderness through documentation on backcountry cards and in the data management system established for exotic species.

Impacts to vegetation are monitored through vegetation transects and vegetation plots. Permanent vegetation plots have been established by Edwards (1985), and monitored by Rochefort and others in 1986 and 1987 for detecting long-term vegetation changes occurring in alpine areas.

Criteria for assessing damage to plant communities in Alpine Zones will include monitoring of visual condition classes of plant communities and monitoring of biological diversity (species and genetic).

Research into passive restoration (site closure with minimal soil enhancement or seeding) will be conducted on damaged sites in Muir Corridor. Research on genetic diversity of heather communities is currently on-going with the goal of providing improved guidelines for limits of acceptable change in Wilderness.

Additional studies are needed to assess the effects of recreational use and management activities on the long-term effects on plant communities including genetic integrity.

Current Policy

Park policy is to perpetuate or restore the Mount Rainier Wilderness as a naturally operating ecosystem with primeval character and influence, and without permanent improvements except for the minimum number of designated Camps and administrative facilities essential for protecting Wilderness resources. Park visitors must accept wilderness largely on its own terms, without modern facilities provided for their comfort or convenience. Users must also accept certain risks, including natural hazards that are inherent in the various elements and conditions that comprise a wilderness experience and primitive methods of travel. The NPS will not eliminate or unreasonably control risks that are normally associated with wilderness, but it will strive to provide users with information on known possible risks as well as general information concerning recommended precautions, minimum-impact use ethics, and applicable restrictions and regulations.

Climbing aids such as drills, permanently placed hardware (bolts, ladders), or any methods that physically alter rock faces (chalk, chiseling, breaking loose rocks, removal of lichen or plants from rock faces, etc.), are not permitted. Most of these restrictions are covered under 36 CFR Parts 1 and 2. Climbers are permitted to temporarily place plastic or bamboo “wands” along snow-covered routes in alpine zones to ensure a safe return trip, and portable ladders to cross crevasses; however: wands and ladders must be removed immediately upon the return trip down the mountain.

Management actions will be directed toward providing opportunities for primitive and unconfined types of recreation by park visitors, but appropriate restrictions may be imposed on any authorized activity in the interest of preserving wilderness character and resources.

Trail Zone

NO camping is permitted outside of designated sites; no trenching is permitted. Where possible, sites are constructed at least 25 feet from the next closest site and natural screening between sites is used. NO campsites will be located less than 100 feet from surface waters. Campsites will be located near the primary trail through the area, but screened from the trail, where possible. Bare ground impacts are concentrated onto the Type C trails leading to and within the campground, on the tent site and on Type C trails leading to water supplies and toilets. NO social trails will be permitted. All other areas surrounding and within the trailside camps are expected to remain in a near-natural condition. Tent sites may be situated directly on bare ground or upon constructed sites using perimeter logs or timbers and elevated pads covered with soil. Hazard trees will be inventoried in trailside camps and addressed in accordance with the Hazard Tree Management Plan. From June 1 through September 30 and during other times of the year when snow depth is two feet or less, camping is permitted in compliance with regulations for summer conditions pertaining to group size and designated campsites. When snow cover exceeds two feet during the period from October 1 through May 31, group size is limited to 12 persons and camping is permitted anywhere except within 100 feet of surface waters. Only materials necessary for trail work, site restoration or rehabilitation projects, or work on Trail Zone structures will be placed in the Wilderness. These materials will be placed out of sight of main travelways and where damage to vegetation and other resources is minimized. Materials will not be stock piled for more than two years from the time of transport into the Wilderness.

Standards: Bareground area for each group campsite should not exceed 150 square meters. Bareground area for each individual campsite should not exceed 100 square meters. Sites will be delineated with logs or other natural materials wherever possible, and this will define the limits of acceptable change.

Actions: Trailside Campsite inventories will be completed to measure total bare ground areas, as described above and to determine the efficacy of the standards.

When expansion of bare ground exceeds the acceptable limits of the campsite and intrudes into vegetated areas, these sites may be closed and additional use limits imposed until impacts can be mitigated. The area may be restored through site rehabilitation/revegetation or allowed to recover naturally. Sites located less than 100 feet from water will be closed and replacement sites will be constructed only if there is a management need for the additional site, and the new site can be accommodated without significant resource damage. Campgrounds in the Trail Zone may also be limited or closed if use levels exceed the capacity of the existing toilets and no suitable sites remain for placement of new toilet facilities (see Sanitation standards). Type C trails will be monitored and rehabilitated as necessary. Social trails will be inventoried and restored to natural conditions through closure, rehabilitation and/or revegetation. Tree stumps, abandoned telephone lines, insulators, aircraft wreckage: trail construction materials and other man-made items will be removed from the Wilderness unless they are determined to be essential. Restoration and rehabilitation projects for trailside camps and surrounding areas will be coordinated between the Natural Resource Planning, Maintenance and Ranger Divisions. Public education, interpretive media and enforcement will be utilized to meet standards.

Crosscountry Zones

Camping is permitted in relatively durable sites and campers are expected to avoid fragile areas, such as heather meadows. No trenching is permitted- NO camping is permitted within 100 feet of surface waters during any time of the year. Vegetation must not be intentionally damaged or disturbed. NO loss of trees or root exposure will be permitted as a result of human use. NO long-term modification of natural plant succession will be permitted as a result of human activities. All dead, standing vegetation should be left in place.

Only materials necessary for trail work, site restoration or rehabilitation projects will be placed in the Wilderness. These materials will be placed out of sight of main travelways and where damage to vegetation and other resources is minimized. Materials will not be stock piled for more than two years from the time of transport into the Wilderness.

From June 1 through September 30 and when snow depth is less than two feet, camping is permitted in compliance with summer regulations. When snow cover is two feet or more, during the period from October 1 through May 31, group size is limited to 12 persons.

Standards: Bareground areas resulting from visitor use activities will not exceed nine square meters for any one site; camp areas will not be less than 150 meters from the next closest camp area; and there should be no more than five camp areas/500 acre diameter (one mile circle).

Soil compaction should not exceed limits which will prevent natural plant establishment and growth.

Actions: Inventories for Crosscountry Zones will be completed to determine the effects of human use and to assess the efficacy of standards established for these zones. Bare ground areas within Crosscountry Zones that exceed the limits as stated above may be closed to camping or use limits imposed until actions can be taken to mitigate damage. Tree stumps, abandoned telephone lines, insulators, aircraft wreckage, trail construction materials and other man-made items will be removed from the Wilderness unless they are determined to be essential. Restoration and rehabilitation projects for crosscountry zones will be coordinated between the Natural Resource Planning and Ranger Divisions. Public education, interpretive media and enforcement will be utilized to gain visitor compliance with standards.

Alpine Zone

Protection of native plant communities and preservation of natural processes will be the highest priority in this zone. Camping will only be allowed in existing bareground campsites or on snow; NO new sites are permitted to be constructed, and no trenching is permitted. No camping is permitted on vegetated areas. Existing sites may not be enhanced with additional construction such as rock walls or windbreaks. Igloos and snow caves may be constructed, but must be collapsed after use. Group size is limited to 12 persons when camping on snow or ice and five persons when camping on bareground.

Only materials necessary for trail work or site restoration or rehabilitation projects will be placed in the Wilderness. These materials will be placed out of sight of main travelways and where damage to vegetation and other resources is minimized. Materials will not be stock piled for more than two years from the time of transport into the Wilderness.

Standards: Individual bareground campsites shall not exceed nine square meters. Camping on snow-free areas is limited to sites designated by management.

Actions: Visitor use of this zone will be carefully monitored to minimize damage to plant communities and the landscape, and to document and measure recreational use impacts. Designated campsites will be located within each zone with significant alpine vegetation after zone use limits have been assigned; all other campsites will be obliterated and/or restored. Maps indicating locations of designated campsites will be prepared for distribution to Alpine Zone campers. Areas surveyed will be assessed as to Visual Condition Class and those which are in condition classes Definite Change, Severe Change, or Habitat Destroyed will be reviewed for management actions. Management alternatives may include establishment of way trails, temporary closure to promote revegetation and repair of sites, or in extreme cases active restoration

programs.

Abandoned telephone lines, insulators, aircraft wreckage, trail construction materials and other man-made items will be removed from the Wilderness unless they are determined to be essential. Restoration and rehabilitation projects for Alpine zones will be coordinated between Natural Resources and Ranger Divisions.' Public education, interpretive media and enforcement will be utilized to gain visitor compliance with standards.

No Camping Zone

NO camping or social trails are permitted in this zone. Type C trails may be present. Only materials necessary for trail work, site restoration or rehabilitation projects, or work on Trail Zone structures will be placed in the Wilderness. These materials will be placed out of sight of main travelways and where damage to vegetation and other resources is minimized. Materials will not be stock piled for more than two years from the time of transport into the Wilderness.

Standards: Bareground areas resulting from recreational use or management activities will not exist.

Actions: Same as for Crosscountry Zones. Impacts will be documented in Crosscountry Zone inventories. Unacceptable impacts will be restored to natural conditions.

Factor: STOCK USE

Indicators

Damaged trail structures, trail erosion and damaged ground vegetation (exposed roots, trampled vegetation, grazing impacts): stock waste along trails and at campsites, presence of exotic plants from stock waste, visual sightings of stock users off trail and in restricted areas.

Current Conditions

Several studies have demonstrated that stock can cause significant damage to trails and campsites not constructed to support such use. Therefore, stock use is limited to selected trails and trailside camps in more durable soils and vegetation. Stock waste can also introduce exotic plants into the Wilderness. About 100 miles of trails and 4 trailside camps are open to stock use (see Appendix E). Use of pack stock by visitors is minimal and most use is along the Pacific Crest Trail. No overnight use of stock has been documented over the past five years; day use of stock has been documented only on three occasions since 1988.

Current Monitoring

Stock use is evaluated based on reduction in vegetation cover, grazing impacts, presence of stock wastes, exotic plants, soil compaction and trail conditions in stock use areas. Observed impacts are documented on Backcountry Impact Cards.

Current Policy

Stock use is permitted in designated trails and Camps only, where damage to natural resources is minimal. Stock trails and Camps are maintained to a stock use standard as stipulated in the park's Trail Management Handbook. Party size is limited to no more than 5 head of stock, except on the Pacific Crest Trail, where a total of 12 people and stock in combination are permitted in a single party. Administrative use of stock is constrained by office order 87-1 (see Appendix D). Use of administrative stock on trails not open to public stock use must be approved by the Superintendent. Grazing of stock is not permitted. Stock feed must be carried by the user in the form of pellet feed in order to reduce the probability of introducing exotic plants.

Trail Zone

Stock will be permitted on trails and campsites open to stock when these areas can be used with no irreparable damage, usually from August until mid-October, due to wet trail conditions. NO grazing is permitted. Stock grain pellets must be packed in by users for feed. Administrative use of stock will be constrained by office order 87-1 (see Appendix D). Administrative use of stock on trails not open to public stock use must be approved by the Superintendent.

Standards: Vegetation loss, erosion, and volume of stock waste will not exceed the design limits of the designated stock Camps and trails (see Appendix E).

Actions: Inventories of trails and Camps open to stock use may be conducted to assess impacts and to develop measurable standards for stock use in Trail Zones if stock use becomes significant. The soil erosion potential system developed for prioritizing resource restoration projects may be used to develop appropriate standards. However, when stock use results in damage to trails that is excessive to routine maintenance expected with stock trails: such trails will be repaired and upgraded to a level able to sustain use as described in the Trails Management Handbook. If this is not feasible, such trails will be closed to stock use until damage can be mitigated. If stock use at trailside camps results in significant damage to resources or structures, or creates unacceptable sanitation conditions, areas will be temporarily or permanently closed to stock use, depending upon the severity of the damage. Public education, interpretive media and enforcement will be utilized to encourage proper use of stock in the Wilderness.

Crosscountry Zone

Standard: Stock use is not permitted in Crosscountry Zones.

Alpine Zone

Standard: Stock use is not permitted in Alpine Zones.

No Camping Zone

Standard: Stock is not permitted in the No Camping Zone.

Factor: **TRAIL CONDITIONS**

Indicators

Eroded gullies, expanding trail width, drainage disruptions, cutting switchbacks, damaged trail structures, safety hazards, formation of social trails.

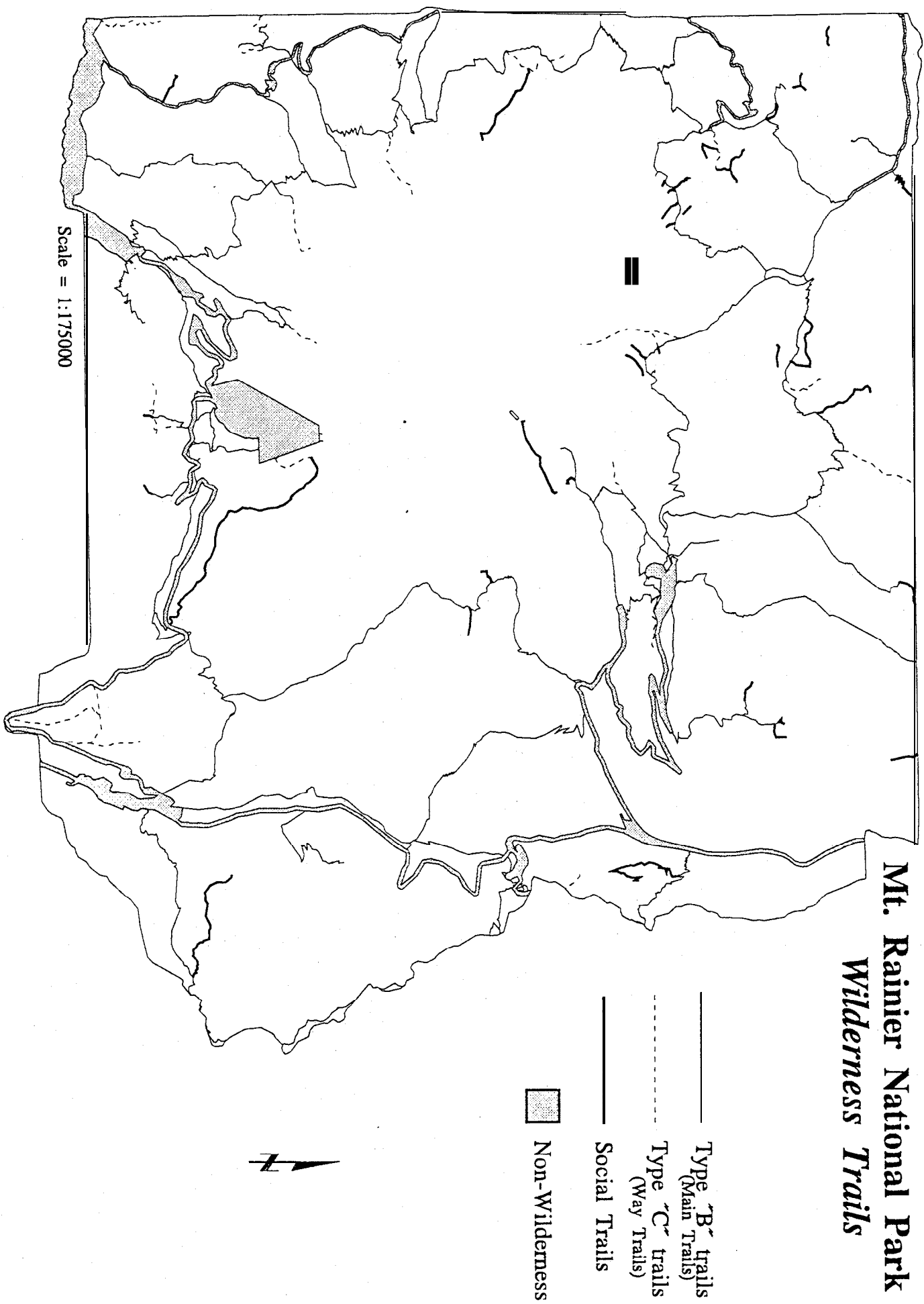
Current Conditions

(See Glossary for definition of trail types). There are approximately 262 miles of Type B trails in the Trail Zone (Fig. 13). Numerous structures are in place along these trails: 577 bridges across streams? 693 culverts under the trails, 4,411 feet of trail puncheon and numerous rock walls, water bars, drainage ditches and several hitching posts at stock Camps. In some instances, old roadbeds have been converted to trails. There are also a number of abandoned trails present in the Wilderness.

Several Type C trails exist throughout the Wilderness in all zones, but have not yet been completely inventoried. Type C trails have developed from hikers repeatedly using the same travel routes. Type C trails are maintained only to a minimum standard to protect areas from resource damage; the number of Type C trails are minimized in Crosscountry Zones which should present more of a challenge to hikers than is present in the Trail Zone. Numerous social trails exist throughout the Wilderness. Social trails may cause extensive damage to soils and vegetation, affect visual aesthetics, and the degree of solitude perceived by visitors. Type B and C trails are maintained in accordance with the park's approved Trails Management Handbook. Social trails are inventoried and restored to natural conditions as time and funding permit.

A Memorandum of Understanding (MOU), has been developed between the Park and the Mount Tahoma Scenic Ski Trail Association to facilitate operation of a public crosscountry ski trail system located on lands in eastern Pierce and Lewis Counties. The trail system crosses private, U.S. Forest Service, State Department of Natural Resources, and NPS lands. Under the MOU the Park will permit the temporary wandering of snow-covered routes along the West Side Road and the trail from Klapatche Point to Golden Lakes.

FIGURE 13



A temporary hut may also be placed along the West Side Road (on non-wilderness lands), during the winter months, when sufficient snow cover exists.

Current Monitoring

Trail conditions in Crosscountry and Alpine Zones are rated according to an assessment of resource damage as established by physical measurements of length, width, depth, slope, gullying and etc., (see Landscape Conditions factor). Trails in the Trail Zone and Crosscountry Zones are rated according to the Trails Management Handbook for Mount Rainier National Park.

Type B trails are monitored by the park Trail Crew to identify maintenance needs. Type C and social trails are inventoried by Natural Resource Planning and Ranger Divisions; impacts are quantified through low elevation aerial photography and ground surveys; recommendations for mitigating damage are suggested; and site restoration plans prepared when necessary.

Trail use is monitored through Ranger trail patrol logs, mechanical trail counters, and through the Backcountry Permit System (See previous information under Description and Use of the Wilderness).

Current Policy

Park policy is to perpetuate or restore the Mount Rainier Wilderness as a naturally operating ecosystem with primeval character and influence, without permanent improvements except for a minimum number of trails that existed previous to the Wilderness designation. Park visitors must accept wilderness largely on its own terms, without modern facilities provided for their comfort or convenience. Users must also accept certain risks, including natural hazards that are inherent in the various elements and conditions that comprise a wilderness experience and primitive methods of travel. The NPS will not eliminate or unreasonably control risks that are normally associated with wilderness. but it will strive to provide users with information on known possible risks as well as general information concerning recommended precautions, minimum-impact use ethics, and applicable restrictions and regulations.

Management actions will be directed toward providing opportunities for primitive and unconfined types of recreation by park visitors, but appropriate restrictions may be imposed on any authorized activity in the interest of preserving wilderness character and resources. Public education of Wilderness users will be focused on minimum impact techniques. Trails are maintained in accordance with the park Trails Management Handbook.

Trail Zone

Wilderness trails will offer visitors a primitive experience and will be unpaved and modest in character. NO Type A trails will be present within the Wilderness Trail Zone. Type B trails in the Trail Zone are identified on the park trails system inventory. Some Type C trails may be present in Trailside Camps. NO social trails will be accepted in Trail Zones.

Bridges may be provided only where they are essential for resource protection or where significant safety hazards would otherwise exist during the normal use period. New bridges will not be constructed over minor streams that may be crossed without hazard. Existing bridges over such streams will be removed when they would otherwise be due for major rehabilitation or replacement.

New trail construction may be considered only when in the interest of resource protection and enhancement of Wilderness values. Trails will not be located in areas of critical or sensitive plant or animal habitat, or where potentially serious impacts to plants or animals may occur.

Trails may be located to overlook streams and lakes but not be directly adjacent to the water's edge. Meander trails should provide water access points for visitors, as well as for pack and saddle stock, along trails designated for their use.

Clearing requirements may vary with the intended trail use. Shrubs and trees should be cut flush with the ground, and exposed stumps covered with soil. Tree limbs should be cut flush to the tree and scattered away from the trail. Tree scars will be obscured from view, where possible. Every effort will be made to restore the surrounding disturbed area to natural conditions.

NPS policies permits the Superintendent to create or use new borrow pits or other sources or continue to use existing sources inside the park, only if it is determined, based on a written analysis, that economic factors make it totally impractical to import sand or gravel and if acceptable sources are identified in the park resource management plan; and only after compliance with the National Environmental Policy Act, the National Historic Preservation Act, the Endangered Species Act, and the Clean Water Act; and after obtaining all applicable federal, state, and local permits. Various talus slopes and soil deposits adjacent to trails may be used for trail construction only where it has been determined that these areas are devoid of significant cultural and natural resources, as identified through appropriate studies, and areas not viewed or used by visitors. Such areas will be restored to be compatible with the surrounding environment. Use or creation of borrow pits in Wilderness is subject to the MORA Project Clearance Review procedure in addition to NEPA and cultural resource requirements.

Whenever possible, trail construction materials will be hauled in. Material will be stored only when necessary, out of site of main travelways, and where damage to vegetation is minimal. Materials will not be stockpiled for more than two years. All construction debris/ materials will be removed when maintenance is complete. Use of appropriate natural materials, such as wood, will be encouraged in the Wilderness. Use of manmade materials such as fiberglass or metal culverts, is acceptable only where it will not remain visible. Where gravel is used, it will be incorporated into the trail and not predominantly on the surface. When there are no alternatives to the use of native, on-site materials, the following priorities will be used for trail maintenance and construction, only after completion and approval of appropriate NEPA and cultural resource compliance mandates:

Rock: Use of more than one cubic yard of rock must be approved by the Superintendent. Any rock removed from subalpine or alpine areas must be approved by the Superintendent. Sources of rock in amounts up to one cubic yard from the same general location may be used in the following priorities:

1. Rock removed from clearing and cleaning tread, travelways and ditches and from restoring designated backslopes.
2. Talus slope rock (fist size or larger).
3. Floodplains where the bed is approximately 50 % or more rock covered and where removal will not disturb vegetation or cause or accelerate erosion and result in increased sedimentation into surface waters.
4. Scree slopes (rock smaller than fist size).
5. Rocks on the forest floor.

Soil: No soil will be removed from vegetated areas. Sources of soil will be used in the following priorities, up to one cubic yard, unless otherwise approved by the Superintendent. Top soil and duff will not be removed since these serve as seed banks. Underlying mineral soil may be removed but top soil and duff must be replaced.

1. Sluffs on trail, silt runoff from drainage facilities, excavated soil from cleaning or construction facilities, soil from restoring backslopes or berms.
2. Sand or silt from floodplains where vegetation is not disturbed and where removal will not result in sedimentation of surface waters; and not from within 200 ft. of inlets or outlets.

No material will be removed from lakes.

3. Soil may be removed from the lower 2/3 of root balls of fallen trees. The upper 1/3 of the rootball and soil should be left in tact to provide a seedbed for plants. Soil should not be removed from the hole created by the overturned tree since this habitat is an important component of the forest ecosystem.

Wood: Onsite sources of wood will be used in the following priorities:

1. Trees cut when clearing travelway or left from unneeded structures.
2. Down trees where they are not critical to wildlife habitat.
3. Standing trees no more than 6" dbh. These will be cut flush to the ground.
4. Larger trees may be utilized only with approval of the Superintendent.

During winter conditions trails will not generally be marked and visitors must navigate on their own and be aware of common hazards such as avalanches, weather, and difficulty of travelways.

Standards: Type B trail tread may be limited to the space required to form a single-file trail except on grades where the maximum is justified; maximum trail tread width is 24 inches. The overall grade is less than 15%; for distances less than 150 ft., grade should not exceed 18% **Trail maintenance** and construction is oriented toward encouraging users to stay on the trail (e.g., proper drainage, slopes, etc.). Travelway clearing will not exceed ~~four~~ ft width and 8 ft. height for pedestrian trails; and 8 ft width and 10 ft. height for trails designated for stock use. All Type B trails in Wilderness are maintained at Levels 3 and 4.¹⁶

Type C trails are unsigned and generally unimproved. These trails are normally used by experienced trail users, for access to crosscountry areas, for climbing routes, and administrative purposes. Bare width of **trail** will not exceed 18". Type C trails are maintained only for resource protection.

Actions: Type B trails will continue to be monitored by the park Trail Crew. Type C and social trails within the Trail Zone will be inventoried, and resource damage documented and mitigated. Trails will be maintained according to standards described for Type B and C trails in the Wilderness. Social trails and old roadbeds will be obliterated and restored to natural conditions. Use of the "minimum tool" concept will be employed when determining routine and special trail maintenance. Trail maintenance and special projects (including work within trailside camps) will be coordinated between the Maintenance, Natural Resources and Ranger Divisions, on an annual basis through an annual trails meeting. Unnecessary bridges and other trail structures will be removed after coordination with these divisions and with approval of the Superintendent. Public education, interpretive media and enforcement actions will be taken to encourage proper use of trails. Training for park employees will be conducted to educate staff in the minimum tool concept and other Wilderness management objectives.

Crosscountry Zone

NO Type A or B trails will be present in Crosscountry Zones. NO social trails will be present in these zones. Hikers are encouraged to use Type C trails to prevent damage to adjacent soils and vegetation and to prevent the formation of parallel trails.

¹⁶ Level 3: Trails are maintained for moderate use. Tread is maintained for user convenience. These trails are designed for any permitted mode of travel. Trail is maintained to the degree that its infrastructure is preserved under normal environmental conditions. Natural surface contains some roots and rocks (example of Type B3 trail is the Wonderland Trail).

Level 4 trails are maintained for semi-primitive use. Traffic is low to medium; tread is often not smooth, having a soil and rock surface. Level 4 trails are maintained for either pedestrian and or stock use. Natural surface is generally rough and uneven (examples are Kautz Creek, Bench/Snow Lake trails) .

However, Type C trails will not be signed or published on park maps. Park staff will provide information on these trails to visitors upon request and when overnight permits for Crosscountry Zones are obtained. Snow-covered traveler paths causing resource damage will be blocked.

Standards: Type C trails are unsigned and generally unimproved. These trails are normally used by experienced trail users, for access to crosscountry areas, for climbing routes, and administrative purposes. Bare width of trail will not exceed 18". Type C trails are maintained only for resource protection.

Actions: Type C and social trails within Crosscountry Zones are being inventoried. Trail conditions are being measured to quantify total bareground, length, width, depth, slope, gullying, associated drainage disruptions, and number and condition of multiple treads. Areas within Crosscountry Zones may be closed if trail damage is severe and/or if extensive site rehabilitation is needed. Site restoration plans will be developed for areas in need of extensive restoration and resource damage will be mitigated for all areas. The Trails Management Handbook will be revised and standards developed for Type C trails. Visitors will be educated on the proper use of trails in Crosscountry Zones through public education, or placement of physical barriers. Public education, interpretive media and enforcement will be utilized to encourage visitors to use minimum impact techniques in the Wilderness.

Alpine Zone

Climbers are permitted to temporarily place plastic or bamboo "wands" along snow-covered routes in alpine zones to ensure a safe return trip, and portable ladders to cross crevasses; however, wands and ladders must be removed immediately upon the return trip down the mountain.

NO Type A trails will be present in the Alpine Zone and the number of Type B and Type C trails will be minimal. Type C trails formed by repeated use through snow or bare ground are acceptable only if fragile alpine ecosystems are not being damaged. NO social trails will be accepted in the Alpine Zone. Most climbing routes are not marked however, heavily travelled snow routes may be marked by park management with wands or flagging only to protect public safety and Wilderness resources. Snow-covered traveler paths causing resource damage will be blocked.

Standards: Type C trail width will generally not exceed 24" and will be maintained only to protect resources from damage. Type C trails will be maintained in accordance with the park Trails Management Handbook.

Actions: Inventories are being conducted to document high elevation impacts and measure vegetation recovery rates as well as to assess long-term changes in native plant communities. Trails impacting fragile alpine vegetation may be closed

permanently. Research will be conducted to determine appropriate restoration strategies for areas in the Alpine Zone. Public education, interpretive media and enforcement actions will be utilized in protecting fragile alpine ecosystems.

No Camping Zone

Standards: Type B or C trails may be present in the No Camping Zone. Standards are the same as for the Trail Zone.

Actions: Actions for No Camping Zones will be the same as for the Trail Zone.

Factor: ENDANGERED, THREATENED AND RARE SPECIES

Indicators

Population declines or species extirpation likely as a result of human use.

Current Conditions

The objectives of managing endangered, threatened and rare species are to preserve and protect designated species of animals or plants and their critical habitat. This includes species that are listed by federal or state authorities, or those considered to be unique and endemic to Mount Rainier National Park. Species that are of concern are listed in the park's Resource Management Plan.

The Northern Spotted Owl and some migrant raptors are listed as federally endangered and threatened species known to permanently inhabit the park. However, scant information is available on the presence of invertebrates, fish, amphibians and reptiles. The Bull Trout, Cascade and Red-legged frogs are listed as "candidate species" on the federal list. Bald eagles and peregrine falcons have been sighted in the park. Little information exists on the gray wolf, several species of salamanders and frogs, goshawk, wolverine, heather vole, water shrew, oreas angle-winged butterfly, great gray owl, northern pocket gopher and Cascade vole. Several animals which are listed on the state of Washington List of Species of Special Interest do occur in the Wilderness. These include fisher, marten, bobcat and the Northern Spotted Owl.

Amphibian populations are declining world-wide. Several species of amphibians occur within the Wilderness. Past fish stocking efforts may have altered amphibian populations in and near high mountain lakes and ponds.

No federally listed plant species occur within the Wilderness, but the Mount Rainier paintbrush (*Castilleja cryptantha*) remains a candidate species. Approximately 41 species of plants listed on the Washington National Heritage Species of Special Interest occur within the Wilderness.

Endangered, threatened and rare species are evaluated according to recommendations made by the Washington Natural Heritage Program and the U. S. Fish and Wildlife Service.

Current Monitoring

Rare plant populations are checked periodically for condition and growth, and new areas surveyed annually. All sitings of rare plant species are recorded and species information compiled and maintained in a computerized data management system. Spotted Owl populations are monitored periodically. Amphibian surveys were initiated in 1991 to document species presence park-wide and to determine the effects of fish stocking on populations in high mountain lakes. A qualitative survey of bull trout habitat was conducted throughout the park in 1993. No other endangered, threatened, or rare animal species are being monitored.

All Zones

Standard: Visitor use will not be allowed to compromise protection of endangered, **threatened and** rare species. There will be no loss or threats to rare plants or animals or their habitat as a result of visitor use.

Actions: Assessments of habitat needs and identification of critical habitat will be conducted. Plans for the species recovery or preservation will then be developed. Areas may be closed to public use if these species are being threatened by human presence or recreational activities.

Factor: **CAMPFIRES**

Indicators.

Rock fire rings, ashes, partially burned materials, branches, and other material, trees stripped of limbs, scorched ground, sterilized soil.

Current Conditions

Wood fires may damage vegetation, modify the soil and leave scars. The collection of firewood disrupts natural cycles of decay on the forest floor by the removal of essential organic material. Fires have been prohibited in all but a few select Trailside Camps. Prior to 1989 in lower forest Crosscountry Zones open wood fires were permitted in “fire pans” or other self-containing devices, carried by the user. Fire pans are metal containers such as a cake pan used to limit impacts. The pans are supported on rocks to prevent ignition of the forest duff. However park staff have found limited evidence that fire pans have been utilized and numerous impacts from campfires are evident throughout the Wilderness.

Consequently, wood and charcoal fires were prohibited in all areas of the Wilderness as of June 15, 1989. Gas, propane, butane or similar fueled stoves are permitted.

Wood or charcoal burning stoves of any kind, are not permitted (including “twig” burning stoves).

Current Monitoring

Park personnel document presence of fire rings, fire scars etc., through impact monitoring programs and on backcountry cards.

All Zones

NO campfires are permitted in the Wilderness.. Gas, propane, butane, or similar fueled stoves are permitted. “Twig” or other wood or charcoal fueled stoves are not permitted.

Standard: When more than two recent campfire rings or scars are documented within the Trail Zone; or more than one within Crosscountry, Alpine or No Camping Zone, public education and backcountry patrols may be increased for that area.

Actions: Illegal campfires will be documented through backcountry cards and impact monitoring programs. Campfire rings will be removed and affected areas restored to natural conditions. Educational and interpretive media and when necessary appropriate law enforcement actions will be used to gain compliance.

Factor: AIR QUALITY

Indicators

Violations of the criteria pollutants noted in the Washington State Implementation Plan, for Class One Areas; evidence of air pollutant effects on soils, vegetation, animals and aquatic systems: smoke from adjacent land use, high amounts of airborne dust on unpaved roads.

The NPS air quality program involves an extensive network of monitoring for pollution, visibility conditions, and biological effects in NPS units. At Mount Rainier the monitoring program includes use of cameras for measuring visibility, fine particulate monitors for identifying the causes and sources of visibility impairment, and an ozone monitor for establishing baseline conditions, assisting the ozone effects research, and evaluating new pollution sources.

Current Conditions

Air pollution can damage and destroy resources and values that units of the National Park System have been created to protect and preserve. Mount Rainier is not isolated from the by-products of industrialization as manmade air pollutants are transported long distances and

have been detected through air quality monitoring programs.

The park is located approximately 50 miles northeast, and upwind of the Centralia Power Plant which emits 55,878 tons/year of sulfur and is currently the largest single point source for sulfur emissions in Washington state. In addition, large amounts of fine particulates are emitted from slash burns adjacent to the park on private and government owned lands. Park visibility is substantially affected by sulfur emissions and by organic carbon from slash burning. Specific effects on the parks biological resources remain unknown; however, a study of biological effects of ozone was initiated in 1993 under a cooperative agreement with the University of Washington.

Wood stoves and campfire smoke can also cause air pollutants. Wood stoves produced in the late 1970's released between 40 to 60 grams of particulate matter an hour. There are presently about 36 wood stoves in park buildings. Campfire smoke during the summer months can significantly degrade local air quality, especially near the Ohanapecoh and Cougar Rock campgrounds.

Current Monitoring

Air quality/visibility instruments have included:

Paradise automated visibility camera: operated by the Paradise interpreters through the entire year. Data has been submitted to Air Resource Specialists, Boulder Colorado for analysis.

Paradise nephelometer (for visibility monitoring): operated by the Washington Department of Ecology. This instrument is operated during the summer season only.

Automated visibility cameras: visibility cameras have been placed at Fremont and Tolmie Peak Fire Lookouts over the past several years. Photographs have been submitted to air quality specialists for analysis.

Ozone monitors: An ozone monitor at Carbon River was operated by the NPS in 1991, with assistance from the State Department of Ecology. Data suggest violations of ozone levels during the summer months.

An ozone monitor was installed at Tahoma Woods in 1993.

PREVENT study: This major regional visibility study was implemented by the NPS Air Quality Group to investigate summertime haze in Washington state National Parks by establishing the contribution of various particulate species to visibility impairment and to attribute a fraction of each species to specific emission sources. Mount Rainier was one of the principal sites. Special instruments were installed at Tahoma Woods, Paradise, Ohanapecoh, and Carbon River. Additional photographic documentation

was placed at Fremont Lookout, and Paradise, to enhance the existing cameras. Data was collected from May through September, 1990. Initial perusal of data reveals that due to relative humidity of nearly 100% every night, the highest extinction readings occurred during early morning and late evening. Additionally, the visual range throughout the region is routinely less than 50km without the presence of fog or rain, implying that the area is quite heavily loaded with atmospheric particulates. However, data are still being analyzed and the final report is scheduled for 1994.

Tahoma Woods IMPROVE site: Mount Rainier is one of 14 NPS Class I areas that are part of the Interagency Monitoring of Protected Visual Environments (IMPROVE) program. The IMPROVE program was established to meet regulatory requirements and is managed by a committee composed of the U.S. EPA, NPS, and other federal land managers. The IMPROVE site operations are continuing. Filters are sent to the Air Quality Group, UC Davis for analysis. The Air Quality Group also provided semi-annual calibration and servicing of the instruments. A nephelometer was installed at Tahoma Woods as part of the PREVENT study, and will continue to be operated by park staff.

Effects of air pollutants on surface waters is being evaluated as stated under the Aquatic Resources factor. Acidic cloudwater deposition is a possible stressor in some forest regions. Foliar leaching has been associated with exposure to acidic clouds that are downwind from anthropogenic sources. Low pH fog has caused cation leaching from pine needles (Basabe, et al., 1988). Fog collected during the summer of 1988 at Paradise resulted in some of the lowest pH levels recorded in Washington state, down to pH 3.2. Results from assessment of cloudwater chemical composition at Paradise showed pH values ranging from 3.2 to 4.9. This is up to 40 times the hydrogen ion concentration of rainwater collected at the same location. Cloudwater monitoring is being conducted to further confirm these results.

Current Policy

The Clean Air Act, as amended in 1977, mandates protection of air resources for national parks, over 6000 acres, and national wilderness areas over 5000 acres that were in existence on August 7, 1977. The Act designates these as "Class I" areas and established stringent requirements for protecting air quality related values. Air quality related values are defined as "visibility and those scenic, cultural, biological, and recreation resources of an area that are affected by air quality." Federal land managers are directly responsible for protecting air quality related values in class I areas from adverse impacts. Determination of an adverse impact on these values requires identification of a current or potential impact and consideration of how it might affect park resources and visitor experiences. Research, inventories and monitoring programs are needed to understand the cause and effects of air pollution on Wilderness terrestrial and aquatic ecosystems.

All Zones

Standards: Air quality should meet criteria as directed by the Federal Clean Air Act and state standards for criteria pollutants for Class I areas. Air quality is not degraded as a result of recreational use. Air quality, especially visibility, may be temporarily degraded as a result of prescribed natural fire occurrences.

Actions: Park staff will monitor air quality for compliance with NPS policies and Federal and State Clean Air Act. Air quality related values will be identified and a Regional Air Quality Management Plan developed in cooperation with the U.S. Forest Service. Once identified, air quality related values will be monitored and evaluated. The effects of airborne pollutants on sensitive ecosystems will be monitored by measuring gases and aerosols (ozone, nitrogen dioxide, sulfate, inorganic nitrate, total ammonia, sulfur dioxide); chemistry and volumes of wet deposition; meteorological measurements (temperature, wind speed and direction, relative humidity, pressure, precipitation amounts); and visibility. Research on biological effects of air pollutants will be conducted when funding is available.

Management efforts will be taken to correct air pollutant problems through coordination with other agencies such as the. Smoke resulting from prescribed natural fires will be monitored to prevent conflicts with local, state and federal air quality regulations (see park Fire Management Plan (1988)).

Factor: **OPPORTUNITY FOR SOLITUDE AND EXPERIENCE**

Indicators

Opportunities for solitude can be assessed by many variables: the number of, trails and administrative signs and facilities, trail conditions; the amount of use received in each area and indicated by backcountry use and climbing statistics, day use trail counter statistics, and staff logs of number of visitor contacts along trails and at campsites; amount of sight and sound intrusions such as use of mechanized equipment, adjacent land use practices, and private, commercial and military aircraft overflights, air quality/visibility, litter, human wastes; physical distance between campsites; encounters with other visitors and staff and party size; and visitors perceptions.

Experience opportunities can be assessed by variables such as: relative isolation, evidence of human activities, frequency of encounters with other users, difficulty of travel, degree of challenge and risk; number of restrictions on use, number of uniformed NPS personnel encountered, and the amount of regulatory signs posted beyond the trailhead.

Current Conditions

Adjacent forestry practices, especially on the west side of the park, may severely affect scenic vistas in the Wilderness. Forestry practices such as logging and slash burning can visually and audibly affect visitors Wilderness experience. Frequent private, commercial and military aircraft overflights can often disrupt visitors solitude in the Wilderness.

Administrative use of helicopters for removal of human waste from Alpine Wilderness and backcountry areas, and transport of supplies and materials for trail work and restoration projects is to be restricted to time periods before July 1 and after Labor Day, during weekdays. (See Appendix D). However, flights often occur outside of these times. Administrative air flights may be conducted in August and September for monitoring elk populations, or for low level aerial photography for resource monitoring projects.

Limited information exists specifically indicating the various levels of opportunities for experiencing solitude in the Mount Rainier Wilderness. However, observations made by park personnel and analyses of several years of Backcountry Permit System data, trail encounters, and mechanical trail counter data, indicate that a range of opportunities for solitude exist depending upon route, destination, time of year and time of the week.

Experience opportunities within each management zone are rated based on the relative isolation, evidence of past human activities, frequency of encounters with other visitors, the opportunity for challenge, risk, and utilization of primitive skills. A range of opportunities of experience exist from the easily accessed Trail Zone to the more difficult climbs in the Alpine Zone.

Areas in the Trail Zone offer easy access and use of the Wilderness by large numbers of visitors. Use in this zone is concentrated along well-maintained trails and in developed trailside camps.

Crosscountry zones provide more of an opportunity for challenge. Although some Type C trails exist, these primitive travel ways are not as developed as trails in the Trail Zone. Crosscountry travel requires visitors to use the Wilderness without the use of signs, developments and other amenities found in the Trail Zone. Limits on overnight camping have been established for some Crosscountry Zones with the intention of dispersing use, and minimizing damage to fragile ecosystems.

Alpine zones offer a high degree of challenge in relation to access and difficulty of travel ways which range from narrow way trails to very technical climbing routes that surround the mountain. However, visitors' experience in these zones may be affected by the increased frequency of encounters, and signs of human use (especially human waste), that occur along the more popular routes.

Current Monitoring

Amount of use is monitored through the Backcountry Permit System, Climbing Cards, Trail Counters, and patrol logs of visitor encounters along trails and at campsites.

Sight and sound intrusions from adjacent land use practices, aircraft overflights, and recreational and management activities are documented on Backcountry Cards and Case Incident forms.

Limited surveys have been conducted in four Wilderness areas to gather information on visitor demographics and trip objectives (see previous section on Description and Use of the Wilderness and Appendix I).

A brief visitor survey was conducted in summer, 1992 by the NPS Washington Office to determine the effects of aircraft overflights on visitors in Mount Rainier and other parks throughout the system. A survey questionnaire was administered near park entrance stations. Due to survey methods, application to Wilderness may be limited. Results have not yet been published.

A literature search was conducted by the Natural Resources division in 1992 to assist in defining standards and indicators for solitude experiences within the Mount Rainier Wilderness (Walkinshaw 1992).

A study initiated in 1992, and conducted under a cooperative agreement with the University of Washington will provide information on visitor demographics, trip characteristics, and visitor perceptions of solitude and trip quality using Spray Park as the study area. This

project is a case study in which a Limits of Acceptable Change (LAC) model will be applied to the Spray Park area. In the process, extensive analysis will be conducted on the use of social psychological measures of perceived Wilderness conditions as desired conditions and indicators of desired conditions. In addition, social indicators will be compared with biological conditions and indicators. Results from the study will help in applying the LAC model to other park and Wilderness areas.

All Zones

Additional information is needed to establish standards for determining the levels of opportunities available for experiencing solitude in the various management zones of Mount Rainier National Park. A range of opportunities will remain available to visitors depending upon route, time of year, and time of the week. The amount of sight and sound intrusions on Wilderness solitude is currently unknown.

Actions: Research will be conducted to develop techniques for defining indicators and standards of solitude and to monitor the opportunity for solitude available in the Wilderness. Monitoring of aircraft overflights and influences of adjacent land use practices will be conducted by improving current reporting and documentation procedures. Communications with adjacent land owners will be initiated to gain their cooperation in minimizing impacts on the Wilderness.

Opportunity for Solitude Based on Campsite Locations, Party Size, and Degree of Challenge.

Trail Zone

The opportunity for experiencing solitude in the Trail Zone based on distance between campsites is low; low when based on party size; and highly variable, when based on trail encounters with other visitors depending upon the trail, time of year, and day of the week (Appendix G and H).

The Trail Zone provides low to moderate opportunities for exploring and experiencing isolation from the sights and sounds of humans; from experiencing independence; tranquility; and self-reliance in a natural environment that offers a moderate degree of challenge and risk.

Standards: Campsites may be spaced anywhere from five feet to 25 feet distance from each other. However, where possible, campsites will be spaced a minimum of 25 feet from the next closest site. Campsites may be placed anywhere from a few feet to several hundred yards from Type B or C trails. Group size is limited to 12 for group campsites and five for individual campsites. Each Trailside Camp will have a limited number of campsites, ranging from one to seven. During October 1 through May 31, when snow depth exceeds two feet, group size

is limited to 12 persons.

Actions: Additional monitoring will be conducted to determine the frequency of encounters with other visitors along the more popular travelways. Day use will also be monitored to determine associated impacts. Visitors will be advised of the conditions described above so that they may select the appropriate level of solitude and challenge.

Crosscountry Zone

The opportunity for experiencing solitude based on distance between campsites and party size is higher in Cross-country Zones than in Trail Zones but varies depending upon location, time of year, and time of the week.

The Crosscountry Zone provides a higher opportunity for isolation and solitude, more free from the evidence of past human activities and with less frequent encounters with other users. The user has many outstanding opportunities to travel crosscountry utilizing a maximum degree of primitive skills, often in an environment that offers a high degree of challenge and risk.

Standard: Campsites will be no less than 150 meters from the next closest campsite; and there should be no more than five campsites in a 1500 acre diameter area. Campsites must be located a minimum of one quarter mile from any Type A or B trail, or from any road. Party size is limited to five during the more heavily visited seasons from June 1 through September 30 and when snow cover is less than two feet. From October 1 through May 31, when snow cover exceeds two feet, party size is limited to 12.

Actions: Same as for the Trail Zone. Trail and campsite inventories will be conducted (see Landscape Conditions factor); data may be used to determine the amount of evidence of past human activities that may affect solitude.

Alpine Zone

The opportunity for experiencing solitude based on distance between campsites would vary for Alpine Zones. Areas where it is desirable to concentrate use (e.g., Camp 'Curtis) may provide low solitude while other less visited Alpine Zones may provide a very high degree of solitude. Distance between campsites will be a consideration when designating specific campsites within Alpine Zones with significant vegetation (see Landscape Conditions section).

The opportunity for experiencing solitude based on party size would vary but would likely be lower in the more popular areas. Party size may be as high as 12 for public use; and up to 36 for the commercial guide service traveling along the Muir corridor

(guide service groups of this size must camp only at Camp Muir).

In general, the Alpine Zone provides the highest degree of challenge and some of the most outstanding opportunities for experiencing isolation and solitude, relatively free from the evidence of past human activities and with less frequent encounters with other users (except on the more popular alpine routes to the summit).

Standards: To be developed **when** sufficient information becomes available.

Actions: Same as for Crosscountry Zone. Standards for distance between campsites will be established when specific campsites are designated.

No Camping Zone

No camping is permitted in this zone. There are no limits on party size for hikers using these areas. Experience opportunity varies from high in many alpine areas, to low to moderate in the Reflection, Louise and Clover Lake zones, located close to roads and trailheads.

Standards: No standards have been developed at this time.

Actions: Same as for the other zones.

IX. STANDARDS FOR ADMINISTRATIVE USE AND MANAGEMENT OF THE WILDERNESS

Structures in the Wilderness

Structures exist only in the Trail Zone areas of the Wilderness (See Fig. 14). In accordance with Service mandates, structures in Wilderness will be limited to the types and minimum number essential to meet the minimum requirements for the administration of the area. A decision to construct or maintain a structure will be based primarily on whether such a facility is required to preserve Wilderness character or values or is essential to ensure public safety, not on considerations of administrative convenience, economy of effort, or convenience to the public. Compliance with Section 106 of the Historic Preservation Act will be completed before structures are altered or removed. NEPA compliance will be completed before any new construction occurs.

Public Shelters

There are currently seven (7) public shelters in the park's Wilderness: three at Mowich River, one each at Lake George, Summerland, Indian Bar and Nickel Creek. The Indian Bar, North Mowich and Summerland trail shelters are listed on the National Register of Historic Places and will be maintained according to appropriate mandates. No alterations will be made without completion of the Section 106, Assessment of Effect on Cultural Resources process, and approval of the Regional Director and State Historic Preservation Officer. The North Mowich shelter deteriorated to the point where it became a threat to public safety. Consequently, it was removed in 1993, after cultural compliance mandates were met.

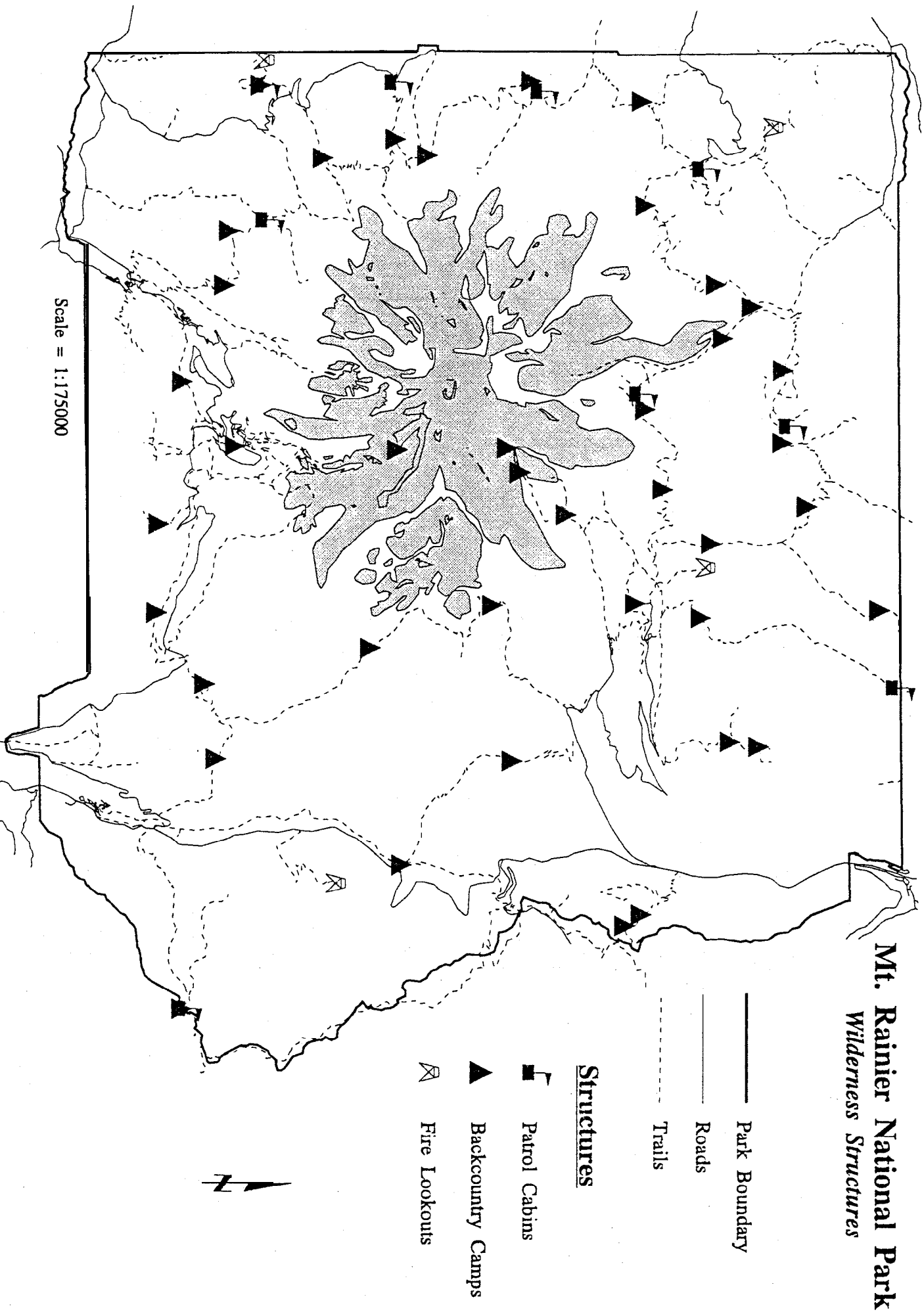
Public shelters are not necessary for the management and preservation of the Wilderness and, consistent with the Wilderness Act in minimizing human intrusions, non-historic shelters will gradually be removed. In the interim shelters will be maintained in such a manner that will minimize their impacts on the Wilderness.

When a non-historic shelter's condition is poor as the result of deterioration, the shelter will be removed after completion of all required documentation and with approval of the Superintendent and concurrence of the Regional Office.

Cabins, Fire Lookouts, and Radio Repeaters

There are nine (9) patrol cabins located in the Trail Zone of the Wilderness: St. Andrews, Mowich Lake, Golden Lakes, Indian Henrys, Mystic Lake, Lake James, Lake George, Huckleberry Creek and Three Lakes; and four (4) fire lookouts: Gobblers Knob, Shriner Peak, Tolmie Peak and Mt. Fremont. Some of these buildings are listed on the National Register of Historic Places: all four fire lookouts, cabins at Huckleberry Creek, Indian Henrys, Mowich Lake, Golden Lake (Sunset Park), St. Andrews and Three Lakes.

Mt. Rainier National Park
Wilderness Structures



Historic structures will be maintained according to appropriate mandates. No alterations will be made to historic structures without completion of the Assessment of Effect on Cultural Resources process, and approval from the Regional Director and State Historic Preservation Officer. Work orders for historic structures are submitted through the Planning Division who will determine appropriate actions.

Cabins and fire lookouts will be maintained over time as long as they are essential for meeting objectives of Wilderness management. They provide housing for backcountry personnel, are important visitor contact points, and serve as base stations for search and rescue operations. Non-historic structures are maintained in a condition that approximates the original condition of the structure, in accordance with park structural maintenance standards; and in such a manner that will minimize intrusion in the Wilderness. Wood stoves are used only during extremely cold temperatures and when they are necessary for emergency operations. Wood for fuel is brought in from outside of the Wilderness and is stored neatly by the cabins and out of site of visitors. Pit toilets and gray water drainage will be located in well drained soils, a minimum of 200 feet from surface waters (see Sanitation standards). If a structure is seriously damaged it may be replaced only if required to preserve Wilderness character or values, protect public safety and would not result in resource derogation.

There are two radio repeaters located at fire lookouts at Gobbler's Knob and Mt. Fremont. Additional radio repeaters will not be placed in the Wilderness unless no alternative locations are available.

Tools used to perform maintenance on historic and non-historic structures will be in accordance with the "minimum tool" guidelines.

Toilets

Toilets are provided at Trailside Camps, backcountry cabins and fire lookouts. Among these are outhouse structures located at backcountry cabins, fire lookouts, and some Trailside Camps. Where feasible, structures will be replaced with "Wallowa" style toilets, a less intrusive type of toilet that consists of a wooden seat placed over a pit.

Any work involving ground disturbance, including digging, or covering pits, requires Section 106 clearance through the Regional Archeologist.

Archaeological Sites

Limited archaeological surveys have been conducted in the Wilderness, however some sites exist and receive appropriate protection in accordance with the Archaeological Resources Protection Act and National Park Service policies. Any project involving ground disturbance (such as trail and restoration projects), requires Section 106 clearance through the Regional Archeologist.

Signs

National Park Service Management Policies (1988) note specific requirements regarding signs in Wilderness.

Signs detract from the wilderness character of an area and make the imprint of people and management more noticeable. Only those signs necessary to protect wilderness resources or for public safety; . . . will be permitted. Where signs are used, they should be compatible with their surroundings and be the minimum size possible.”

Signs are placed on Type B trail junctions in the Trail Zone only. No destination signs will be provided except at trailside camps. Minimum signing will be utilized for public health and safety and resource concerns in all zones. In general, signs will be few and simple.

In keeping with the character of wilderness and as directed by policy, where signs are used they should be compatible with their surroundings and be the minimum size possible. Most existing signs in the Wilderness are made of engraved aluminum sheets placed on metal posts.

Routed wood signs were installed along the Pacific Crest Trail in cooperation with the U.S. Forest Service. The park provided these signs but installation and maintenance are the responsibility of the U.S. Forest Service, Naches Ranger District.

Signs may note mileage to destination points, mark intersections of Type B trails, provide direction to campsites and toilets, and provide for wilderness resource protection. Signs noting regulations will be posted at the trailhead. Signs noting general points of interest will not be placed in Wilderness.

Inventory, periodic inspection and replacement of signs in the Wilderness are the responsibility of the Ranger Division.

Trailside Camp Signs

Destination signs will be provided at trailside camps *only*. These signs will be placed at the beginning of the spur trail which leads from the primary trail into the camp. Only the name of the camp and a directional arrow, if necessary, will be provided on the sign. Campsite markers and directional signs to toilets may also be provided at trailside camps.

No bulletin boards or other informational signs not specifically addressed above will be provided at trailside camps. No signs will be posted on the outside of outhouses. However, bulletin boards may be attached to backcountry cabins. No interpretive signs (information on flora, fauna, geology, etc.) will be placed in Wilderness except on backcountry cabin bulletin boards. Resource protection signs are permitted within constraints (see discussion below).

Mileage and Directional Signs

Mileage and directional signs will be provided along and at junctions of Type B trails only. These include primary hiking trails that are improved and maintained for foot and stock traffic and are the responsibility of the park trail crew and Ranger Division. Type C (primitive) trails will not be signed at junctions, destinations, or other locations except where needed for resource protection and within constraints discussed in a following section.

Type E (winter) trails and routes will be marked only for safety and resource protection purposes. Three Type E trails exist in Wilderness and are marked with orange signs with black lettering that are placed at trailheads and road crossings and generally follow the Type B trails. These trails may also be marked with orange snow poles or wands for the winter season only.

The Superintendent has given permission for the Mt. Tahoma Scenic Ski Trails Association to mark a route that passes through the west side of the park. Markers will be temporary and placed only during winter conditions, when snow depth exceeds two feet. The Ski Trails Association is responsible for removing markers at the end of the season.

Mileage will be noted in miles only, to the nearest tenth. A current list of trail distances will be updated during 1991 - 1994 and will be the joint responsibility of the Ranger and Maintenance Divisions.

Warning Signs

Warning Signs may be placed in Wilderness only in the Trail Zone and for those temporary hazardous conditions which are within management's control to correct (such as trail washouts). Visitors will be warned of naturally hazardous conditions at trailheads and through hiker and visitor center information. The Ranger Division is responsible for placement of warning signs.

Wilderness Regulations

Regulatory Signs will be placed at trailheads only; no regulatory signs are to be placed in Wilderness.

Resource Protection

Inventory, maintenance and installation of resource protection signs are the responsibility of the Ranger Division. Sign requests are submitted to the Wilderness Coordinator.

Signs noting closures for protection of natural resources may be placed in Wilderness only as a last resort and when all other less obtrusive alternatives (i.e., obliterating trails or campsites with brush) have not been effective in keeping visitors off these areas. Resource

protection signing may be more effective where active restoration efforts have been taken to restore impacted areas (e.g., seeding and mulching, planting “plugs”, etc.).

Resource protection signs will be temporary (two to three years), printed on 6 3/4" x 3 1/2" brown plastic signs with white lettering, and attached to small wooden posts, with the following standard text:

“Wilderness Restoration Site. Please do not walk through or camp in this area.
Thank You. ”

All other resource protection signs (e.g., metal, “stay off fragile meadows”, wooden stakes with stamped symbol of boot with slash through it, “Print Shop” signs, etc.), will be removed from Wilderness.

Signs protecting other natural resources (e.g., streams, lakes) will be permitted on a case-by-case basis with concurrence of the Park Sign Committee. Such signs include those placed at Mowich and Reflection Lakes.

Plaques or Memorials

No monuments or plaques exist in the park’s Wilderness with the exception of U.S .G.S benchmarks and tiltmeter marks and a monument at the Summit noting the new elevation of the mountain documented in 1988. No monuments, plaques or other memorials may be placed in the park’s Wilderness without specific legislative authority from Congress.

Administrative Use of Aircraft

Administrative use of helicopters is permitted in accordance with Office Order 87-1 and 79-8 (see Appendix D). Permission to use helicopters in Wilderness is granted by the Superintendent. Helicopter use in Wilderness, for other than emergencies, will generally ‘not be approved between July 1 and Labor Day and use is restricted to weekdays. Approval for use of helicopters in non-emergency situations will be granted only if it has been determined to be the minimum tool to achieve the purposes of the area or for protection of Wilderness values (see Appendix F).

There are no existing, constructed helicopter landing spots in the Wilderness. Natural openings are to be used for helicopter landings as detailed in the park’s Fire Management Plan. However, minimum clearing can be accomplished in an emergency if other safe alternatives have been ruled out. Site restoration is required if clearing is conducted.

Fixed wing aircraft are used in compliance with FAA regulations for administrative purposes such as for resource management, search and rescue and fire management operations.

Administrative Work Crews and Camps

Temporary work crew camps or Backcountry Ranger camps may be established within the Trailside Camps, or in more resilient areas of Crosscountry Zones with approval of the Superintendent. No camps will be established in NO CAMPING ZONES or within view or one quarter mile of Type A or B trails. Work crews will meet the same standards for camping as required for visitors, including group size limits. Cache boxes, equipment and supplies will be kept out of sight, where possible and will be removed when they are no longer essential. Camp locations will be selected based on minimum impact considerations. Large work crews may be assigned the use of entire Trailside Camps as long as public use of the area would not be significantly affected. All work camps will be restored to natural conditions upon completion of use. This includes removal of toilets and restoration of any social trails that may have been developed.

Administrative Use of Mechanized Equipment

Park use of power equipment in Wilderness is dictated by Office Order 87-1 (See Appendix D). The use of mechanical equipment is constrained by the Wilderness Act and National Park Service Policy. In determining the appropriate minimum tool for use in the Wilderness, consideration will be given to disturbing the visitor's Wilderness experience, public safety, and effects on Wilderness resources. Resource protection and safety concerns will take precedence over economic considerations. Alternative methods to power tools will be considered based on the project's objectives and minimum tool concerns. Use of power tools in Wilderness will be confined, as much as possible, to the period prior to July and after August. Use of helicopters, if determined to be the minimum tool, will be limited to before July 1 and after Labor Day and use is restricted to weekdays.

Approval for use of helicopters in non-emergency situations may be granted only if it has been determined to be the minimum tool to achieve the purposes of the area or for protection of Wilderness values.

Fire Management

Response to wildlands fire in Wilderness will be governed by the park's approved Fire Management Plan. The use of the "minimum tool" concept will be employed for fires in the Wilderness. Specific emphasis is on the natural role of fire in the park's ecosystem and the need to modify our responses in order to minimize the effects of suppression on the ecosystem. The fire decision chart contained in the Fire Management Plan outlines appropriate suppression response to human caused fires and for naturally caused fires. In addition the plan contains specific suppression standards, both tactical and strategic, that are designed to minimize the environmental effects of suppression activities. Fire suppression impacts to natural resources will be restored as soon as the fire is out. Costs for restoration will be a part of the overall costs associated with fire suppression.

Research

Research activities are permitted in accordance with 36 CFR. Research projects are permitted if they meet the following requirements: the project addresses an identified management need; addresses a stated Wilderness management objective; there is no alternative to conducting the research in the Wilderness area; and the project will not adversely affect or interfere with natural resources, ecosystem processes, aesthetic values, or recreational or conservation purposes of the Wilderness over a broad area or long duration.

The Butter Creek Research Natural Area was established in 1942 and includes the entire watershed of Butter Creek, approximately 2000 acres located in the Tatoosh Range in the southern part of the Wilderness. An additional 560 acres was added to the area in 1972, encompassing portions of the drainage located on U.S. Forest Service lands in the Tatoosh Wilderness. Research Natural Areas (RNA's), are prime examples of natural ecosystems and areas with significant genetic resources with value for long-term baseline observational studies or as control areas for comparative studies involving manipulative research outside the park. NPS Management Policies direct that RNA's will be managed to provide the greatest possible protection of site integrity in accordance with their designation. Activities in RNA's will be restricted to nonmanipulative research, education, and other activities that will not detract from the areas' research values. As such, visitor use may be restricted if it would result in unacceptable threats to the Butter Creek ecosystem or research projects being conducted within the RNA.

Research equipment and numerous study sites exist within the Wilderness: seismic monitoring stations; a weather station north of Chinook Pass on the park boundary; a Research Natural Area at Butter Creek; and several study sites marked with small metal stakes, tags, or wooden markers. Park personnel and visitors are not permitted to remove items marking research sites until consultation with and approval by the Natural Resources staff. The Natural Resources Division will ensure that Wilderness staff receive information on park research occurring in Wilderness.

Monitoring devices for hydrological, seismic, hydrothermal or other purposes may be installed and operated in Wilderness only when park management has determined that the information is essential and cannot be obtained from a location outside of the Wilderness and the proposed device is the "minimum tool" necessary to accomplish the study objective. Devices used for monitoring or research purposes are removed when they are no longer essential. All areas are restored to natural conditions at the completion of studies.

Rights-of-way

There is one park-maintained power line in the Wilderness between Longmire and Paradise. A telephone line to Sunrise is also present. No future right-of-way grants may be given without the specific authorization of Congress.

Mining claims or operations:

There are no active mines or valid claims within the park. Remains from past mining activities are present in the park's Wilderness and are comprised primarily of shafts, drifts, tailing piles, wooden supports, rail tracks or ways and assorted devices which are no longer operable. Some mining remains may be eligible for nomination to the National Register as historic objects. Some mining remains may need special measures to protect visitors from safety hazards. Mining remains not eligible for the National Register will be removed from the Wilderness as time and funding permit.

Use of Mechanical Forms of Transportation

Bicycles or other non-motorized mechanical forms of transportation by visitors (including strollers), are not permitted in Wilderness, with the exception of wheelchairs used by disabled visitors.

Use of Watercraft

No motorized watercraft is permitted in the Wilderness. Use of non-motorized watercraft is permitted when packed in and out of the Wilderness.

Hang-gliders or Paragliders

Hang-gliders and paragliders are not permitted in Wilderness in accordance with 36 C.F.R., Sec. 2.17.

Firearms

Visitor use of firearms is permitted only with stock along the Pacific Crest Trail. Firearms are not permitted in other areas of the Wilderness.

Pets

Dogs (except seeing eye dogs) or other pets (including sled dogs) are not permitted on trails or elsewhere in the park's Wilderness, with the exception of the Pacific Crest Trail.

Management of Use

Park visitors must accept wilderness largely on its own terms, without modern facilities provided for their comfort or convenience. Users must also accept certain risks, including natural hazards that are inherent in the various elements and conditions that comprise a wilderness experience and primitive methods of travel. The NPS will not eliminate or unreasonably control risks that are normally associated with wilderness, but it will strive to provide users with information on known possible risks as well as general information

concerning recommended precautions, minimum-impact use ethics, and applicable restrictions and regulations. Management actions will be directed toward providing opportunities for primitive and unconfined types of recreation by park visitors, but appropriate restrictions may be imposed on any authorized activity in the interest of preserving wilderness character and resources.

Permit systems are effective tools in reducing resource impacts and crowding in the Wilderness. These systems provide park management with daily quantified information on overnight use of the Wilderness, facilitate enforcement of use limits, and provide invaluable information for assessing user damage to Wilderness resources and in determining other management needs.

All backcountry permits and climbing registration cards will be entered into the computerized Backcountry Permit System on a daily basis. Permits for overnight use of the Wilderness are required year-round. Permits are issued in person, on a first-come, first-serve basis on the beginning date of their trip. Permits may be written for a maximum of 14 consecutive nights, the maximum stay in the Wilderness. Changes to permit itineraries may be obtained through field personnel who are in radio contact with the Hiker Center, or through one of the several permit stations located throughout the park. Data on camping location, length of stay, party size, locations of entry and exit, stock use, and other information are entered into the computerized data base. Permits reserve a space at the location and date indicated on the permit. Strict adherence to stated locations and dates of camping is required in order to manage overcrowding and potential resource damage. Campers are advised of alternatives to areas that have reached capacity or to crowded areas so that they may gain a greater degree of solitude in the Wilderness.

See Appendix B for current use limits for each Camp or Zone. Restrictions on use may be amended based on damage to Wilderness resources or success of rehabilitation or natural recovery of impacted areas. Climbers may be denied permission to use popular routes if Wilderness values are being threatened. Wilderness users may be requested to show field rangers their permit at any time. Permit requirements will be strictly enforced. Annual statistics will be compiled from permit data in order to determine patterns of use in the Wilderness.

Group and Party Size and other Camping Restrictions

There is no group size restriction for day use of the Wilderness. The following limits are for overnight use of the Wilderness during June 1 through September 30 and any other time of the year when snow depth is two feet or less:

Trailside Zone:

Camping is permitted in designated sites.

Individual Site: group site limited to one to five people, or an immediate family (parents and their children). Each trailside camp has a designated number of individual sites.

Group Site: group site of six to twelve people. Some trailside camps do not have group sites. A party of less than six persons may be placed at a group site if all individual sites are filled.

Crosscountry Zone:

Camping is permitted a minimum distance of 1/4 mile from roads, Type A and B trails, No Camping Zones; and a minimum of 100 ft. from lakes, streams or other wetlands.

Group size is limited to five persons in all crosscountry zones. Limits on overnight use have been placed on all crosscountry zones with the exception of the three lower forest zones.

Alpine Zone:

Party limits have been placed on several alpine zones; some limit the number of persons permitted each night, some limit the number of parties permitted each night. Group size is limited to five persons when camping on bareground sites and 12 persons when camping on snow or ice.

Winter Wilderness/backcountry camping is permitted from October 1 through May 31 when snow cover is over two feet. Camping is permitted anywhere beyond 200 feet of roads (plowed or unplowed) and a minimum of 100 ft. distance from lakes, streams or other wetlands. Group size is limited to a maximum of 12 persons during this time period. Trails will not generally be marked, and visitors must navigate on their own and be aware of common hazards such as avalanches, weather and difficulty of travel ways.

In addition to the existing zones, four winter zones have been established in Wilderness: Mazama Ridge, Ice Caves, Reflection Lakes, and Van Trump Park. For camping restrictions at Paradise (non-wilderness) refer to Appendix A and B.

Climbing activities

Climbing registration is required for day hikers, backpackers and climbers who plan to climb to the summit, Little Tahoma, or travel on glaciers (with the exception of the Guide Concessionaire traveling within the Muir Corridor). The climbing registration card also serves as a backcountry permit and generally applies to alpine areas above Camps Muir and Schunna or on any glacier. In order to obtain a climbing permit the following regulations must be met:

1. All persons must be a minimum of 18 years of age or have written permission to climb from a parent or guardian;
2. Climbing permits are completed for each party member in order to facilitate search and rescue activities;
3. Each party must consist of a minimum of two persons unless a climber has received special written permission from the Superintendent for solo climbing.

Climbing aids such as drills, permanently placed hardware (bolts, ladders), or any methods that physically alter rock faces (chalk, chiseling, breaking loose rocks, removal of lichen or plants from rock faces, etc.), are not permitted. Most of these restrictions are covered under 36 CFR Parts 1 and 2. Climbers are permitted to temporarily place plastic or bamboo “wands” along snow-covered routes in alpine zones to ensure a safe return trip, and portable ladders to cross crevasses; however: wands and ladders must be removed immediately upon the return trip back down the mountain.

Pacific Crest Trail

Approximately 15 miles of the Pacific Crest Trail winds through the park’s northeastern boundary. Of this, only about five miles of trail is within the park. None of the legal camping zone within this area is suitable for camping. As such, no permits will be issued for camping along the Pacific Crest Trail. However, camping is permitted on adjacent U.S. Forest Service lands.

Public Education and Interpretation

The park Division of Interpretation is responsible for developing and disseminating information on the role of Wilderness in the park, and promoting public understanding of wilderness values and ethics to encourage wise use of the resource. Interpretive activities will be expanded to provide Wilderness messages to users.

Support from the private sector' and the natural history association will be explored to provide public education on minimum impact wilderness use philosophy and techniques.

Training

National Park Service employees will be trained in Wilderness mandates, policy and management through attendance at workshops, conferences and training sessions. An annual training session open to all employees will be provided at the beginning of the summer season. A Wilderness Plan meeting, open to all employees, will be held annually to discuss policies and management strategies and to provide employees with an overview of the state of the Mount Rainier Wilderness. Additional training sessions may be offered on impact monitoring techniques and the use of the minimum tool concept.

Cooperation with Adjacent Landowners

The Mount Rainier Wilderness is surrounded by the Snoqualmie and Gifford Pinchot National Forests, and by Plum Creek and Champion Paper Company lands on the west side. The National Forest lands include several Wilderness areas: Glacier View, Tatoosh, William O. Douglas, and the Clearwater Wilderness. Interagency coordination is necessary for visitor use and resource management and information dissemination. Park management will communicate and work cooperatively with adjacent landowners to enhance Wilderness management.

X. MANAGEMENT ALTERNATIVES

Numerous alternatives exist for managing the Wilderness of the park. They range from virtually no action to imposing the most severe controls on visitor use. When the first Backcountry Management Plan was written in 1973 many alternatives were considered. The one selected was the most appropriate for the time and problems encountered. The park staff will review and update this plan annually and determine if additional management actions are warranted. The following alternatives have been considered:

No Action

Under this alternative no permits would be required; no limits would be imposed on party size, campsite locations, numbers of parties/area; and stock use would be unregulated.

Permits Only, No Quotas

No use quotas would be imposed however permits would be issued to all overnight visitors for Wilderness use. This system could impose limits or restrictions on fires, horses, and campsite location. Since permits are required park management could monitor use levels and advise visitors regarding crowding.

Trailhead Quotas: No Requirement to Use Trailside Camps

Backcountry permits would be issued and similar restrictions as mentioned under PERMITS ONLY would occur. This alternative would limit trailhead use rather than place quotas on trailside camps and zones on total numbers of people. This alternative may affect day hikers, although it would be unlikely.

Quotas Only Where Crowding or Resource Damage is Evident

This option would include permits and quota restrictions similar to the alternative, "Permits Only, No Quota. Actions could only be taken after unnecessary environmental impacts had occurred and action taken would likely be very restrictive to permit mitigation of resource damage.

Quotas Only at Trailside Camps

This alternative would include permits and limits similar to those noted under, "Permits Only, No Quotas." Limits would be placed on camping in Trail Zones but not Crosscountry or Alpine Zones (with the exception of designated camps).

Quotas at Trailside Camps, Some Subalpine Crosscountry Zones, and Some Alpine Routes

This alternative limits use at trailside camps in the Trail Zone, subalpine crosscountry zones that can tolerate only limited use, and limits on use of certain popular alpine routes where sanitation and damage to the fragile alpine ecosystem is a concern. Limits on use are determined from qualitative and quantitative documentation of resource impacts occurring in these areas. Routine monitoring of bareground impacts, damage from social and way trails, sanitation, and water quality problems is conducted. Management strategies are evaluated and refined as appropriate.

XI. RECOMMENDED ALTERNATIVE AND REASONING

Experience has shown that the “No Action” and “Permits with no quotas” alternatives have resulted in overcrowding and unacceptable impacts on the Wilderness resources of popular camping areas.

The “Trailhead Quotas” alternative deserves consideration where one trail is the primary access into an area. However, the nature of the trail system at Mount Rainier, with many trailheads leading to common areas, makes such a system impractical.

The alternative? “Quotas Only At Crowded or Damaged Areas,” assumes that crowding or damage has already occurred before action is taken. Since the National Park Service is required by legislation and policy to prevent such damage and crowding, this option is not satisfactory.

“Quotas Only at Trailside Camps” would provide inadequate protection to more popular Crosscountry Zones, and add to the existing problem of poorly prepared visitors camping in Crosscountry Zones because adjacent trailside camps are full. Experience has shown that these users camp near the trail in the Trail Zone, often failing to use low impact techniques and frequently cause significant resource damage.

Recommended Alternative

Since 1973, “Quotas at Trailside Camps and Certain Crosscountry Zones and Alpine Routes” has been the selected alternative for management of the area now known as the Mount Rainier Wilderness. This management technique has proven effective in greatly reducing resource damage and overcrowding. Impacts are concentrated in trailside camps and trails within the Trail Zone, thus allowing large numbers of users to camp along trails while protecting the surrounding environment they have come to enjoy. Sensitive subalpine Crosscountry Zones are also better protected through this alternative. When problems are observed in one area, limits are also imposed on areas with similar habitat where use would likely result in similar impacts. Consequently, impacts are prevented before serious damage occurs.

XII. STAFFING. ROLES AND RESPONSIBILITIES

Ranger Division

The Ranger Division is responsible for overall coordination of Wilderness management; implementation of actions involving restoration of Wilderness conditions; enforcement of regulations and compliance with LAC standards; inventories and monitoring of Trailside Camps; gathering and summarizing visitor use data, including issuing permits at all Ranger Stations, and operation of the White River Hiker Center; and routine backcountry patrols.

The Muir District includes all of Wilderness and is divided into three units: Klapatche (west side), Yalcima (east side), and Tahoma (Alpine zones, Camps Muir and Schurman). A district Ranger supervises two backcountry Rangers, a Climbing Ranger, and the Ranger Division Resource Management Specialist who also serves as the Wilderness Coordinator. Seasonal Rangers are on duty during summer through early fall.

A Hiker Center is located at the White River Ranger Station and is supervised by the Yakima subdistrict Ranger. Permits are also issued at Carbon River, Paradise, and Ohanapecosh Ranger Stations.

Restoration of bareground impacts (trails, camp and rest areas) is the responsibility of the Ranger Division. Large projects are planned by the Botanist (under the Natural Resources Division), and implemented by Ranger Division staff under the supervision of the Ranger Division Resource Management Specialist. Small projects are planned and implemented by the Backcountry unit Rangers and the Ranger Division Resource Management Specialist.

Interpretation

The Interpretation Division is responsible for administration of the Longmire Hiker Center including operation of the Backcountry Permit System and public education of Wilderness management and philosophy. Permits are also issued at other information centers at Sunrise and Ohanapecosh.

Maintenance Division

Maintenance Division responsibilities in Wilderness include maintenance and monitoring of Type B trails and management of human wastes in alpine areas.

Natural Resources

The Natural Resources Division conducts park-wide inventory and monitoring of natural resources and administers research, some of which is directly applicable to Wilderness management. The Natural Resources Division develops and refines LAC standards and assesses Wilderness conditions; improves restoration techniques and administers the park

greenhouse; develops restoration plans for projects involving large work groups and areas; assesses threats to natural resources and ensures NEPA compliance for all projects.

Planning and Professional Services

The Planning and Professional Services Division is responsible for compliance with cultural resources mandates in Wilderness.

Administration

The Computer Specialist is responsible for program and management of the Backcountry Permit System.

XIII. WILDERNESS FUNDING AND MANAGEMENT, RESEARCH AND MONITORING NEEDS

RECOMMENDED PROJECT/ACTIVITY

The following projects are discussed in detail in the Mount Rainier National Park Resources Management Plan (RMP).

Standards for Resource and Social Conditions

Aquatic resources conditions: Develop and implement long-term monitoring of lakes-and streams to determine the effects of human use on aquatic resources and to develop more measurable standards. This project is discussed under RMP N-017.

Wildlife conditions: Define wildlife indicator species which are sensitive to human presence. Identify habitat, gather baseline data on population trends and distribution. Develop long-term monitoring programs to determine the effects of human presence, (including noise generated by management use of motorized equipment), and develop more measurable standards. This project pertains to monitoring human impact on park resources and baseline inventorying and monitoring and is covered under RMP N-010 and N-035, respectively.

Sanitation conditions: Determine the extent and severity of the human waste problem in the backcountry/Wilderness. Conduct soil and hydrologic surveys in trailside camps to determine suitability for pit toilet placement. These projects are covered under RMP N-011. Develop a long-term monitoring program to assess the presence of Coliform bacteria and Giardia. This project is covered under RMP N-017A and N-017J.

Landscape Conditions: Conduct inventories and develop long-term monitoring programs for detecting, monitoring and mitigating human impacts to vegetation and soils in Wilderness. Restore/rehabilitate areas impacted by human use. Support park greenhouse operations and related research to aid in restoring impacted areas. Investigate trampling effects on lower forest environments. These projects are covered under RMP N-010 and N-013. Remove trash and debris from Wilderness.

Stock use conditions: Monitor stock use and trails and camps where stock is permitted to detect unacceptable impacts. This project is covered under RMP N-010 and N-013.

Trail conditions: Monitor and repair type B trails in accordance to the MORA Trails Management Handbook (1989). Inventory Type C and social trails and mitigate unacceptable damage. Repair and maintain Type B trails to mitigate and to prevent resource damage. These projects are covered under RMP N-010 and N-013.

Endangered, Threatened, and Rare Species conditions: Assess habitat needs and identify critical habitat. Manage endangered, threatened and rare species as required by law and NPS and MORA policies. This project is covered under RMP N-012 and N-015.

Air Quality Conditions: Identify and monitor air quality related values to determine compliance with the Clean Air Act provisions. This project is covered under N-004. Monitor precipitation chemistry to determine trends in acid precipitation. This project is covered under RMP N-026 and N-041.

Opportunity for Solitude and Experience: Monitor adjacent land-use practices that may affect Wilderness visitors' sense of solitude (from visible and noise related disturbances). Monitor aircraft overflights and work with the FAA and DOD in gaining compliance with the voluntary 2,000 ft. restriction and other Wilderness concerns. Develop techniques for defining indicators and standards of solitude and to monitor the opportunity for solitude available in the Wilderness. These projects are covered under RMP N-027 and N-041.

Standards for Administrative Use

Structures: Preserve historic cabins, lookouts and structures. This is covered under the Cultural Resource Management Program. Remove all other structures that are not necessary for administration of the Wilderness is under RMP N029.003.

Signs: Implement revised MORA Sign Plan by removing all signing except where permitted. Utilize signing for resource protection only where other less obtrusive alternatives have failed. Mark and monitor park/Wilderness boundary. Replace metal signs with wood to make compatible with surrounding area as directed by approved Sign Plan or park Superintendent. This project is covered under RMP N029.004

Administrative use of mechanized equipment: Utilize minimum tool philosophy in the Wilderness. Comply with MORA office orders on Aircraft Use and Use of Mechanized Equipment and strive to minimize intrusions on visitors' Wilderness experience while accomplishing identified administrative tasks. This project is covered under RMP N029. Conduct research to determine visitors' perception of noise disturbances. This project is covered under N-027.

Fire Management: Implement the MORA Fire Management Plan. Utilize minimum fire suppression techniques where and when appropriate. Rehabilitate areas impacted by fire suppression activities. This project is covered under N-024.

Research: Permit and encourage research in Wilderness in accordance with 36 CFR. Assure that researchers utilize minimum impact techniques and minimum tools to accomplish identified studies. Encourage research that has direct application to park and Wilderness Management objectives. This project is related to N-036 and is covered under a variety of RMP project statements.

Management of Use: Develop a credible system for gathering information on day use of the Wilderness. This project is covered under N-027. Control visitor use of the Wilderness only to the degree necessary to meet standards established for resource and social conditions. This project is related to N-010 which would provide information that can be used to refine Wilderness standards; and N029.006 and .008. Provide for visitor and employee education and interpretation of Wilderness through public education programs (N029.008), employee training (N029.015), and where appropriate, through increased uniform staff (N029.007). Assess compliance with backcountry permits (N027.004). Collect and analyze backcountry/Wilderness use data (N029.006).

S-Y OF WILDERNESS FUNDING NEEDS

Unless otherwise noted, all funded and unfunded needs refer to park base funds.

Wilderness Management Planning

RMP N029.13 Wilderness Management/Administration
Funded: 16.75 dollars, .40 FTE

Develop Resource Baseline and Monitor Wilderness Resources

RMP N017.001 Monitor quality of aquatic resources
Funded: 15.0, 0.75 FTE
Unfunded: 24.0, 0.3 FTE

RMP N017.002 Monitor quantity of aquatic resources
Unfunded: 35.0 dollars, 0.7 FTE

RMP N017.013 Monitor glacial activity
Funded: 2.0 dollars, 0.02 FTE

RMP N017.010 Monitor human impacts on water resources
Funded: 10.0 dollars, 0.25 FTE
Unfunded: 35.0 dollars, 0.6 FTE

RMP N029.001 Assess Wilderness Conditions

Funded: 15.0 dollars, 0.3 FTE

Unfunded: 55.5 dollars, 2.32 FTE

RMP N035.001 Establish remote area weather stations

Unfunded: 20.0 dollars, 0.2 FTE

RMP N029.006 Collect/analyze Wilderness Use Data

Funded: 10.0 dollars, 0.2 FTE

RMP N004 Monitor Air Quality and Effects on Wilderness Resources

Funded: 8.5 dollars, .20 FTE

Unfunded: 50.0 dollars, 1.0 FTE

Unfunded research/monitoring: 75.0 dollars, 1.0 FTE (for three years only)

RMP N26 Monitor precipitation and cloudwater chemistry

Funded: 8.0 dollars, .1 FTE

Unfunded: 25.0 dollars, .5 FTE

RMP NO01 Monitor Elk Populations/Impacts to Vegetation

Funded: 5.5 dollars, 0.4 FTE

Unfunded: 11.0 dollars, 0.64 FTE

RMP N002.001 Inventory bear population

Unfunded: 35.0 dollars, 0.5 FTE (one year only)

RMP NO08 Inventory Bull Trout

Unfunded: 300.0 dollars, 3.5 FTE

Research

RMP N029.001 Restore Wilderness Conditions (research methods to improve restoration techniques and LAC standards)

Funded: 2.0 dollars, .2 FTE

Unfunded: 50.0 dollars, 0.4 FTE

RMP N01 1 Management of Human Wastes (Wilderness)

Funded: 40.0 dollars (from Water Resources Division)

Unfunded: 20.0 dollars, 0.4 FTE (one year only)

RMP N017.001 Inventory quality of aquatic resources

Unfunded: 30.0 dollars, 0.3 FTE

RMP N017.011 Assess threats from stormwater runoff

Unfunded: 35.0 dollars, 0.5 FTE

RMP N029.012 Study recreational impacts on wildlife

Unfunded: 35.0 dollars, 0.5 FTE

RMP N027.001 Sociologic Research (Solitude)

Funded: 20.0 dollars (GMP funds)

Unfunded: 60.0 dollars, 0.2 FTE (for two years only)

RMP N027.002 Sociologic Research (Day Use)

Funded: 25.0 dollars, 0.05 FTE

RMP N027.003 Sociologic Research (Backcountry User Survey)

Unfunded: 40.0 dollars, 0.2 FTE (one year only)

RMP N027.004 Sociologic Research (Non-compliance with minimum impact techniques and permit regulations)

Funded: 2.5 dollars, 0.01 FTE

Unfunded: 35.0 dollars, 0.5 FTE (one year only)

RMP N029.009 Management of Wilderness: stock use

Unfunded: 6.0 dollars, 0.1 FTE (one year only)

RMP N043 .000 Study Volcanic Hazards

Funded: 3.0 dollars, 0.05 FTE (to coordinate research only)

Unfunded: 100.0 dollars, 2.0 FTE (one year only)

RMP NOOS.O1 Assess Impacts of Past Fish Stocking

Funded: 5.0 dollars, 0.05 FTE

Unfunded: 65 .0 dollars, 1 .0 FTE (one year only)

RMP N010, N012, NO35 Evaluate Effects of Mushroom Harvesting

Unfunded: 444.0. 5.0 FTE

RMP N035.002 Inventory/Monitor Mammals

Funded: 2.0 dollars, 0.02 FTE

Unfunded: 1 SO.0 dollars, 1.8 FTE (one time only)

Unfunded: 50.0 dollars, 1.8 FTE (for base dollars)

RMP N035.003 Inventory/Monitor Plant Species and Communities

Funded: 6.0 dollars, 0.04 FTE

Unfunded: SO.0 dollars, 0.8 FTE

RMP N012 Inventory/Monitor Rare, Threatened, Endangered Species Habitat

Funded: 7.0 dollars, 0.04 FTE

Unfunded: 57.5 dollars, 0.8 FTE

Visitor Management

RMP N029.007 Wilderness Patrols

Funded: 90.0 dollars, 4.07 FTE

Unfunded: 125.0 dollars, 5.0 FTE

RMP N029.014 Wilderness Boundary Survey

Unfunded: 250.0 (one time only)

RMP NO29 .OOS Hiker Center Operations/Interpretation/Public Education for Wilderness Users

Funded: 19.0 dollars, 1.05 FTE

Unfunded: 36.0 dollars, 1.5 FTE

Maintenance and Restoration to Meet LAC standards

RMP N011 .000 Management of Human Wastes

Funded: 10.0 dollars, 0.2 FTE

Unfunded: 75 .0 dollars, 1.5 FTE

RMP N029.001 Restore Wilderness Conditions

Funded: 5.0 dollars, 0.04 FTE

Unfunded: 85 .0 dollars: 2.7 FTE

RMP N029.002 Remove trash and debris

Funded: 0.3 dollars, 0.1 FTE

Unfunded: 5.0 dollars, 0.5 FTE (one year only)

RMP N029.003 Remove unnecessary structures

Unfunded: 6.0 dollars, 0.1 FTE (one year only)

RMP N029.004 Implement revised Wilderness Sign Plan

Funded: 1.0 dollars, 0.2 FTE

Unfunded: 25.0 dollars, 0.2 FTE

RMP N029.010 Management of Wilderness trail conditions to meet LAC standards

Funded: 192.1 dollars, 7.58 FTE

Unfunded: 170.0 dollars, 5.0 FTE

Unfunded: 290 dollars, 5.0 FTE (one time only)

RMP N005 Control Exotic Plants

Funded: 5.0 dollars, 0.2 FTE

Unfunded: 35 .0 dollars, 1.3 FTE (one year only)

RMP N008.002 Remove exotic fish from Wilderness lakes

Unfunded: 100.0 dollars, 3 .0 FTE

Wilderness Education

RMP N029.008 Management of Wilderness: Interpretation/Public Education

Funded: 9 .0 dollars, .5 FTE

Unfunded: 18.5 dollars, 1 .0 FTE

Training

RMP N029.015 Management of Wilderness: Employee Training Needs

Unfunded: 20.0 dollars

XIV. WILDERNESS REPORTS

Three reports will be submitted to the Superintendent:

1. State of the Wilderness: This report will be completed once every five years and will identify areas where current conditions fail to meet established standards for resource and social conditions, and management actions necessary to meet these standards. The report will also address conditions of the backcountry over the past five years and will include a summary of all management activities including monitoring; rehabilitation and restoration efforts; relocation of trailside campsites, toilets, or other developed facilities; use statistics; documented impacts; and other management and funding needs. The Wilderness Coordinator is responsible for preparing this report with coordination with all other staff involved in Wilderness. The first report is due by December 30, 1994.
2. Mechanized Equipment Use Report: These reports will be prepared annually, and include any use of mechanized equipment with a brief project description and justification for use of aircraft and power tools and equipment in the Wilderness. The Maintenance, Ranger, and Natural Resource Planning Divisions are responsible for preparing reports on their respective activities and submitting them to the Superintendent by December 1 of each year.
3. Wilderness activities including planning, operational activities, restoration efforts, and Wilderness inventory, monitoring and research, will reported annually in the Superintendent's Annual report.

Glossary

Backcountry Cards: Backcountry cards include Non-compliance and Backcountry Impact Cards. Observed violations of park regulations and impacts to resource and social conditions are documented on these cards. Cards are summarized annually to provide information of Wilderness and backcountry conditions and to highlight problems.

LAC Factors: Key resource and social conditions that can be measured to aid in describing the state of the Wilderness. Examples are: Aquatic Resources, Sanitation, Landscape Conditions, etc.

LAC Indicators: Provide an indication of the state of the resource or social condition when conducting inventories; specify the variable to be measured; and identify the unit of analysis. For example, in selecting indicators to define landscape conditions, an indicator may be the amount of bareground that is present at any one site, (measured in square meters) as a result of camping impacts.

LAC Standards: Measurable aspects of the indicators that provide a base against which a particular condition can be judged as -acceptable or not.

Limits of Acceptable Change (LAC): A planning framework developed by Stankey, et al., 1985, for establishing acceptable and appropriate, or desirable resource and social conditions (factors) in recreation settings. The Mount Rainier Wilderness Plan has incorporated a modification of the LAC system for developing standards and addressing area issues and concerns.

Minimum tool: The Wilderness Act states, "...except as necessary to meet minimum requirements for the administration of the area for the purpose of the Act.. . (there shall be) no use of motor vehicles, motorized equipment or motorboats, no landing of aircraft, no other form of mechanical transport.. ."

The minimum tool is the tool that is least disruptive to Wilderness resources, including resource and social considerations, and yet is adequate for accomplishing management tasks (such as trail construction, restoration projects, removal of human wastes with aircraft, and research). A Minimum Tool Justification form is presented in Appendix F.

Social Trails: These trails are generally user-created "spurs", off of Type A, B or C trails, or trails surrounding lake basins or within sensitive vegetation, which have been identified as creating or contributing to resource damage. Many social trails exist throughout the Wilderness and are being rehabilitated as time and funding permit.

Type A Trails: Paved trails that are improved and maintained for foot traffic. These trails usually reach many of the main visitor attractions and serve as a terminus for Type B or Type C trails. Minimum tread width is usually 24 inches, and overall grade is less than 10 percent. For grade distances less than 150 feet, grade should not exceed 15 percent. There are no Type A trails in the Wilderness.

Type B Trails: Trails that are improved and maintained to accommodate foot and stock traffic but contain an overall lower construction standard than type A trails. These trails serve scenic areas, fishing areas, and access points. These developed trails contain the necessary trail construction items such as bridges, culverts and other types of drainages, puncheon and etc. Trail tread may be limited to the space required to form a single-file trail except on grades where the maximum is justified. The overall grade is less than 15 percent. For distances less than 150 feet, grade should not exceed 18 percent. Type B trails exist only in the Trail Zone of the Wilderness and include the Wonderland trail.

Type C Trails: These are “way trails” or frequently used travelways, mostly created by hikers. Type C trails are normally used by experienced Wilderness users and are generally not marked except to protect natural resources. These trails are routinely inspected by Rangers for erosion and other resource damage. Maintenance is limited to preventing additional resource damage. Trail width should normally not exceed 18 inches. These trails will not be signed and will not be published on public information brochures or maps. Visitors requesting permits for crosscountry areas with Type C trails will be given information regarding their location and requested to use Type C trails, where they exist, rather than creating new social trails.

Winter Conditions:

Between October 1 and May 31 when snow depth exceeds two feet in the Wilderness; and five feet at Paradise.

Summer Conditions:

Between June 1 and September 30 and when snow cover is less than five feet or more at Paradise and less than two feet or more elsewhere.

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APPENDIX A

MANAGEMENT OF NON-WILDERNESS BACKCOUNTRY AREAS

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MANAGEMENT OF NON-WILDERNESS BACKCOUNTRY AREAS

This plan serves as an appendix to the Wilderness Management Plan to provide guidance to employees and the public on management of backcountry areas within the park that are excluded from the Mount Rainier Wilderness. The non-wilderness zone includes all of the developed areas, outside of the designated Wilderness boundary. See Fig. 1 of the Wilderness Management Plan.

Developed Facilities

Developed visitor and employee facilities are at Longmire, Nisqually, Paradise, Sunrise, White River, Carbon River, Ipsut Creek, Cougar Rock, Ohanapecosh, and Camps Muir and Schurman.

Road Corridors

This zone includes road corridors adjacent to the Wilderness boundary. Road corridors generally extend from 100 ft. of the center line of unpaved roads and 200 ft. of the center line of paved roads. The Mount Rainier Wilderness Act requires, "... To the extent practicable, undeveloped areas adjacent to all roads shall be managed as if designated as Wilderness. "

Water Systems

Several water systems are located throughout this zone.

Frontcountry Campgrounds

Frontcountry campgrounds are located at Sunshine Point, Ipsut Creek, Cougar Rock, White River, Ohanapecosh and Mowich Lake. Group campsites can be reserved at Ipsut Creek and Cougar Rock campgrounds. Frontcountry campground regulations are provided in Attachment 1.

Backcountry Camps

Backcountry camping is available at Camps Muir and Schurman, Emmons Flat, and Sunrise Trailside Camp. Quotas have been established on the number of persons or permits issued per night. (See Appendix B of the Wilderness Plan).

Public Shelters

A public climbing hut is located at Camp Muir. A Guide House is operated by the concessionaire at Camp Muir. The Camp Muir structures have been designated under the National Register of historic places. Any alteration to historic structures requires compliance with Section 106 of the Historic Preservation Act.

Cabins

Patrol cabins are located at Camps Muir and Schurman.

Archaeological Sites

Very few cultural sites utilized by prehistoric Indians and historic human activities have been identified in the park. These sites receive appropriate protection in accordance with the Archaeological Resources Protection Act and National Park Service policies. Any projects involving ground disturbance requires compliance with cultural resource mandates.

Signs

Numerous signs are located throughout this zone in the developed facilities and road corridors. Destination signs and informational bulletin boards are present at Camps Muir and Schurman and Sunrise Trailside Camp. Most of these signs are on metal posts and are constructed of buffed aluminum plate with engraved and painted lettering. Signs note mileage to destination points, mark intersections, designate points of interest, detail rules and regulations and give other information. Minimum signing will be utilized in this zone for public health and safety and resource concerns. Further information on signs is available in the park's Sign Plan.

Plaques or Memorials

The Stevens-Van Trump historical monument and the Marine Memorial monument are located within this zone.

Administrative Use of Aircraft

Helicopters are frequently used for human waste disposal and other uses in this zone. Administrative use of helicopters is permitted in accordance with Office Order 87-1 and 79-8. Permission to use aircraft in the park is granted by the Superintendent, except in emergency operations. Except in very special situations, helicopter use for other than emergencies will not be approved between July 1 and Labor Day and use is restricted to weekdays. Approval for use of helicopters in non-emergency situations will be granted only if it has been determined to be the minimum tool since helicopter use will affect the adjacent Wilderness area.

There are constructed helipads at Camp Muir and Kautz Creek.

Fixed wing aircraft are used in compliance with FAA regulations for administrative purposes such as for resource management, search and rescue and fire management operations.

Administrative Use of Mechanized Equipment

Park use of power equipment is dictated by Office Order 87-1 (Appendix D of Wilderness Plan).

Fire Management

Response to wildlands fire is in accordance with the park's approved Fire Management Plan.

Research

Research activities are permitted in accordance with 36 CFR. Research projects are permitted if they meet the following requirements: the project addresses an identified management need; addresses a stated management objective; there is no alternative to conducting the research in the park; and the project will not adversely affect or interfere with natural resources, ecosystem processes, aesthetic values, or recreational or conservation purposes of the area.

Research equipment and study sites may exist within the non-wilderness: seismic monitoring stations are located at Longmire, Camp Schurman and Camp Muir; a remote area weather station is located at Camp Muir; and several study sites may be marked with small metal stakes, tags, or wooden markers. **Park personnel and visitors are not permitted to remove items marking research sites until consultation with and approval by the Natural Resources staff. The Natural Resources Division will ensure that Wilderness staff receive information on park research occurring in Wilderness.**

Use of mechanical forms of transportation

Use of bicycles or other non-motorized mechanical forms of transportation by visitors is not permitted off of park roads, with the exception of wheelchairs used by disabled visitors.

Hang-gliders or Paragliders

Hang-gliders and paragliders are not permitted for use in the park in accordance with 36 C.F.R. , Sec. 2.17.

Firearms

Visitor use of firearms is not permitted in this zone, in accordance with 36 C.F.R.

Pets

Dogs (except seeing eye dogs) or other pets (including sled dogs) are permitted only in developed areas and frontcountry campgrounds, subject to restrictions as noted in Attachment 1. Pets are not permitted in backcountry camps or along trails except the Sunrise pet trail.

Snowmobiles

There are four roadway areas within the park which have been designated as snowmobile use areas. See Attachment 2.

Sanitation

Restroom facilities are located throughout developed areas, frontcountry campgrounds and along some roads.

A portable chemical toilet is located at Panorama Point. Two pit toilets and a solar-assisted toilet are located at Camp Muir. A pit toilet is located at Camp Schurman. Latrines with privacy screens are located at Emmons Flat. A pit toilet is located in the Sunrise Camp. No toilet facility will be placed less than 200 feet from lakes, tams, streams or other wetlands. Toilet design and siting in backcountry camps will minimize visual impacts. Where no toilet facilities are available visitors should use surface, "cathole," or the blue bag methods of human waste disposal. Use of surface disposal is encouraged in more isolated areas. In surface and cathole disposal toilet paper waste must be carried out with other litter, and not left or buried. No washing or use of cleansing agents, disposal of food, human or stock wastes is permitted within 200 feet of lakes, tams, streams or other wetlands. Visitors and staff will remove all litter and trash, including toilet paper waste. Trash will not be deposited in crevasses.

Sanitation impacts will be documented. Long-term monitoring programs will be developed where necessary to assure protection of resources and public health and safety. Public education, interpretive media and enforcement will be utilized to gain compliance. Research on alternative techniques for human waste disposal should be explored to provide safe and simple methods that minimize damage to the environment and on visitors' experience.

Backcountry Permits and Climbing Registration

Backcountry Permits, or Climbing Registration cards (for day or overnight climbs or hikes), are required year-round for any camping at Camp Muir and Schurman, Emmons Flat, and Sunrise Trailside Camp. A permit is also required for winter camping at Paradise, Sunrise, White River and Mowich Lake non-Wilderness areas. Backcountry and climbing permits will be entered into the computerized Backcountry Permit System on a daily basis. Permits are issued on a first-come, first-serve basis on the first day of the visitor's trip. Permits are written for a maximum of fourteen consecutive nights, the maximum stay in the park. Permits are issued at Ranger Stations and Hiker Information Centers in the summer and at the Longmire Museum in the winter. Data on camping location, length of stay, party size and locations of entry and exit, etc. are entered into the computerized data base. Permits reserve a space at the location and date indicated on the permit. Strict adherence to stated locations and dates of camping is required in order to manage overcrowding and potential resource damage.

Climbing registration is required for backpackers, climbers or day hikers climbing to the summit, on Little Tahoma, or travel on glaciers (with the exception of the Guide Concessionaire traveling within the Muir Corridor). Climbing registration is required for day or overnight climbing. Climbing registration will serve as a backcountry permit and generally applies to alpine areas above Camps Muir and Schurman or on any glacier. In order to obtain a climbing permit the following regulations must be met:

1. All persons must be a minimum of 18 years of age or have written permission to climb from a parent or guardian;
2. Climbing permits are completed for each party member in order to facilitate search and rescue activities if necessary;
3. Each party must consist of a minimum of two persons unless a climber has received special written permission for solo climbing from the Superintendent;
4. Party size is limited to 12 persons.

Camping ¹⁷

Camping is permitted in the non-wilderness zone at frontcountry campgrounds. Camping is also permitted in the following non-Wilderness areas with restrictions.

Gas, propane, butane or similar fueled stoves are permitted. No wood or charcoal stoves, including "twig" fueled stoves, are permitted. No camping is permitted within 100 feet of lakes, streams or other wetlands. No camping is permitted on roads, plowed or snow-covered, at any time of year.

From June 1 through September 30 and at any other time of year when snow depth is less than two feet, camping is permitted with a Backcountry Permit at:

Sunrise Trailside Camp: In designated campsites (eight individual, two group sites). Maximum group size for individual sites is five and twelve for group sites.

¹⁷ Refer to Wilderness Plan Appendix B for additional information on limits.

Camps Muir and Schurman and Emmons Flat: Camping is permitted in the designated areas at Camps Muir (limit 110 persons), and Schurman (limit 35 persons), and Emmons Flat (no use limits). Permits are required.

Other non-Wilderness areas: No camping is permitted within one-quarter mile of roads, Type A and B trails, and No Camping Zones, including Paradise and Sunrise areas.

From October 1 through May 31 when snow depth exceeds two feet camping is permitted with a Backcountry Permit:

Sunrise Trailside Camp: Camping is permitted anywhere beyond 200 ft. of roads and a minimum of 100 ft. from lakes, streams or other wetlands. Maximum party size is limited to 12 persons.

Sunrise developed area: a minimum distance of 300 feet from buildings. No camping is permitted within 100 feet of streams, lakes, or other wetlands. Maximum party size is limited to 12 persons.

Camps Muir and Schurman and Emmons Flat: Camping is permitted in the designated areas at Camps Muir, and Schurman, and Emmons Flat. Maximum party size is limited to 12 persons.

Other Non-Wilderness areas: Camping is permitted beyond 200 ft. of roads and a minimum of 100 ft. from lakes, streams and other wetlands. Maximum party size is limited to 12 persons. Backcountry permits are required.

From October 1 through May 31 when snow depth exceeds five feet camping is permitted with a Backcountry Permit at Paradise:

Paradise area (WPAR): Camping is permitted a minimum distance of 300 feet from buildings. No camping is permitted within 100 feet of streams, lakes, or other wetlands. Restroom facilities are available at the Paradise Visitor Center. Groups larger than 12 persons must camp between 300 ft. and 600 ft. of the public restrooms and are required to use restrooms for disposing human waste. Groups of 12 persons or less may camp beyond 300 feet of buildings and should use minimum impact techniques for disposing human wastes.

Restrictions on use may be amended based on sanitation concerns, damage to natural resources or success of rehabilitation or natural recovery of impacted areas. Climbers may be denied permission to use popular routes if natural resources are threatened. Users may be requested to show field rangers their permit at any time. Permit requirements will be enforced.

Annual statistics will be compiled from permit data in order to determine patterns of use.

Impacts to natural resources will be monitored using methods as described in the Wilderness Plan. Use of non-Wilderness backcountry areas will be monitored for effects on Wilderness values and natural resources.

Campfires

Wood and charcoal fires are permitted only in the frontcountry campgrounds in accordance with regulations as noted in Attachment 1.

Stock

Stock are permitted only on the Tipsoo Lake trail in this zone. All other stock use is limited to Wilderness areas noted in Appendix E of the Wilderness Plan.

Day-Use (No Camping Zones)

The following areas are designated for day use only when the Sunrise road is open; from June 1 through September 30 and any other time of the year when snow depth is less than two feet:

Burroughs Mountain, Sunrise trails (areas both in Wilderness and non-wilderness, see Fig. 1).

The following area is designated for day use only from June 1 through September 30 and when snow cover is less than five feet:

Paradise area (see Fig. 2)

The following area is designated for day use only, year-round:

Ghost Lake, Klickitat Creek

Trails

Type A, B and C trails exist within this zone and will be maintained according to standards outlined in the Trails Management Handbook. Refer to the Paradise Meadows Plan for maintenance of trails in this area. No trails will be permitted where they threaten adjacent aquatic resources, sensitive vegetation or wildlife habitat, or rare, threatened or **endangered** species.

Miscellaneous items such as abandoned telephone lines, insulators, aircraft wreckage, trail construction materials and other items will be removed as park personnel and funding permit. Social trails and old roadbeds will be obliterated and restored to natural conditions. Trail and camp **construction** material **will** not be stockpiled for more than two years.

Inventories are being conducted to document trail impacts and measure vegetation recovery rates as well as to **assess** long-term changes in native plant communities. Refer to the **Paradise** Meadows Plan for management and restoration of specific trails in this area.

Endangered, Threatened and Rare Species

Visitor use will not be allowed to compromise protection of **endanger&**, threatened and rare species. There will be no loss or threats to rare plants as a result of visitor use. **Additional** baseline **inventories** and long-term monitoring programs are needed to determine the presence of endangered, threatened and rare animal and plant species in this zone.

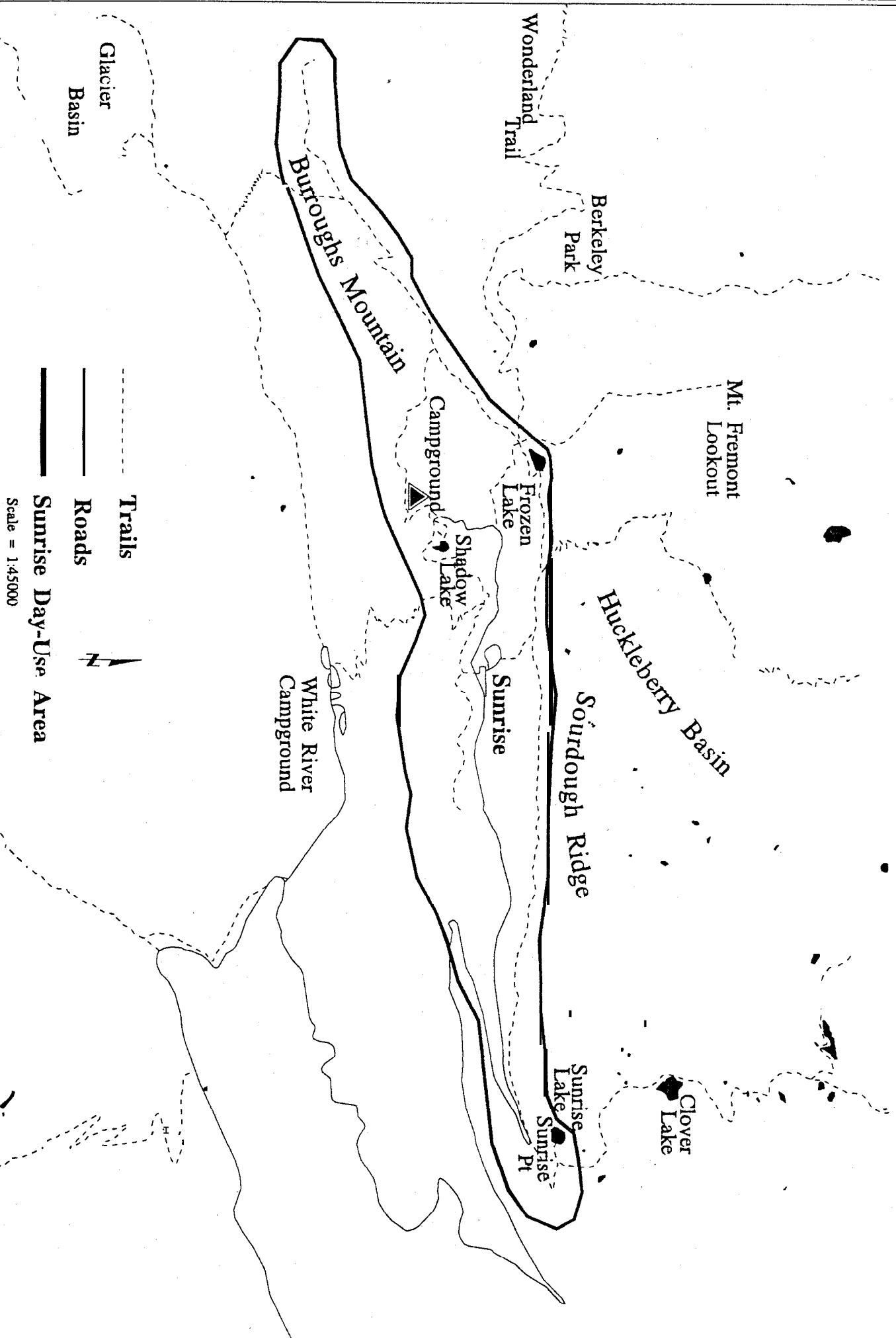
Exotic Plant Species

Exotic plant species will be removed from this zone in accordance with integrated pest management policies and under the guidance of the park Botanist.

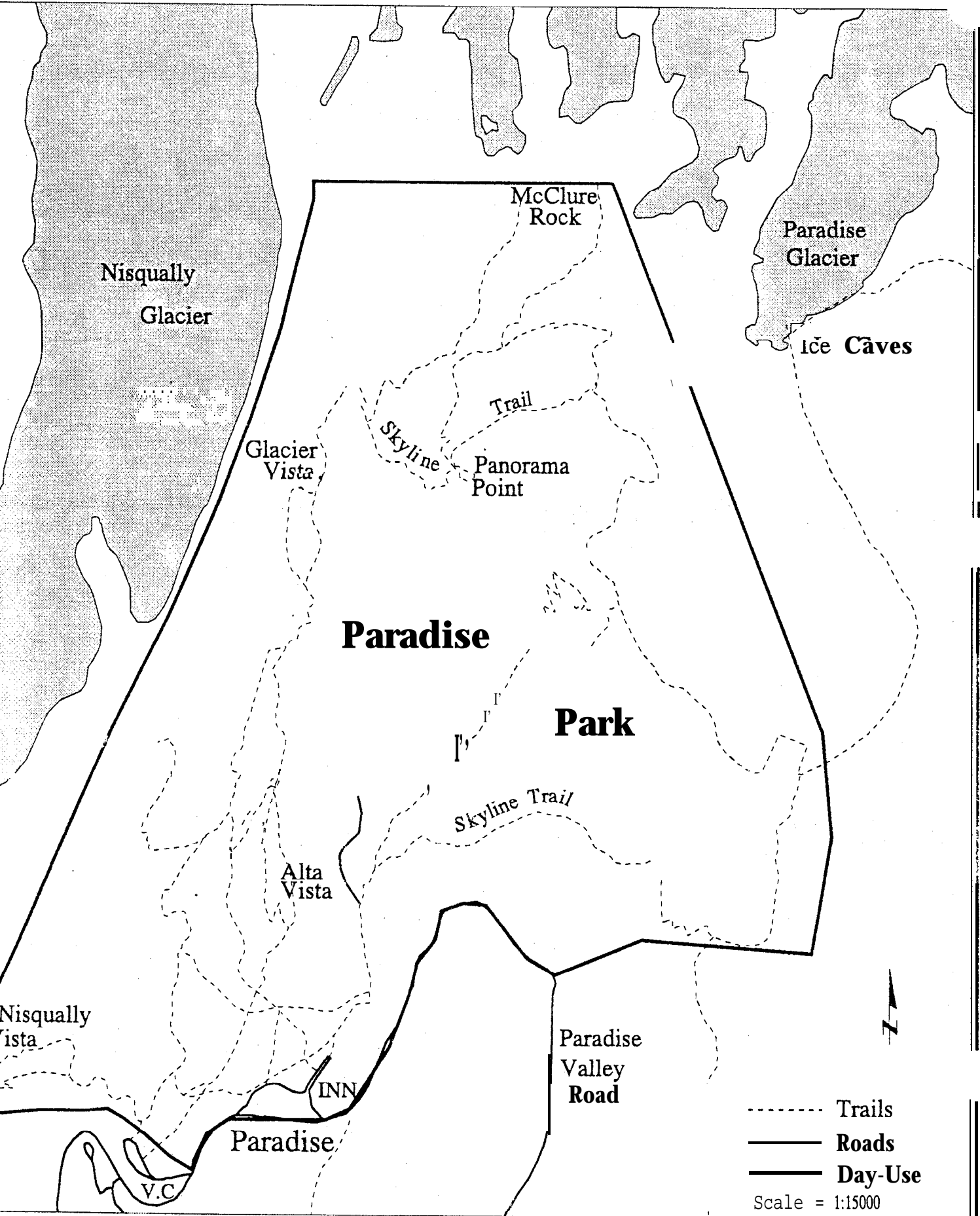
Public Education and Interpretation

The park Division of Interpretation is responsible for developing and disseminating information on recreational use in the park and promoting public understanding of park values and ethics to encourage wise use of the area.

Sunrise Day-Use Area




Paradise Day-Use Area




CAMP'GROUND REGULATIONS

MOUNT RAINIER NATIONAL PARK


welcome to Mount Rainier National Park. Your cooperation in helping to preserve the natural features and facilities is needed.




Only one CAMPING UNIT (persons living in the same household or travelling in the same vehicle) per campsite is permitted. Maximum of one vehicle plus trailer and two tents per site or as otherwise designated. Ask a ranger about parking extra vehicles. Camping is limited to no more than 14 DAYS.




Keep FIRES small and within the closed grating provided and leave no trash in the grate. To preserve the forest integrity collection of WOOD for fires is NOT permitted, except from riverbeds at Sunshine Point and Ipsut Creek Campgrounds, where dead and down wood may be collected.




Dogs, cats and other PETS are welcome but must be caged, leashed, or otherwise under physical restrictive control at all times. Pets are NOT permitted in amphitheaters, buildings, on trails, or in other areas outside the campground or away from roadways.




In order to preserve the NATURAL FEATURES around you, driving nails into trees and ditching around tents is NOT permitted. Likewise, for your safety, wild animals must be left alone. Feeding them human foods can cause digestive problems and result in their deaths.



All VEHICLES (cars, trucks, RV's tent-trailers and utility trailers) must park on the gravel or paved area of your site and NOT beyond the barriers. If you are leaving your vehicle for more than 24 hours, report your intentions to the campground ranger so it is not considered stolen or abandoned property.



BICYCLES and MOTORBIKES may be operated in the campground on the roadways only. Travel on trails with bikes and the use of SKATEBOARDS is NOT permitted in the park.



To insure adequate SANITATION, use restroom for their intended purposes. RV sink drains may empty into containers outside the vehicle but these must be emptied into service sinks or toilets only. Please do NOT use water fountains or spigots for cleaning purposes.



Please respect QUIET HOURS, which must be maintained between 10 pm and 6 am

Questions about the park or its regulations should be directed to a ranger in the area.

HEL? PREVENT THEFTS -- PROTECT YOUR VALUABLES.
FOLLOW INSTRUCTIONS POSTED ON BULLETIN BOARDS.

SNOWMOBILING
IN MOUNT RAINIER NATIONAL PARK

SNOWMOBILE REGULATIONS

"snowmobile" is defined as a self-propelled vehicle weighing not more than 1000 lbs., designed for travel on snow, driven by track(s), and steered by ski(s). Wheeled off-road vehicles are therefore not permitted on snowmobile routes.

SNOWMOBILES ARE PERMITTED ON DESIGNATED ROADWAYS ONLY, WHEN SUCH ROADWAYS ARE CLOSED BY SNOW TO NORMAL TRAFFIC. DO NOT ATTEMPT TO TRAVEL CROSSCOUNTRY, ON TRAILS, OR ON DESIGNATED ROADS.

SNOWMOBILES MUST BE PROPERLY REGISTERED IN ACCORDANCE WITH STATE LAW.

SNOWMOBILES MUST BE EQUIPPED WITH BRAKES IN GOOD WORKING ORDER.

SNOWMOBILES MUST EXHIBIT A LIGHTED WHITE HEADLIGHT AND RED TAILLIGHT FROM ONE-HALF HOUR AFTER SUNSET TO ONE-HALF HOUR BEFORE SUNRISE, OR WHEN PERSONS AND VEHICLES ARE NOT EASILY VISIBLE FOR A DISTANCE OF 500 FEET.

THE FOLLOWING ACTS ARE PROHIBITED

- OPERATING A SNOWMOBILE THAT MAKES EXCESSIVE NOISE
- RACING OR OPERATING A SNOWMOBILE IN EXCESS OF 45 MPH.
- OPERATION OF A SNOWMOBILE BY A PERSON UNDER THE AGE OF 16 UNLESS SUPERVISED WITHIN LINE OF SIGHT BY A RESPONSIBLE PERSON 21 YEARS OF AGE OR OLDER.
- OPERATION OF A SNOWMOBILE BY A PERSON UNDER THE AGE OF 12 UNLESS ACCOMPANIED ON THE SAME MACHINE BY A RESPONSIBLE PERSON 21 YEARS OF AGE OR OLDER.
- TOWING OF PERSONS ON SKIS, SLEDS, OR OTHER DEVICES BY A SNOWMOBILE.

WHERE TO GO

There are four roadway areas within the park which have been designed for snowmobile use. Use your machines only on these roadways:

1. WEST SIDE ROAD - Snowmobile travel is permitted from the junction of the West Side Road with the Nisqually-Longmire Road to Round Pass, but not north beyond Round Pass. Be wary of a large avalanche track at Dry Creek, where one first comes into an open area at the base of Mount Rainier.
2. COUGAR ROCK CAMPGROUND - Snowmobile travel is permitted throughout the campground on the unplowed roads.
3. STEVENS CANYON ROAD - The road is usually closed at the Ohanapecosh or Stevens Canyon junctions with Hwy. 123. The unplowed road is open to snowmobiles from the road end 10 miles to Box Canyon, where a highway tunnel provides a sheltered picnic spot. Travel beyond Box Canyon is prohibited due to avalanche hazard.
4. WHITE RIVER AREA - Snowmobiling is permitted from the north park boundary, on Highway 410, southward to the junction of the White River-Sunrise Road, and then west on that road to Whit2 River Campground. Do not travel by snowmobile beyond the campground road junction toward Sunrise! Likewise, snowmobile travel is prohibited south on Highway 410 from the junction of the White River-Sunrise Road.

REGISTRATION AND SAFETY

No registration is required but let Rangers or others know your plans. STAY ALERT FOR POSSIBLE AVALANCHE DANGER on obvious avalanche tracks as well as all steep areas. Check with a Ranger for current avalanche forecasts.

Snowmobile Use Areas

11

<---- Round Pass (1)

Dry Creek

Avalanche Danger

Mt. Rainier
Park Boundary

West
Side
Road

Nisqually
Entrance

Park
Here

Longmire 5 Miles

(2) Cougar Rock Campground

Paradise
8 miles

Entire Campground *Open*
for Snowmobile Use

Nisqually Entrance 8 miles

(3) Stevens Canyon Road

Snowmobiles Prohibited
Beyond Tunnel

Road Sat
No Snowmobiles

Backbone Ridge

Avalanche
Danger

Stevens
Canyon
Road

Okanapekos
Ranger Station
(Parking)

HWY 123

HWY 12

(4) White River Area

NOTE: Snowmobiles are Prohibited
on the Sunrise Road Beyond the
White River Campground Wye and
South of Hwy 410 White River Road
Junction.

Park Boundary

Parking

HWY 410

Sunrise

No
Snowmobiling

White River
Campground

White River
Ranger Station

Avalanche
Danger

No Snowmobiles

APPENDIX B

BACKCOUNTRY PERMIT SYSTEM ZONES
MOUNT RAINIER NATIONAL PARK

APPENDIX B

BACKCOUNTRY PERMIT SYSTEM ZONES MOUNT RAINIER NATIONAL PARK

ALPINE ZONES

Group size for camping is limited to 12 persons for camping on snow and ice, five when camping on bareground. No camping is permitted in vegetated areas. No camping is permitted within one-quarter mile of Type A or B trails, roads or other designated No Camping areas.

| CODE NAME | NUMBER OF PERSONS OR REMARKS PARTIES PERMITTED |
|----------------------------|---|
| ACAR CARBON GLACIER ALPINE | 3 parties |
| ACCH CAMP HAZARD ALPINE | unlimited |
| ACOL COLONADES ALPINE | 2 parties |
| ACRE CRESCENT LAKE | 2 parties |
| ACTH THUMB ROCK ALPINE | unlimited |
| ADIS DISAPPOINTMENT CLEAV | unlimited |
| AE/W EMMONS/WINTHROP | unlimited |
| AEMM EMMONS FLAT | unlimited non Wilderness |
| AGOA GOAT ISLAND MOUNTAIN | 2 parties |
| AING INGRAHAM FLATS | 36 persons total |
| AINT INTER GLACIER | unlimited |
| AKAU KAUTZ ALPINE | unlimited |
| ALIT LITTLE TAHOMA | 2 parties |
| AMOT MOTHER MOUNTAIN | 2 parties |
| AMOU MOUNT RUTH | 2 parties |
| AMUI MUIR SNOW FIELD | 36 persons total |
| ANIS NISQUALLY ALPINE | unlimited |
| AOLD OLD DESOLATE | 2 parties |
| APTA PTARMIGAN RIDGE | 3 parties |
| ASAR SARVENT ALPINE | 1 party |
| ASUM SUMMIT | unlimited |
| ATOK TOKALOO SPIRE | 3 parties |

TRAILSIDE CAMPS

Camping is permitted only in designated sites. Group size for camping is limited to five persons for individual sites and 12 persons for group sites.

| CODE | NAME | NUMBER OF INDIVIDUAL SITES | NUMBER OF GROUP SITES | REMARKS |
|------|----------------------|----------------------------|-----------------------|-----------------|
| BCBP | BERKELEYPARK | Four | Zero | |
| BCCC | CAMP CURTIS | Five | Zero | |
| BCCM | CAMP MUIR | 110 persons total | | Non-Wilderness |
| BCCR | CARBON RIVER | Four | Zero | |
| BCCS | CAMP SCHURMAN | 35 persons total | | Non-Wilderness |
| BCCV | CATARACT VALLEY | Six | One | |
| BCDC | DICK CREEK | Two | Zero | |
| BCDD | DEVIL'S DREAM | Seven | One | |
| BCDL | DICK'S LAKE | One | Zero | |
| BCDR | DEER CREEK | Three | Zero | Stock Permitted |
| BCER | EAGLE'S ROOST | Seven | Zero | |
| BCFC | FIRE CREEK | Three | One | |
| BCFL | FOREST LAKE | One | Zero | |
| BCGB | GLACIER BASIN | Five | One | |
| BCGC | GRANITE CREEK | Two | Zero | |
| BCGL | GOLDEN LAKES | Five | One | |
| BCIB | INDIAN BAR | Three | One | |
| BCKP | KLAPATCHE PARK | Four | Zero | |
| BCLC | LOWER CRYSTAL LAKE | Two | Zero | |
| BCLE | LAKE ELEANOR | Three | One | |
| BCLG | LAKE GEORGE | Five | One | |
| BCMC | MAPLE CREEK | Four | One | |
| BCML | MYSTIC CAMP | Seven | Two | |
| BCMR | MOWICH RIVER | Seven | One | Stock Permitted |
| BCNC | NICKEL CREEK | Three | One | |
| BCNP | NORTH PUYALLUP CAMP | Three | One | Stock Permitted |
| BCOC | OLLALIE CREEK | Two | One | |
| BCPA | PARADISE WALK IN | Three | Zero | Non-Wilderness |
| BCPC | PYRAMID CREEK | Two | Zero | |
| BCPR | PARADISE RIVER | Three | One | |
| BCRC | REDSTONE CAMP | One | one | |
| RCSC | SUMMERLAND CAMP | Five | On: | |
| BCSL | SNOW LAKE | Two | Zero | |
| BCSP | SOUTH PUYALLUP RIVER | Three | One | |
| BCSR | SHRINER'S PEAK | Three | Zero | |
| BCSW | SUNRISE | Eight | Two | Non-Wilderness |
| BCTC | TAMANOS CREEK | Four | One | |
| BCTL | THREE LAKES | Two | One | Stock Permitted |
| BCUC | UPPER CRYSTAL LAKE | Two | Zero | |
| BCUP | UPPER PALISADES LAKE | Two | Zero | |
| BCYC | YELLOWSTONE CLIFFS | Two | Zero | |

CROSSCOUNTRY ZONES

Group size for camping in crosscountry zones is limited to five persons. No camping with one-quarter mile of Trail Zone, roads, or other designated No Camping areas, or within 100 ft. of surface waters.

| CODE NAME | NUMBER OF PARTIES PERMITTED |
|---------------------------|-----------------------------------|
| XALK ALKI CREST | Two |
| XBUR BURNT PARK | Two |
| XCAR CARBON RIVER FOREST | unlimited |
| XCHE CHENUIS LAKES | Two |
| XCOW COWLITZ PARK | Three |
| XCRY CRYSTAL MOUNTAIN | Two |
| XCUR LOWER CURTIS RIDGE | Two |
| XDEA DEADWOOD LAKES | Two |
| KEYS ELYSIAN FIELDS | Two |
| XFRYS FRMNGPAN | One |
| XGOV GOVE PARK | Two |
| XGRA GRAND PARK | Three |
| XGRE GREEN PARK | Two |
| XGVR GOVERNORS RIDGE | One |
| XHUC HUCKLEBERRY PARK | Two |
| XMIN MINERAL MOUNTAIN | Three |
| XMIS MIST PARK | Two |
| XNIS NISQUALLY FOREST | unlimited |
| XNOR NORTHERN LAKES | Three |
| XOHA OHANAPECOSH PARK | Three |
| XPAC PACIFIC CREST FOREST | unlimited |
| XPAL LOWER PALISADES | Two |
| XPYR PYRAMID PEAK | Five |
| XSEA SEATTLE PARK | Two |
| XSKY SKYSCRAPER MOUNTAIN | Two |
| XSLI SLIDE MOUNTAIN | Three |
| XSOU SOUTHERN SPRAY PARK | Two |
| XSTE STEVEN'S RIDGE | Three |
| XSUN SUNSET PARK | Three |
| XTAM TAMANOS MOUNTAIN | One |
| XTAT TATOOSH RANGE | Five |
| XTYE TYEE PEAK | Two |
| XVER VERNAL PARK | Two |
| XWHI WHITE RIVER PARK | Three |

WINTER ZONES

Between October 1 and May 31 when snow depth exceeds two feet, group size is limited to 12 persons and camping is permitted 200 feet from roads (plowed or snow-covered), in all camps and zones as noted above, and in the following zones:

| CODE NAME | NUMBER OF PARTIES PERMITTED | REMARKS |
|------------------------------|-----------------------------------|---------|
| WREF REFLECTION LAKES WINTER | unlimited | |
| WMAZ MAZAMA RIDGE WINTER | unlimited | |
| WVAN VAN TRUMP PARK WINTER | Two parties | |
| WICE ICE CAVES BASIN WINTER | unlimited | |

Between October 1 and May 31 when snow cover exceeds five feet camping is permitted in the Paradise area a minimum of 300 feet from buildings. Groups larger than 12 persons must camp between 300 and 600 feet from restrooms and are required to use them or provide for removal of their human wastes. Group size is limited to 12 persons when camping beyond 300 feet of restrooms.

| CODE NAME | NUMBER OF PARTIES PERMITTED |
|---------------------------|-----------------------------------|
| WPAR PARADISE WINTER AREA | unlimited |

NO CAMPING ZONE

The following camping closure applies between June 1 and September 30 and when snow cover is less than five feet:

Muir Fellfields: camping is prohibited anywhere on bareground and vegetation within the boundaries of the Muir Snowfield between Pebble Creek and Anvil Rock. (Camping is permitted only on permanent snow or ice. Group size is limited to 12 persons.)

The following camping closures apply between June 1 and September 30 and when snow cover is less than two feet:

Reflection Lake: within one-quarter mile of the lake.

Louise Lake: within one-quarter mile of the lake.

Ghost Lake/Klickitat Creek: the entire drainage including Ghost Lake (water supply).

Burroughs Mountain: the entire mountain.

Mt. Fremont Fire Lookout: within one-quarter mile of the lookout.

Camping is prohibited within one-quarter mile of Type A and B trails, designated camps and paved and unpaved roads.

Camping is prohibited anywhere within 100 feet of lakes, streams or other wetlands at any time of the year.

Between October 1 and May 31 when snow cover is two feet or more, camping is prohibited within 100 feet of surface waters and 200 feet of road corridor (this applies to plowed or unplowed roads).

MOUNT RAINIER NATIONAL PARK
TRAILHEAD INVENTORY

| CODE | NAME |
|------|----------------------------|
| THBC | BOX CANYON |
| THBK | BUCK CREEK USFS |
| THBL | BENCH LAKE |
| THBR | BACKBONE RIDGE USFS |
| THCA | CARBON RIVER BOUNDARY TR |
| THCC | CYRSTAL CREEK |
| THCD | COWLITZ DIVIDE |
| THCF | COMET FALLS |
| THCH | CHENUIS FALLS |
| THCM | CHAMPION |
| THCP | CHINOOK PASS |
| THCR | COUGAR ROCK |
| THDC | DEER CREEK |
| THEP | EAGLE PEAK |
| THES | EASTSIDE (CAYUSE PASS) |
| THFC | FRMNGPAN CREEK |
| THGL | GREEN LAKE |
| THGO | GOAT LAKE (from USFS land) |
| THGP | GROVE OF THE PATRIARCHS |
| THHC | HUCKLEBERRY CREEK USFS |
| THIC | IPSUT CREEK CAMPGROUND |
| THKC | KAUTZ CREEK |
| THKP | KLAPATCHE POINT |
| THLC | LAUGHINWATER CREEK |
| THLE | LAKE ELEANOR |
| THLO | LONGMIRE- WONDERLAND TR |
| THMC | MOWICH LAKE CAMPGROUND |
| THML | MOWICH LAKE (ALL TRAILS) |
| THNB | N PARK BOUNDARY WINTER |
| THNE | NISQUASLLY ENTRANCE |
| THNF | NARADA FALLS |
| THNP | NORTH PUYALLUP |
| THOC | OLLALIE CREEK |
| THOL | OWYHIGH LAKES (WR RD) |
| THPA | PARADISE (ALL TRAILS) |
| THPK | PINNACLE PEAK |
| THPP | PAUL PEAK |
| THRL | REFLECTION LAKES |
| THRP | ROUND PASS |
| THRR | RAMPART RIDGE |
| THSA | SAINT ANDREWS CREEK |
| THSH | SHRINER'S PEAK |
| THSO | SOUTH PUYALLUP |
| THSP | SUNRISE POINT |
| THSU | SUNRISE (ALL TRAILS) |
| THTC | TAHOMA CREEK |

THTL TIPS00 LAKE (ALL)
THTP TOLMIE PEAK-ISPUT PASS
THWF WEST FORK WHITE RIVER
THWR WHITE RIVER CAMPGROUND
THWS WEST SIDE ROAD JCT

MOUNT RAINIER NATIONAL PARK
TRAIL AND CLIMBING ROUTE CODES

TRAIL CODE TRAIL/ROUTE NAME

| | |
|-----|--|
| CCF | CHEUNIS FALLS |
| CCG | WONDERLAND TRAIL - IPSUT CREEK TO CARBON RIVER |
| CGL | GREEN LAKE |
| CIC | MOWICH LAKE TO IPSUT CREEK |
| CMG | WONDERLAND TRAIL - GOLDEN LAKES TO MOWICH RIVER |
| CML | WONDERLAND TRAIL - CARBON GLACIER TO MYSTIC LAKE |
| CNL | NORTHERN LOOP: CARBON RIVER TO WEST FORK WHITE RIVER |
| CPP | PAUL PEAK |
| CR | CURTIS RIDGE CLIMBING ROUTE |
| CSE | WONDERLAND TRAIL - SPRAY/SEATTLE PARK TO CATARACT |
| CSP | MOWICH LAKE TO SPRAY PARK |
| CTP | TOLMIE PEAK |
| DC | DISAPPOINTMENT CLEAVER CLIMBING ROUTE |
| EW | EMMONS-WINTROP GLACIER CLIMBING ROUTE |
| FF | FWHRER'R FINGER CLIMBING ROUTE |
| GL | GILBRALTER LEDGE CLIMBING ROUTE |
| ID | INGRAHAM DIRECT CLIMBING ROUTE |
| KC | KAUTZ CLEAVER CLIMBING ROUTE |
| KG | KAUTZ GLACIER CLIMBING ROUTE |
| KH | KAUTZ HEADWALL CLIMBING ROUTE |
| LCF | VAN TRUMP PARK (COMET FALLS) |
| LDF | DENMAN FALLS |
| LEK | WONDERLAND TRAIL - EMERALD RIDGE TO KLAPTACHE PARK |
| LEP | EAGLE PEAK |
| LER | WONDERLAND TRAIL - INDIAN HENRY'S TO EMERALD RIDGE |
| LGK | LAKE GEORGE AND GOBBLER'S KNOB |
| LGL | WONDERLAND TRAIL - NORTH PUYALLUP TO GOLDEN LAKES |
| LGO | GOAT LAKE TRAIL |
| LKC | KAUTZ CREEK |
| LKP | SAINT ANDREWS TRAILHEAD TO KLAPATCHE PARK |
| LLI | WONDERLAND TRAIL - LONGMIRE TO INDIAN HENRY'S |
| LML | MIRROR LAKES |
| LMP | MILDRED POINT TRAIL |
| LNF | NARADA FALLS TRAIL (SPUR) |
| LNP | WONDERLAND TRAIL - KLAPTCHEE PARK TO NORTH PUYALLUP |
| LNR | NORTH PUYALLUP RIVER TRIAL |
| LR | LIBERTY RIDGE CLIMBING ROUTE |
| LRP | ROUND PASS TRAIL |
| LRR | RAMPART RIDGE |
| LRS | RAMPART RIDGE TO VAN TRUMP PARK |
| LSP | SOUTH PUYALLUP RIVER |
| LT | LITTLE TAHOMA CLIMBING ROUTE |
| LTC | TAHOMA CREEK |
| LTF | TWIN FIRS |
| LTS | TRAIL OF THE SHADOWS |
| LW | LIBERTY WALL CLIMBING ROUTE |
| LWS | WEST SIDE ROAD (CLOSED PORTION) |

MF MOWICH FACE CLIMBING ROUTE
 NC NISQUALLY/GIB CHUTE CLIMBING ROUTE
 NI NISQUALLY ICEFALL CLIMBING ROUTE
 NS NISQUALLY ICE CLIFFS CLIMBING ROUTE
 OCD COWLITZ DIVIDE VIA NICKEL CREEK
 OET EAST SIDE TRAIL
 OGP GROVE OF THE PATRIARCHS
 OIB WONDERLAND TRAIL - INDIAN BAR TO BOX CANYON
 OLC LAUGHINGWATER CREEK
 OOC OLALLIE CREEK
 OSF SILVER FALLS
 OSP SHRINER PEAK
 PC PUYALLUP CLEAVER CLIMBING ROUTE
 PDC DEAD HORSE CREEK
 PLT PARADISE LAKES
 PMT MORAINE
 PNV NISQUALLY VISTA
 PPG PARADISE GLACIER
 PPP PINNACLE SADDLE
 PPR WONDERLAND TRAIL - REFLECTION LAKE TO NARADA FALLS
 PSC WONDERLAND TRAIL - BOX CANYON TO REFLECTION LAKES
 PSL BENCH LAKE AND SNOW LAKE
 PST SKYLINE
 PT PTARMIGAN RIDGE CLIMBING ROUTE
 SC SUCCESS CLEAVER CLIMBING ROUTE
 SH SUNSET AMPHITHEATRE HEADWALL CLIMBING ROUTE
 SR SUNSET RIDGE CLIMBING ROUTE
 STTR TOKALOO ROCK
 TG TAHOMA GLACIER CLIMBING ROUTE
 WBM BURROUGHS MOUNTAIN
 WCL CRYSTAL LAKES
 WCP CRYSTAL PEAK
 WFL MT. FREMONT LOOKOUT
 WGB GLACIER BASIN
 WGP GRAND PARK
 WH WILSON HEADWALL CLIMBING ROUTE
 WHC HUCKLEBERRY CREEK
 WHL HIDDEN LAKE TRAIL (FROM PALISADES TRAIL)
 WML WONDERLAND TRAIL - MYSTIC LAKE TO SUNRISE
 WNP NACHES PEAK LOOP
 WNT SUNRISE NATURE TRAILS
 WOL OWYHIGH LAKES
 WPC PACIFIC CREST
 WPL PALISADES
 WSI WONDERLAND TRAIL - SUMMERLAND TO INDIAN BAR
 WSR WEST SIDE ROAD (FROM NISQUALLY ROAD TO CLOSURE)
 WST SOURDOUGH RIDGE
 w s u WONDERLAND TRAIL - WHITE RIVER CAMPGROUND TO SUMMERLAND
 WTAP AURORA PEAK
 WTBL BENCH LAKE ACCESS
 WTCL CLIFF LAKE
 WTCR CURTIS RIDGE

WTGL GOLDEN LAKE
WTGS GOAT LAKE SPUR
WTIC ICE CAVES/PARADISE GLACIER
WTIR INDEPENDENCE RIDGE
WTKP KNAPSACK PASS
WTLG LAKE GEORGE SHORE
WTLL LAKE LOUISE ACCESS
WTNB NATURAL BRIDGE
WTNR NISQUALLY RIVER
WTPG PINNACLE GLACIER
WTPP PLUMMER PEAK
WTPY PYRAMID PEAK
WTSa ST. ANDREW'S LAKESHORE
WTSP SUNSET PEAK
WTSS SUNSET SHORT-CUT
WTTT TATOOSH TRAVERSE
WTVT VAN TRUMP PARK
WTWB WEST BOUNDARY
w w WILLIS WALL CLIMBING ROUTE
WWR WONDERLAND TRAIL - SUNRISE TO WHITE RIVER CAMPGROUND

APPENDIX C

WILDERNESS ACT AND WASHINGTON PARKS WILDERNESS ACT

APPENDIX C

Appendix A — The Wilderness Act

Public Law 88-577
88th Congress, S. 4
September 3, 1964

AN ACT

To establish a National Wilderness Preservation System for the permanent good of the whole people, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

Wilderness Act

SHORT TITLE

SECTION 1. This Act may be cited as the "Wilderness Act".

WILDERNESS SYSTEM ESTABLISHED STATEMENT OF POLICY

Sec. 2. (a) In order to assure that an increasing population, accompanied by expanding settlement and growing mechanization, does not occupy and modify all areas within the United States and its possessions, leaving no lands designated for preservation and protection in their natural condition, it is hereby declared to be the policy of the Congress to secure for the American people of present and future generations the benefits of an enduring resource of wilderness. For this purpose there is hereby established a National Wilderness Preservation System to be composed of federally owned areas designated by Congress as "wilderness areas", and these shall be administered for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness; and no Federal lands shall be designated as "wilderness areas" except as provided for in this Act or by a subsequent Act.

(b) The inclusion of an area in the National Wilderness Preservation System notwithstanding, the area shall continue to be managed by the Department and agency having jurisdiction thereof immediately before its inclusion in the National Wilderness Preservation System unless otherwise provided by Act of Congress. No appropriation shall be available for the payment of expenses or salaries for the administration of the National Wilderness Preservation System as a separate unit nor shall any appropriations be available for additional personnel stated as being required solely for the purpose of managing or administering areas solely because they are included within the National Wilderness Preservation System.

78 STAT. 890.
78 STAT. 891.

DEFINITION OF WILDERNESS

(c) A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in this Act an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.

NATIONAL WILDERNESS PRESERVATION SYSTEM—EXTENT OF SYSTEM

Sec. 3. (a) All areas within the national forests classified at least 30 days before the effective date of this Act by the Secretary of Agriculture or the Chief of the Forest Service as "wilderness", "wild", or "canoe" are hereby designated as wilderness areas. The Secretary of Agriculture shall—

(1) Within one year after the effective date of this Act, file a map and legal description of each wilderness area with the Interior and Insular Affairs Committees of the United States Senate and the House of Representatives, and such descriptions shall have the same force and effect as if included in this Act. *Provided, however,* That correction of clerical and typographical errors in such legal descriptions and maps may be made.

(2) Maintain, available to the public, records pertaining to said wilderness areas, including maps and legal descriptions, copies of regulations governing them, copies of public notices of, and reports submitted to Congress regarding pending additions, eliminations, or modifications. Maps, legal descriptions, and regulations pertaining to wilderness areas within their respective jurisdictions also shall be available to the public in the offices of regional foresters, national forest supervisors, and forest rangers.

(b) The Secretary of Agriculture shall, within ten years after the enactment of this Act, review, as to its suitability or unsuitability for preservation as wilderness, each area in the national forests classified on the effective date of this Act by the Secretary of Agriculture or the Chief of the Forest Service as "primitive" and report his findings to the President. The President shall advise the United States Senate and House of Representatives of his recommendations with respect to the designation as "wilderness" or other reclassification of each area on which review has been completed, together with maps and a definition of boundaries. Such advice shall be given with respect to not less than one-third of all the areas now classified as "primitive" within three years after the enactment of this Act, not less than two-thirds within seven years after the enactment of this Act, and the remaining areas within ten years after the enactment of this Act. Each recommendation of the President for designation as "wilderness" shall become effective only if so provided by an Act of Congress. Areas classified as "primitive" on the effective date of this Act shall continue to be administered under the rules and regulations affecting such areas on the effective date of this Act until Congress has determined otherwise. Any such area may be increased in size by the President at the time he submits his recommendations to the Congress by not more than five thousand acres with no more than one thousand two hundred and eighty acres of such increase in any one compact unit, if it is proposed to increase the size of any such area by more than five thousand acres or by more than one thousand two hundred and eighty acres in any one compact unit the increase in size shall not become effective until acted upon by Congress. Nothing herein contained shall limit the President in proposing, as part of his recommendations to Congress, the alteration of existing boundaries of primitive areas or recommending the addition of any contiguous area of national forest lands predominantly of wilderness value. Notwithstanding any other provisions of this Act, the Secretary of Agriculture may complete his review and delete such area as may be necessary, but not to exceed seven thousand acres, from the southern tip of the Gore Range-Eagles Nest Primitive Area, Colorado, if the Secretary determines that such action is in the public interest.

(c) Within ten years after the effective date of this Act the Secretary of the Interior shall review every roadless area of five thousand contiguous acres or more in the national parks, monuments and other units of the national park system and every such area of, and every roadless island within, the national wildlife refuges and game ranges, under his jurisdiction on the effective date of this Act and shall report to the President his recommendation as to the suitability or unsuitability of each such area or island for preservation as wilderness. The President shall advise the President of the Senate and the Speaker of the House of Representatives of his recommendation with respect to the designation as wilderness of each such area or island on which review has been completed, together with a map thereof and a definition of its boundaries. Such advice shall be given with respect to not less than one-third of the areas and islands to be reviewed under this subsection within three years after enactment of this Act, not less than two-thirds within seven years of enactment of this Act, and the remainder within ten years of enactment of this Act. A recommendation of the President for designation as wilderness shall become effective only if so provided by an Act of Congress. Nothing contained herein shall, by implication or otherwise, be construed to lessen the present statutory authority of the Secretary of the Interior with respect to the maintenance of roadless areas within units of the national park system.

(d)(1) The Secretary of Agriculture and the Secretary of the Interior shall, prior to submitting any recommendations to the President with respect to the suitability of any area for preservation as wilderness—

(A) give such public notice of the proposed action as they deem appropriate, including publication in the Federal Register and in a newspaper having general circulation in the area or areas in the vicinity of the affected land;

(B) hold a public hearing or hearings at a location or locations convenient to the area affected. The hearings shall be announced through such means as the respective Secretaries involved deem appropriate, including notices in the Federal Register and in newspapers of general circulation in the

Classification.

Presidential recommendation to Congress.

Congressional approval.

78 STAT. 891.
78 STAT. 892

Report to President.

Presidential recommendation to Congress.

Congressional approval.

Suitability.

Publication in Federal Register.

Hearings.

Publication in Federal Register.

79 STAT 892
78 STAT 893

area: *Provided*, That if the lands involved are located in more than one State, at least one hearing shall be held in each State in which a portion of the land lies;

(C) at least thirty days before the date of a hearing advise the Governor of each State and the governing board of each county, or in Alaska the borough in which the lands are located, and Federal departments and agencies concerned, and invite such officials and Federal agencies to submit their views on the proposed action at the hearing or by no later than thirty days following the date of the hearing.

(2) Any views submitted to the appropriate Secretary under the provisions of (1) of this subsection with respect to any area shall be included with any recommendations to the President and to Congress with respect to such area.

Proposed modification

(e) Any modification or adjustment of boundaries of any wilderness area shall be recommended by the appropriate Secretary after public notice of such proposal and public hearing or hearings as provided in subsection (d) of this section. The proposed modification or adjustment shall then be recommended with map and description thereof to the President. The President shall advise the United States Senate and the House of Representatives of his recommendations with respect to such modification or adjustment and such recommendations shall become effective only in the same manner as provided for in subsections (b) and (c) of this section.

USE OF WILDERNESS AREAS

Sec. 4. (a) The purposes of this Act are hereby declared to be within and supplemental to the purposes for which national forests and units of the national park and national wildlife refuge systems are established and administered and—

16 USC 475
16 USC 528-531

(1) Nothing in this Act shall be deemed to be in interference with the purpose for which national forests are established as set forth in the Act of June 4, 1897 (30 Stat. 11), and the Multiple-Use Sustained-Yield Act of June 12, 1960 (74 Stat. 215).

16 USC 577-577a

(2) Nothing in this Act shall modify the restrictions and provisions of the Shipstead-Nolan Act (Public Law 559, Seventy-first Congress, July 10, 1930; 46 Stat. 1020), the Thyne-Blatnik Act (Public Law 755, Eightieth Congress, June 22, 1948; 62 Stat. 568), and the Humphrey-Thyne-Blatnik-Andersen Act (Public Law 607, Eighty-fourth Congress, June 22, 1956; 70 Stat. 526), as applying to the Superior National Forest or the regulations of the Secretary of Agriculture.

16 USC 577c-577h
16 USC 577b-1
577b-1, 577h

(3) Nothing in this Act shall modify the statutory authority under which units of the national park system are created. Further, the designation of any area of any park, monument, or other unit of the national park system as a wilderness area pursuant to this Act shall in no manner lower the standards evolved for the use and preservation of such park, monument, or other unit of the national park system in accordance with the Act of August 25, 1916, the statutory authority under which the area was created, or any other Act of Congress which might pertain to or affect such area, including, but not limited to, the Act of June 8, 1906 (34 Stat. 225; 16 U.S.C. 432 et seq.); section 3(2) of the Federal Power Act (16 U.S.C. 796(2)); and the Act of August 21, 1935 (49 Stat. 666; 16 U.S.C. 461 et seq.).

39 Stat. 535
16 USC 1 et seq.

41 Stat. 1055
49 Stat. 836

78 STAT 893
78 STAT 894

(b) Except as otherwise provided in this Act, each agency administering any area designated as wilderness shall be responsible for preserving the wilderness character of the area and shall so administer such area for such other purposes for which it may have been established as also to preserve its wilderness character. Except as otherwise provided in this Act, wilderness areas shall be devoted to the public purposes of recreational, scenic, scientific, educational, conservation, and historical use.

PROHIBITION OF CERTAIN USES

(c) Except as specifically provided for in this Act, and subject to existing private rights, there shall be no commercial enterprise and no permanent road within any wilderness area designated by this Act and, except as necessary to meet minimum requirements for the administration of the area for the purpose of this Act (including measures required in emergencies involving the health and safety of persons within the area), there shall be no temporary road, no use of motor vehicles, motorized equipment, or motorboats, no landing of aircraft, no other form of mechanical transport, and no structure or installation within any such area.

SPECIAL PROVISIONS

(d) The following special provisions are hereby made:

(1) Within wilderness areas designated by this Act the use of aircraft or motorboats, where these uses have already become established, may be permitted to continue subject to such restrictions as the Secretary of Agriculture deems desirable. In addition, such measures may be taken as may be necessary in the control of fire, insects and diseases, subject to such conditions as the Secretary deems desirable.

(2) Nothing in this Act shall prevent within national forest wilderness areas any activity, including prospecting, for the purpose of gathering information about mineral or other resources, if such activity is carried on in a manner compatible with the preservation of the wilderness environment. Furthermore, in accordance with such program as the Secretary of the Interior shall develop and conduct in consultation with the Secretary of Agriculture, such areas shall be surveyed on a planned, recurring basis consistent with the concept of wilderness preservation by the Geological Survey and the Bureau of Mines to determine the mineral values, if any, that may be present; and the results of such surveys shall be made available to the public and submitted to the President and Congress.

(3) Notwithstanding any other provisions of this Act, until midnight December 31, 1983, the United States mining laws and all laws pertaining to mineral leasing shall, to the same extent as applicable prior to the effective date of this Act, extend to those national forest lands designated by this Act as "wilderness areas"; subject, however, to such reasonable regulations governing ingress and egress as may be prescribed by the Secretary of Agriculture consistent with the use of the land for mineral location and development and exploration, drilling, and production, and use of land for transmission lines, waterlines, telephone lines, or facilities necessary in exploring, drilling, producing, mining, and processing operations, including where essential the use of mechanized ground or air equipment and restoration as near as practicable of the surface of the land disturbed in performing prospecting, location, and, in oil and gas leasing, discovery work, exploration, drilling, and production, as soon as they have served their purpose. Mining locations lying within the boundaries of said wilderness areas shall be held and used solely for mining or processing operations and uses reasonably incident thereto; and hereafter, subject to valid existing rights, all patents issued under the mining laws of the United States affecting national forest lands designated by this Act as wilderness areas shall convey title to the mineral deposits within the claim, together with the right to cut and use so much of the mature timber therefrom as may be needed in the extraction, removal, and beneficiation of the mineral deposits, if needed timber is not otherwise reasonably available, and if the timber is cut under sound principles of forest management as defined by the national forest rules and regulations, but each such patent shall reserve to the United States all title in or to the surface of the lands and products thereof, and no use of the surface of the claim or the resources therefrom not reasonably required for carrying on mining or prospecting shall be allowed except as otherwise expressly provided in this Act. *Provided*, That, unless hereafter specifically authorized, no patent within wilderness areas designated by this Act shall issue after December 31, 1983, except for the valid claims existing on or before December 31, 1983. Mining claims located after the effective date of this Act within the boundaries of wilderness areas designated by this Act shall create no rights in excess of those rights which may be patented under the provisions of this subsection. Mineral leases, permits, and licenses covering lands within national forest wilderness areas designated by this Act shall contain such reasonable stipulations as may be prescribed by the Secretary of Agriculture for the protection of the wilderness character of the land consistent with the use of the land for the purposes for which they are leased, permitted, or licensed. Subject to valid rights then existing, effective January 1, 1984, the minerals in lands designated by this Act as wilderness areas are withdrawn from all forms of appropriation under the mining laws and from disposition under all laws pertaining to mineral leasing and all amendments thereto.

Mineral leases, claims, etc.

78 STAT. 894
78 STAT. 895

(4) Within wilderness areas in the national forests designated by the Act, (1) the President may, within a specific area and in accordance with such regulations as he may deem desirable, authorize prospecting for water resources, the establishment and maintenance of reservoirs, water-conservation works, power projects, transmission lines, and other facilities needed in the public interest, including the road construction and maintenance essential to development and use thereof, upon his determination that such use or uses in the specific area will better serve the interests of the United States and the people thereof than will its denial; and (2) the grazing of livestock, where established prior to the effective date of this Act, shall be permitted to continue subject to such reasonable regulations as are deemed necessary by the Secretary of Agriculture.

Water resources

(5) Other provisions of this Act to the contrary notwithstanding, the management of the Boundary Waters Canoe Area, formerly designated as the Superior, Little Indian Sioux, and Caribou Roadless Areas, in the Superior National Forest, Minnesota, shall be in accordance with regulations established by the Secretary of Agriculture in accordance with the general purpose of maintaining, without unnecessary restrictions on other uses, including that of timber, the primitive character of the area, particularly in the vicinity of lakes, streams, and portages. *Provided*, That nothing in this Act shall preclude the continuance within the area of any already established use of motorboats.

(6) Commercial services may be performed within the wilderness areas designated by this Act to the extent necessary for activities which are proper for realizing the recreational or other wilderness purposes of the areas.

78 STAT. 895.
78 STAT. 896

(7) Nothing in this Act shall constitute an express or implied claim or denial on the part of the Federal Government as to exemption from State water laws.

(8) Nothing in this Act shall be construed as affecting the jurisdiction or responsibilities of the several States with respect to wildlife and fish in the national forests.

STATE AND PRIVATE LANDS WITHIN WILDERNESS AREAS

Transfer, reservation

78 STAT. 896

SEC. 5. (a) In any case where State-owned or privately owned land is completely surrounded by national forest lands within areas designated by this Act as wilderness, such State or private owner shall be given such rights as may be necessary to assure adequate access to such State-owned or privately owned land by such State or private owner and their successors in interest, or the State-owned land or privately owned land shall be exchanged for federally owned land in the same State of approximately equal value under authorities available to the Secretary of Agriculture: *Provided, however,* That the United States shall not transfer to a State or private owner any mineral interests unless the State or private owner relinquishes or causes to be relinquished to the United States the mineral interest in the surrounded land.

(b) In any case where valid mining claims or other valid occupancies are wholly within a designated national forest wilderness area, the Secretary of Agriculture shall, by reasonable regulations consistent with the preservation of the area as wilderness, permit ingress and egress to such surrounded areas by means which have been or are being customarily enjoyed with respect to other such areas similarly situated.

Acquisition

(c) Subject to the appropriation of funds by Congress, the Secretary of Agriculture is authorized to acquire privately owned land within the perimeter of any area designated by this Act as wilderness if (1) the owner concurs in such acquisition or (2) the acquisition is specifically authorized by Congress.

GIFTS, BEQUESTS, AND CONTRIBUTIONS

SEC. 6. (a) The Secretary of Agriculture may accept gifts or bequests of land within wilderness areas designated by this Act for preservation as wilderness. The Secretary of Agriculture may also accept gifts or bequests of land adjacent to wilderness areas designated by this Act for preservation as wilderness if he has given sixty days advance notice thereof to the President of the Senate and the Speaker of the House of Representatives. Land accepted by the Secretary of Agriculture under this section shall become part of the wilderness area involved. Regulations with regard to any such land may be in accordance with such agreements, consistent with the policy of this Act, as are made at the time of such gift, or such conditions, consistent with such policy, as may be included in, and accepted with, such bequest.

(b) The Secretary of Agriculture or the Secretary of the Interior is authorized to accept private contributions and gifts to be used to further the purposes of this Act.

ANNUAL REPORTS

SEC. 7. At the opening of each session of Congress, the Secretaries of Agriculture and Interior shall jointly report to the President for transmission to Congress on the status of the wilderness system, including a list and descriptions of the areas in the system, regulations in effect, and other pertinent information, together with any recommendations they may care to make.

Approved September 3, 1964.

LEGISLATIVE HISTORY:

HOUSE REPORTS: No. 1538 accompanying H. R. 9070 (Comm. on Interior & Insular Affairs) and No. 1829 (Comm. of Conference).

SENATE REPORT No. 109 (Comm. on Interior & Insular Affairs).

CONGRESSIONAL RECORD:

| | |
|-----------------|---|
| Vol 109 (1963): | Apr. 4, 8, considered in Senate. |
| | Apr. 9, considered and passed Senate. |
| Vol 110 (1964): | July 28, considered in House. |
| | July 30, considered and passed House, amended, in lieu of H. R. 9070. |
| | Aug. 20, House and Senate agreed to conference report. |

PUBLIC LAW 100-668—NOV. 16, 1988

102 STAT. 3961

Public Law 100-668
100th Congress

An Act

To designate wilderness within Olympic National Park, Mount Rainier National Park, and North Cascades National Park Service Complex in the State of Washington, and for other purposes.

Nov. 16, 1988
[S. 2165]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Washington Park Wilderness Act of 1988".

Washington
Park Wilderness
Act of 1988.
16 USC 90 note.

TITLE I-OLYMPIC NATIONAL PARK WILDERNESS

SEC. 101. DESIGNATION.

(a) **WILDERNESS.**—In furtherance of the purposes of the Wilderness Act, (16 U.S.C. 1131 et seq.; 78 Stat. 8901, certain lands in the Olympic National Park, Washington, which- 16 USC 1132 note.

(1) comprise approximately eight hundred and seventy-six thousand six hundred and sixty-nine acres of wilderness, and approximately three hundred and seventy-eight acres of potential wilderness additions, and

(2) are depicted on a map entitled "Wilderness Boundary, Olympic National Park, Washington", numbered 149/60,051A and dated August 1988,

are hereby designated as wilderness and therefore as components of the National Wilderness Preservation System. Such lands shall be known as the Olympic Wilderness.

SEC. 102. WOLF CREEK POWERLINE.

The Secretary is authorized to upgrade, maintain and replace, as necessary, the Wolf Creek underground powerline to Hurricane Ridge: *Provided*, That to the extent practicable, such maintenance and operation shall be conducted in such a manner as to remain consistent with wilderness management.

SEC. 103. PAYMENT TO CLALLAM COUNTY.

There is hereby authorized to be appropriated not to exceed \$155,000 to the Secretary of the Interior to make a payment to the Clallam County Historical Society and Museum of Port Angeles, Washington, to compensate the Society for its possessory interest in the National Park Service Visitor Center, Pioneer Memorial Museum, Olympic National Park, Washington. Upon relinquishment by the Clallam County Historical Society of all interests and use in the facility, the Secretary of the Interior shall make payment to the Clallam County Historical Society and acceptance of payment shall be considered full and just compensation for the Society's participation in the construction of the Pioneer Memorial Museum. Appropriation authorization.

SEC. 104. GENERAL PROVISIONS.

16 USC 256b

(a) MISDEMEANOR PENALTIES.—Section 3 of the Act of March 6, 1942 (56 Stat. 136; 16 U.S.C. 256(b)) is revised by deleting all after the phrase “or situated therein,” and inserting the following: “shall be deemed guilty of a class B misdemeanor in accordance with provisions of title 18 of the United States Code.”.

(b) FORFEITURE OF PROPERTY.—Section 4 of the Act of March 6, 1942 (56 Stat. 135; 16 U.S.C. 256c) is hereby revised to read as follows:

“Sec. 4. All guns, bows, traps, nets, seines, fishing tackle, clothing, teams, homes, machinery, logging equipment, motor vehicles, aircraft, boats, or means of transportation of every nature or description used by any person or persons or organizations within the limits of the park when engaged in or attempting to engage in killing, trapping, ensnaring, taking or capturing such wild birds, fish or animals, or taking, destroying or damaging such trees, plants, or mineral deposits contrary to the provisions of this Act or the rules and regulations promulgated by the Secretary of the Interior shall be forfeited to the United States and may be seized by the officers in the park and held pending prosecution of any person or persons or organization arrested under or charged with violating the provisions of this Act, and upon conviction under this Act of such persons or organizations using said guns, bows, traps, nets, seines, fishing tackle, clothing, teams, horses, machinery, logging equipment, motor vehicles, aircraft, boats, or other means of transportation of every nature and description used by any person or persons or organization, such forfeiture shall be adjudicated as a penalty in addition to the other punishment prescribed in this Act. Such forfeited property shall be disposed of and accounted for by and under the authority of the Secretary of the Interior. *Provided*, That the forfeiture of teams, horses, machinery, logging equipment, motor vehicles, aircraft, boats, or other means of transportation shall be in the discretion of the Court.”.

16 USC 251n

(c) TECHNICAL CORRECTIONS TO BOUNDARIES.—The Act of November 7, 1936 (Public Law 99-635; 100 Stat. 3527) revising the boundaries of Olympic National Park is hereby amended as follows:

(1) In section 1(a)(2) after “48 degrees 23 minutes north and 47 degrees” strike “38” and insert in lieu thereof “34”.

Fish and fishing.

(2) In section 1(a)(2) after “all surveyed and unsurveyed Islands”, insert “, above the point of lowest low tide.”; and at the end of the paragraph, strike “north.” and insert “north: *Provided*, That such lands as are identified in this paragraph shall continue to be open to fishing and to the taking of snellfish in conformity with the laws and regulations of the State of Washington.”.

16 USC 251n
note.

(3) In section 1(b) after “numbered 149/60.030A, sheets 1 through” strike “10” and insert in lieu thereof “9”;

(4) In section 2(a) after “within section 15, township”, strike “15” and insert in lieu thereof “24”;

(5) In section 2(a) after “*Provided, however*, That the Secretary of Agriculture shall” strike “not”; and

16 USC 251n
note.

(6) Section 4 is renumbered as section 5 and a new section 4 is inserted as follows:

“Sec. 4. Effective upon acceptance thereof by the State of Washington, the jurisdiction which the United States acquired over

those lands excluded from the boundaries of Olympic National Park by this Act is hereby retroceded to the State."

SEC. 105. KALALOCH VISITOR CENTER.

The Secretary is directed to complete a study for the location of a year round visitor center in the Kalaloch area of Olympic National Park. Such study shall include the location, size and cost estimates for the design, planning and construction of the visitor center and support facilities. The study shall be submitted to the Committee on Interior and Insular Affairs of the United States House of Representatives and to the Committee on Energy and Natural Resources of the United States Senate by March 1, 1989. The Secretary is authorized to construct such visitor center subject to the appropriation of funds.

TITLE II—NORTH CASCADES NATIONAL PARK SERVICE COMPLEX WILDERNESS

SEC. 201. DESIGNATION.

(a) WILDERNESS.—In furtherance of the purposes of the Wilderness Act (16 U.S.C. 1131 et seq.; 78 Stat. 890), certain lands in the North Cascades National Park, Ross Lake National Recreation Area, and Lake Chelan National Recreation Area, Washington, which—

16 USC 1132
note.

(1) comprise approximately six hundred and thirty-four thousand six hundred and fourteen acres of wilderness, and approximately five thousand two hundred and twenty-six acres of potential wilderness additions; and

(2) are depicted on a map entitled "Wilderness Boundary, North Cascades National Park Service Complex, Washington", numbered 168-60-186 and dated August 1988,

are hereby designated as wilderness and therefore as components of the National Wilderness Preservation System. Such lands shall be known as the Stephen Mather Wilderness.

SEC. 202. HYDROELECTRIC PROJECTS.

Section 505 of the Act of October 2, 1968 (82 Stat. 930; 16 U.S.C. 90d-4) is amended as follows: strike "in the recreation areas", and insert in lieu thereof "in the lands and waters within the Skagit River Hydroelectric Project, Federal Energy and Regulatory Commission Project 553, including the proposed Copper Creek, High Ross, and Thunder Creek elements of the Project; and the Newhalem Project, Federal Energy and Regulatory Commission Project 2705, within the Ross Lake National Recreation Area; the lands and waters within the Lake Chelan Project, Federal Energy and Regulatory Commission Project 537; the Company Creek small hydroelectric project at Stehekin within the Lake Chelan National Recreation Area; and existing hydrologic monitoring stations necessary for the proper operation of the hydroelectric projects listed herein".

SEC. 203. LAND ACQUISITION FOR ADMINISTRATIVE FACILITIES.

Section 301(a) of the Act of October 2, 1968 (82 Stat. 927; 16 U.S.C. 90b) is hereby amended to add a **new** subsection as follows:

"(b) The Secretary is hereby authorized to acquire, with the consent of the owner, lands outside of the authorized boundaries of North Cascades National Park Service Complex for the purpose of

construction and operation of a backcountry information center not to exceed five acres. The Secretary of the Interior is further authorized to acquire with the consent of the owner, lands for the construction of a headquarters and administrative site or sites, for the North Cascades National Park, Ross Lake National Recreation Area, and Lake Chelan National Recreation Area not to exceed ten **acres**. The lands so acquired shall be managed as part of the park."

SEC. 204. AUTHORIZATION OF APPROPRIATIONS.

There are hereby authorized to be appropriated to the Secretary of the Interior such sums as may be necessary to complete the land acquisitions authorized pursuant to section 203 of this Act.

SEC. 205. RENEWABLE NATURAL RESOURCE USE IN RECREATION AREAS.

Section 402(a) of the Act of October 2, 1968 (82 Stat. 928; 16 U.S.C. 90c-1) is hereby amended to read as follows:

"The Secretary shall administer the recreation areas in a manner which in his judgment will best provide for (1) public outdoor recreation benefits and (2) conservation of scenic, scientific, historic, and other values contributing to public enjoyment. Within that portion of the Lake Chelan National Recreation Area which is not designated as wilderness, such management, utilization, and disposal of renewable natural resources anti the continuation of existing uses and developments as will promote, or are compatible with, or do not significantly impair public recreation and conservation of the scenic, scientific, historic, or other values contributing to public enjoyment, are authorized. In administering the recreation areas, the Secretary may utilize such statutory authorities pertaining to the administration of the national park system, and such statutory authorities otherwise available to him for the conservation and management of natural resources as he deems appropriate for recreation and preservation purposes and for resource development compatible therewith. Within the Ross Lake National Recreation Area² the removal and disposal of trees within power line rights-of-way are authorized as necessary to protect transmission lines, towers, and equipment." *Provided*, That to the extent practicable, such removal and disposal of trees shall be conducted in such manner as to protect scenic viewsheds."

SEC. 206. MINERAL RESOURCE USE IN RECREATION AREAS.

Section 402(b) of the Act of October 2, 1968 (82 Stat. 928; 16 U.S.C. 90c-1b) is hereby amended to read as follows:

"The lands within the recreation areas, subject to • W1 valid existing rights, are hereby withdrawn from all forms of appropriation or disposal under the public land laws, including location, entry, and patent under the United States mining laws, and disposition under the United States mineral leasing laws: *Provided, however*, That within that portion of the Lake Chelan National Recreation Area which is not designated as wilderness, sand, rock and gravel may be made available for sale to the residents of Stehekin for local use so long as such sale and disposal does not have significant adverse effects on the administration of the Lake Chelan National Recreation Area."

PUBLIC LAW 100-668—NOV. 16, 1988

102 STAT. 3965

TITLE III—MOUNT RAINIER NATIONAL PARK WILDERNESS

SEC 301. DESIGNATION.

16 USC 1132
note.

(a) **WILDERNESS.**—In furtherance of the purposes of the Wilderness Act (16 U.S.C. 1131 et seq.; 78 Stat. 890), certain lands in the Mount Rainier National Park, Washington, which—

(1) comprise approximately two hundred and sixteen thousand eight hundred and fifty-five acres of wilderness, and

(2) are depicted on a map entitled "Wilderness Boundary, Mount Rainier National Park, Washington", numbered 105-20,014A and dated July 1988.

are hereby designated as wilderness and therefore as components of the National Wilderness Preservation System. Such lands shall be known as the Mount Rainier Wilderness.

SEC. 302. BOUNDARY ADJUSTMENTS.

16 USC 110c.

Public
information.

(a) **PARK BOUNDARY ADJUSTMENTS.**—The boundaries of the Mount Rainier National Park as established in the Act of March 2, 1899 (30 Stat. 993), as amended; (16 U.S.C. 91-110b), are further revised to add to the Park approximately two hundred and forty acres, and to exclude from the park approximately thirty-one and one-half acres, as generally depicted on the map entitled "Mount Rainier National Park Proposed 1987 Boundary Adjustments", numbered 105-80,010B and dated January 1957, which shall be on file and available for public inspection in the Washington office of the National Park Service, United States Department of the Interior and at Mount Rainier National Park.

(b) **FOREST BOUNDARY ADJUSTMENT.**—The boundaries of the Snoqualmie National Forest and of the Gifford Pinchot National Forest, are hereby revised to include in the Snoqualmie National Forest approximately thirty-one and one-half acres, to exclude from the Snoqualmie National Forest approximately thirty acres, and to exclude from the Gifford Pinchot National Forest approximately two hundred and ten acres, as generally depicted on a map entitled "Mount Rainier National Park Proposed 1987 Boundary Adjustments", numbered 105-80,010B, and dated January 1987, which shall be on file and available for public inspection in the Washington, District of Columbia office of the Forest Service, United States Department of Agriculture and at the Snoqualmie and Gifford Pinchot National Forests.

Public
information.
District of
Columbia.

(c) **ADMINISTRATION OF PARK LAND.**—(1) Federal lands, and interests therein formerly within the boundary of the Snoqualmie National Forest and the Gifford Pinchot National Forest, which are included within the boundary of the Mount Rainier National Park pursuant to this Act are, subject to valid existing rights, hereby transferred to the administrative jurisdiction of the Secretary of the Interior for administration as part of the Park, and shall be subject to all the laws and regulations of the Park.

(2) The Secretary of the Interior is authorized to accept either concurrent or exclusive jurisdiction over lands and waters included within Mount Rainier National Park by this Act. The Secretary shall notify in writing the Governor of the State of Washington of the acceptance of any such jurisdiction ceded to the United States by the State. The existing exclusive Federal jurisdiction, where it exists

102 STAT.3966

PUBLIC LAW 100-668—NOV. 16, 1988

Gifts and
property.

in the Park, shall remain in effect until such time as the Secretary and the Governor shall agree upon the terms and conditions of concurrent legislative jurisdiction for said Park pursuant to section 320(i) of the Act of October 21, 1976 (90 Stat. 2741).

(3) AUTHORIZATION OF LAND ACQUISITION.—The Secretary of the Interior is authorized to acquire from willing sellers by donation, purchase with donated or appropriated funds, exchange, bequest, or otherwise all non-Federal lands, waters, and interests therein included within the boundary of the Mount Rainier National Park pursuant to this Act.

(d) ADMINISTRATION OF FOREST LAND.—(1) Federal lands, and interests therein formerly within the boundary of the Mount Rainier National Park, which are excluded therefrom and are included within the boundaries of the Snoqualmie National Forest pursuant to this Act, are, subject to valid existing rights, hereby transferred to the administrative jurisdiction of the Secretary of Agriculture for administration as part of the Forest, and shall be subject to all the laws and regulations applicable to the National Forest System.

(2) For the purposes of section 7 of the Land and Water Conservation Fund Act of 1965 (78 Stat. 903, as amended; 16 U.S.C. 4601-9), the boundaries of the Snoqualmie National Forest and the Gifford Pinchot National Forest, as modified pursuant to this Act, shall be treated as if they were the boundaries of those national forests on January 1, 1965.

(3) Effective upon acceptance thereof by the State of Washington, the jurisdiction which the United States acquired over those lands excluded from the boundaries of the Mount Rainier National Park by this Act is hereby retroceded to the State.

SEC. 303. PARADISE POWERLINE.

The Secretary is authorized to upgrade, maintain and replace as necessary, the Paradise powerline from Longmire to Paradise. Provided, That to the extent practicable, such maintenance and operation shall be conducted in such a manner as to protect scenic viewsheds.

TITLE IV—GENERAL ADMINISTRATIVE PROVISIONS

(a) ADMINISTRATION.—(1) Subject to valid existing rights, the wilderness areas designated under titles I, II, and III of this Act shall be administered by the Secretary of the Interior in accordance with the provisions of the Wilderness Act governing areas designated as wilderness, except that reference to the Secretary of Agriculture shall be deemed, where appropriate, to be a reference to the Secretary of the Interior, and any reference to the effective date of the Wilderness Act shall be deemed, where appropriate, to be a reference to the effective date of this Act.

(2) Lands designated as potential wilderness additions shall be administered by the Secretary of the Interior insofar as practicable as wilderness until such time as said lands are designated as wilderness. Any lands designated as potential wilderness additions, upon publication in the Federal Register of notice by the Secretary of the Interior that all uses thereon that are inconsistent with the Wilderness Act have ceased or that non-Federal interests in land

Federal
Register,
publication

have been acquired, shall thereby be designated as wilderness and managed accordingly.

(3) Congress does not intend that wilderness areas designated under this Act lead to the creation of protective perimeters or buffer zones around such wilderness areas. The fact that nonwilderness activities or uses can be seen or heard from areas within the wilderness shall not, of itself, preclude such activities or uses up to the boundary of the wilderness area.

(b) MAP AND DESCRIPTION.—(1) As soon as practicable after the effective date of this Act, the Secretary of the Interior shall file maps of the wilderness areas and legal descriptions of its boundaries with the Committee on Energy and Natural Resources of the United States Senate, and the Committee on Interior and Insular Affairs of the United States House of Representatives. Such maps and legal descriptions shall have the same force and effect as if included in this Act, except that correction of clerical and typographical errors in the maps and legal descriptions may be made. Such maps and legal descriptions of the boundaries shall be on file and available for public inspection in the office of the Director of the National Park Service, Department of the Interior, and in the office of the appropriate Superintendent. Public information.

(2) Boundaries adjacent to paved and unpaved roads shall be drawn as narrowly as is practicable to allow for necessary maintenance and repairs to existing roads. Such boundaries should not, in general, exceed two hundred feet from the centerline of paved roads and one hundred feet from the centerline of unpaved roads: *Provided, however*, That larger boundaries may be drawn only as the Secretary deems necessary to exclude from the wilderness existing developments, improvements, and structures adjacent to existing roads, as well as areas needed to maintain and repair existing roads: *Provided further*, That to the extent practicable, undeveloped areas adjacent to all roads shall be managed as if designated as wilderness.

TITLE V—MISCELLANEOUS PROVISIONS

SEC. 501. WILD AND SCENIC RIVERS.

Section 3(a), paragraph (60), of the Wild and Scenic Rivers Act, which designates the Klickitat River in the State of Washington as a component of the National Wild and Scenic Rivers System, is amended to add the following sentence at the end of the paragraph: 16 USC 1271.

"The boundaries of the designated portions of the Klickitat River shall be as generally depicted on a map dated November, 1987, and entitled 'Klickitat National Recreation River, River Management Area: Final Boundary', which is on file in the office of the Chief, Forest Service, Washington, District of Columbia." District of Columbia, 16 USC 1271.

102 STXT. 3968

PUBLIC LAW 100-668—NOV. 16, 1988

SEC 502. RESERVATION OF WATER RIGHTS.

Subject to valid existing rights, within the areas designated as wilderness by this Act, Congress hereby expressly reserves such water rights as necessary, for the purposes for which such areas are so designated. The priority date of such rights shall be the date of enactment of this Act.

Approved November 16, 1988.

LEGISLATIVE HISTORY—S. 2165 (H.R. 4146):

HOUSE REPORTS: No. 100-961 accompanying H.R. 4146 (Comm. on Interior and Insular Affairs).

SENATE REPORTS: No. 100-512 (Comm. on Energy and Natural Resources).

CONGRESSIONAL RECORD, Vol. 134: 1988.

Sept. 26, H.R. 4146 considered and passed House.

Oct. 13, considered and passed Senate, amended. S. 2165 considered and passed Senate.

Oct. 19, S. 2165 considered and passed House.

○

APPENDIX D

OFFICE ORDERS 87-1 AND 79-8

April 16, 1987

OFFICE ORDER NO. 87-1 (Revised 6/25/90)

NPS USE OF MECHANIZED EQUIPMENT AND STOCK
FOR ADMINISTRATIVE ACTIVITIES OTHERWISE NOT PERMITTED

This Office Order establishes the procedures for administrative activities that are otherwise prohibited in Title 36 Code of Federal Regulations (CFR) .

36 CFR section 1.2(e) states: "The regulations contained in Parts 2 through 7 shall not be construed to prohibit administrative activities conducted by the National Park Service, or its agents, in accordance with approved general management and resource management plans, or in emergency operations involving threats to life, property, or park resources." Thus. 36 CFR regulations may be waived for administrative purposes and emergencies.

Policy on authorized activities otherwise prohibited is included below and in the Compendium to 36 CFR. Unless specifically delegated here or in the Compendium, prior approval of the Superintendent is required for administrative activities otherwise prohibited.

Specific Park Policies are:

Wilderness Minimum Tool Guidelines

The use of mechanized equipment affecting Wilderness will adhere to minimum tool guidelines. A written justification will be submitted on the MINIMUM TOOL JUSTIFICATION FORM FOR WILDERNESS (attached) prior to the proposed work. Division Chiefs should identify recurring types of events such as human waste removal from Muir/Schurman, helicopter lift of trail materials except from July 1 through Labor Day, aerial wildlife surveys, aerial photo inventories and emergency operations (SAR and fire). Approved application will be reviewed every three years for appropriateness and consistency. The Chief of Maintenance will be responsible for the review.

For other non-recurring uses of mechanized equipment affecting Wilderness, a MINIMUM TOOL JUSTIFICATION FORM FOR WILDERNESS will be prepared and approved by the Superintendent prior to the proposed event. This form should be attached to all A-70 Aircraft Use Request forms when they are submitted to the Visitor Management Specialist for signature unless previous approval is on record. In that case, simply reference the approval number.

A brief summary narrative of mechanized equipment use affecting Wilderness will be prepared for the Annual Mechanized Equipment Use Report. The Chief of Maintenance is to prepare and submit this report to the Superintendent BY DECEMBER 1, annually, with copy to the park's Wilderness Coordinator. Copies of the approved minimum tool justification should be submitted as attachments to the report.

1. Approval is hereby given for administrative actions, otherwise prohibited, in emergency operations involving threats to human life or limb.
2. Individual employees' entry into closed areas when entry is required in order to perform assigned duties must have the prior approval of the Superintendent on a case-by-case basis.
3. Audio disturbances (chain saws) (36 CFR 2.12 a(2) and (3)) : It is recognized that use of chain saws may be the most efficient method of project accomplishment in certain areas. The discretion for official use of chain saws in frontcountry locations is delegated to project supervisors, when such use is necessary to perform required duties and is deemed more efficient and/or less damaging to the environment or the visitors experience than other methods. The use of chain saws and other mechanized equipment affecting Wilderness will adhere to minimum tool guidelines as noted above.
4. Horses and pack animals (36 CFR 2.16(b)) : It is recognized that stock use may be essential in providing practical transportation of supplies and materials to remote areas. However, such use may create extraordinary impact on areas and trails not constructed to stock use standards. Therefore:
 - park stock use on trails not open to public stock must have the prior approval of the Superintendent, on a project basis. The Chief Ranger and appropriate Area Ranger will be advised beforehand.
 - To minimize area resource damage, stock will not leave the constructed trail tread unless absolutely necessary. Overnight is permitted only in designated trailside camps for stock use.
 - Use the minimum number of stock to transfer supplies and materials not passengers. Riding stock utilized by other than the park packer(s) in areas not open to public riding is not authorized.
5. Aircraft and air delivery (36 CFR 2.17): Such use requires prior approval of the Superintendent. Policy and procedures are outlined in Office Order No. 79-8. Use of aircraft for non-emergency situations is limited to the period before July 1 and after Labor Day, unless approved by the Superintendent.

- 6 Snowmobiles (36 CFR 2.18(c) and 7.5(d)(1)): It is recognized that snowmobiles may be the most efficient means of accomplishing routine or emergency operations. A MINIMUM TOOL JUSTIFICATION FORM will be submitted for the Superintendent's approval for emergency operation in Wilderness. The Superintendent's approval is required for administrative use in other closed areas. Such use will be reported beforehand to the Chief Ranger and appropriate Area Ranger.
- 7 Explosives (36 CFR 2.38(a)): The authority for approval of administrative possession, storage, transportation, and use of explosive materials is delegated to the Superintendent. Such use will comply with applicable federal and state laws. Use of explosives affecting the Wilderness will adhere to minimum tool guidelines noted above.
- 8 Boating on closed waters (36 CFR 3.6): Administrative use of motorized or non-motorized boats on park waters closed to public boating, when such use is necessary to accomplish required duties, is authorized. The Chief Ranger and appropriate Area Ranger will be notified of such use beforehand.
- 9 Group size limitations (36 CFR 7.5(c) (2)): Waiving backcountry camping group size limits for large work parties requires prior approval of the Superintendent.

Impacts to park resources resulting from such activities will be documented according to procedures in the Wilderness Management Plan, using prescribed forms.

Neal G. Guse
Superintendent

Attachment:
Minimum Tool Justification Form for Wilderness

August 6, 1979

OFFICE ORDER NO. 79-8 (Revised 9/9/92)

AIRCRAFT USE/REQUEST POLICY

This Officer Order defines the policy of Mount Rainier National Park on official use of aircraft and procedures to be used when requesting aircraft.

POLICY:

It is recognized that without the use of aircraft in the park, both emergency missions and operational programs would often be adversely affected, sometimes severely. The protection of people and park resources would often be delayed or denied without timely use of aircraft. Aircraft reduces overall time and cost of doing operations on the ground and often reduces or eliminates hazards that would be faced by ground teams without aircraft. At the same time it is recognized that the use of aircraft can have adverse effects upon wildlife and park visitors, especially in wilderness. Park policy is to mitigate negative influences upon visitors while maximizing work efficiency.

Any use of aircraft in the park requires the completion of an A-70, Aircraft Use Request form. Any use of aircraft with the Wilderness, except in emergency operations, will be consistent with minimum tool guidelines, as noted in the Wilderness Management Plan. All aircraft use will be reported in the Annual Mechanized Equipment Use Report.

RECORD KEEPING:

Procurement files original A-70, OAS-23, and DI-1 forms and completes an annual aircraft use report.

DEFINITIONS:

"Use": is defined as the landing in the park (Kautz Creek Heliport excluded) of civilian or military aircraft and/or the carrying of NPS personnel or NPS /Concessioner cargo.

Planned Aircraft Use: - is defined as the pre-planning of a mission of a non-emergency nature involving civilian or military aircraft which is approved at least ten days in advance of the flights. This would include routine supply flights to backcountry and high camps, resource management projects, wildlife observation counts, military/SAR training flights, and management inspections. When the ten day planning period is not feasible because of such unexpected events as a glacial outburst flood, unexpected administrative requests, etc., the Superintendent will consider each request on a case by case basis.

Emergency Aircraft Use: - is defined as the sudden and unexpected need for civilian or military aircraft assistance due to such events as life or limb-threatening personal injuries, structural or wildland fires, searches, natural disasters, illegal incidents, etc.

APPROVAL AUTHORITY:

Planned Aircraft Use:

The Superintendent is the approval authority for all planned aircraft use.

Emergency Aircraft Use:

The Visitor Management Specialist (**VMS**) has approval authority for emergency aircraft use if the Superintendent or Acting can't be reached.

ORDERING PROCESS AND EMPLOYEE RESPONSIBILITIES:

1. REQUESTER: - Restricted to permanent park supervisors who have line authority.
 - A. Planned Aircraft Use:
 - 1- Completes his/her portion of the A-70, AIRCRAFT USE REQUEST.
 - 2- Attaches a "Minimum Tool Justification" which is later reviewed and initialed by the Wilderness Coordinator for flights in Wilderness.
 - 3- Attaches a "**J**ob Safety Analysis" to the A-70. Uses an existing one, if available and applicable. Otherwise, writes a new JSA that is approved by the Safety Officer.
 - 4- Forwards A-70 directly to Aircraft Manager.
 - 5- Upon hearing back from Aircraft Manager about flight arrangements and costs, completes a DI-1 form showing estimated costs and forwards it to his/her Division Chief (Aircraft Manager will send A-70 to Division Chief).
 - B. Emergency Aircraft Use:
 - 1- The "REQUESTER" is usually the District Ranger or Acting.
 - 2- In a timely manner, initiates an A-70, Aircraft Use Request.
 - 3- In a **timely** manner, initiates a Job Safety Analysis (unless one already exists for this type of incident, approved by the Safety Officer and immediately available.)
 - 4- Completes a DI-1 Requisition and forwards to Procurement after getting appropriate approval signatures.
2. AIRCRAFT MANAGER: - Trails Foreman or Superintendent's designee.
 - A. Planned Aircraft Use:
 - 1- Checks with other divisions, concessions, etc., on combining additional flight needs on this request.
 - 2- Completes his/her portion of the A-70, AIRCRAFT USE REQUEST, including a recommendation on type of aircraft to use, estimated number of flights, and estimated costs.

- 3- Contacts Procurement and requests a determination of availability for the appropriate type of aircraft for the proposed date(s).
- 4- Upon hearing from Procurement about aircraft vendor selected, completes his/her portion of A-70 and forwards to the affected Division Chief.
- 5- Selects a Heliport Manager to manage the actual helicopter flights from the heliport.
- 6- Informs Requester of proposed arrangements that have been made, date, ~~time~~, cost per hour, Heliport Manager selected, etc.
- 7- Assures that Heliport Manager initiates OAS-23 form for both civilian and **military** flights and enters MT # (from procurement) on the OAS-23 form for civilian (commercial) flights; completes the OAS-23 by the end of the flights and gives the commercial pilot the blue copy; sends white and yellow copies to Procurement.

B. Emergency Aircraft Use:

No duties. However, the Incident Commander or the VMS will appoint a qualified Heliport Manager who is responsible for such duties as OAS card checks, load calculation checks, flight following, completing OAS-23 forms for both civilian and **military** flights, and forwarding the ~~same~~ to Procurement.

3. DIVISION CHIEF:

A. Planned Aircraft Use:

- 1- Receives DI-1 from Requester and A-70 from Aircraft Manager and reviews all steps taken in the tracking process to this point for appropriateness and completeness. Approves/Dis-approves as indicated.
- 2- Forwards A-70 and attached DI-1 to Superintendent.

B. Emergency Aircraft Use:

No duties. Incident Commander responsible.

4. WILDERNESS COORDINATOR:

A Planned Aircraft Use:

- 1- Assures that "Minimum Tool Justification" has been attached for flights over wilderness. If not, returns to Requester for MTJ.
- 2- If MTJ is attached, reviews it for appropriateness of the flight in wilderness and provides recommendation to Superintendent for or against approval.

B. Emergency Aircraft Use:

No duties during the emergency unless immediately available and time permits. After the emergency, reviews with the Requester the appropriateness of the wilderness intrusion based on information available at the onset of the emergency.

5. SUPERINTENDENT:

A. Planned Aircraft Use:

- 1- Approves or disapproves A-70, Aircraft Use Request.
- 2- Forwards A-70 and DI-1 to Communications Center.

B. Emergency Aircraft Use:

VMS will contact Superintendent or his Acting for approval. The VMS may approve emergency flights if Superintendent or Acting is unavailable (within 10 minutes for MAST flights).

6. COMMUNICATIONS CENTER:

For either Planned Aircraft Use or Emergency Aircraft Use:

- A. Upon receiving the A-70 and attached DI-1 from the Superintendent, contacts the Budget Assistant at Tahoma Woods, gets an MT Number, and enters in onto the approved A-70.
- B. Sends the original A-70 and the original DI-1 to Procurement.
- C. Sends a copy of the A-70 to each of the following:
 - 1) Requester; 2) Division Chief; 3) Aircraft Manager;
 - 4) Communication Center.
- D. Advises Entrance Stations, Visitor Centers, and Ranger Stations of aircraft activity (flight locations).

7. PROCUREMENT:

A. Planned Aircraft Use:

- 1- Based on Aircraft Manager's recommendations and cost factors, selects an appropriate vendor for the type of aircraft needed, and places an order for it with an authorized OAS contractor.
- 2- Informs Aircraft Manager of vendor selected and costs.
- 3- After the flight, and upon receiving the white and yellow copies of the OAS-23 from the Heliport Manager for completed commercial flights, sends the yellow copy and one additional copy to MORA Finance, the white copy to the OAS Office in-Boise, Idaho, sends one additional copy to the Requester, and keeps a final copy at Procurement. OAS-23 paperwork for military aircraft is kept at Procurement for record keeping only, not for payments.

B. Emergency Aircraft Use:

~~Same~~ as step #3 above.

William J. Briggie
Superintendent

Enclosures:
Revised Form A-70

APPENDIX E

PUBIC STOCK USE

Stock Use

**Mount Rainier National Park
National Park Service
U.S. Department of the Interior**

Approximately 100 miles of park trails and four trail side camps are open to stock use. However, Mount Rainier National Park is not often used by stock parties because:

- o due to snow, use of stock is only practical from mid-July through late-September.
- o glacial rivers must be forded. By mid-day in summer such rivers may be raging torrents with tumbling boulders.
- o park trails are rarely level. Stock, like people, become exhausted on the steep climbs and descents.
- o stock is not permitted in most scenic and fragile subalpine meadow areas. Trails open to stock are mostly in wooded areas offering limited views.

STOCK USE REGULATIONS

Pack or saddle stock is defined as horses, mules, burros, or llamas. Dogs are not pack stock.

Parties camping overnight in the backcountry must obtain a free backcountry permit. Permits can be obtained at any Hiker Center or ranger station. Stock must be tied or stabled only at provided hitching rails or corrals.

Stock party size is limited to a maximum combination of 12 people and stock on the Pacific Crest Trail. On other park trails, size limits are a maximum of 5 people/5 stock at individual sites and 12 people/5 stock at group sites.

Stock is not permitted in auto campgrounds, picnic areas, or within 100 yards of trail shelters or backcountry campsites, unless the campsite is a designated stock camp.

Grazing is not permitted in the park. Adequate compact feed must be carried. To prevent the spread of exotic plants, stock should be fed compact feed for at least two days prior to entry into the park.

Stock may be loaded or unloaded at points where designated stock trails cross roadways and adequate parking exists. Stock waste may not be dumped or left in parking areas or along roadways.

Stock is permitted only on roads and trails open to stock use. At no time is stock permitted in crosscountry zones (areas without trails).

AREAS OPEN FOR STOCK USE

W E S T

- o Wonderland Trail from Ipsut Creek campground to North Puyallup stock camp (dismount and lead along the road shoulder at Mowich Lake).
- o North Puyallup Trail from North Puyallup stock camp to Klapatche Point at the north end of the Westside Road.
- o Westside Road (gravel) from Klapatche Point south to Dry Creek (road barricade).
- o Paul Peak Trail from the Mowich Road to Wonderland Trail near North Mowich stock camp.

SOUTH

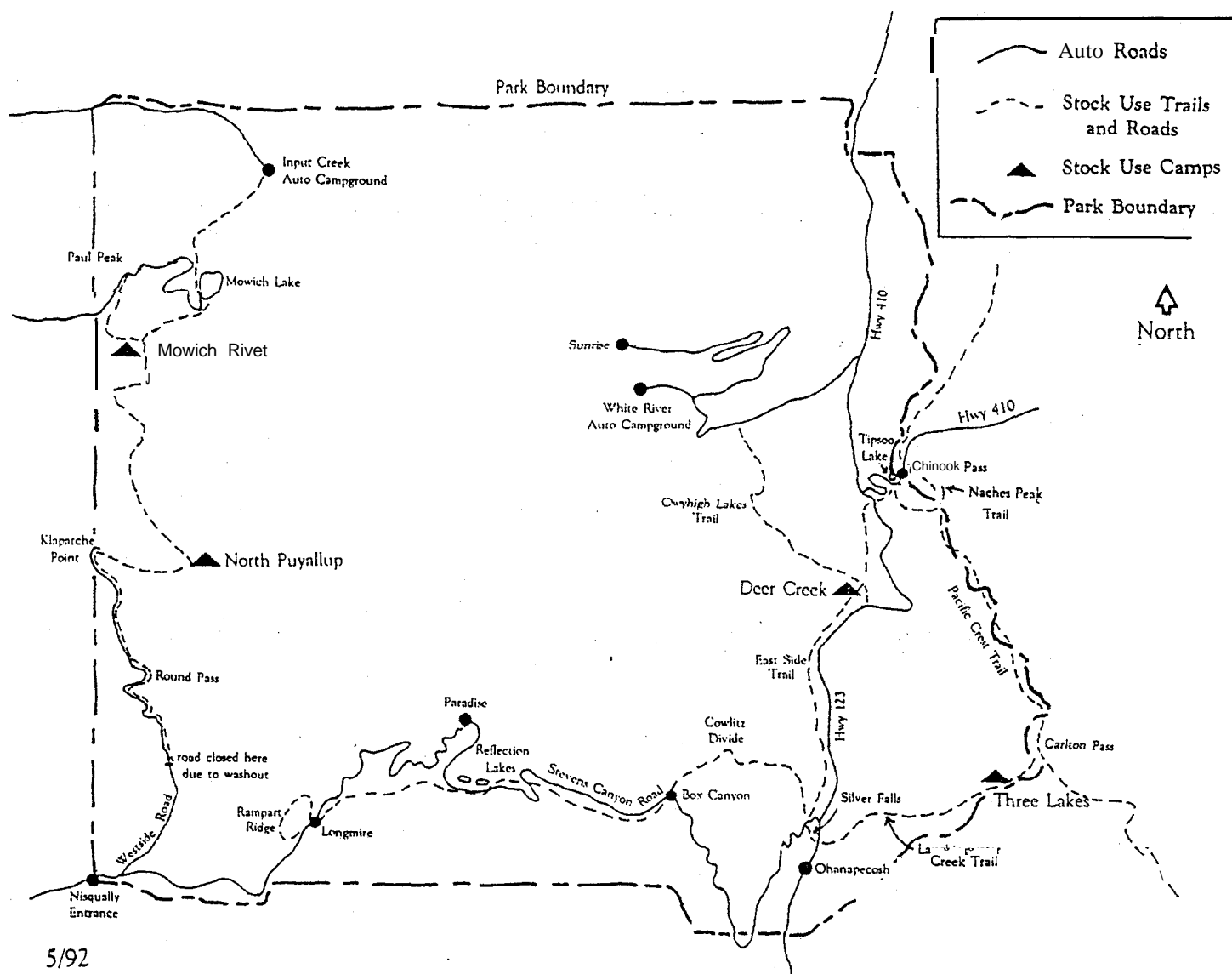
- o Wonderland Trail from Longmire to Box Canyon (along the road shoulder past Reflection Lakes).
- o Rampart Ridge loop trail from Longmire back to Longmire.

EAST

- 0 Pacific Crest Trail along the *east* boundary of the park.
0 Naches Peak Trail from Tipsoo Lake to the Pacific Crest Trail.
0 East Side Trail from Stevens Canyon Road south to Silver Falls loop trail, and along the Laughingwater
0 Creek Trail to Highway 123.
0 Wonderland Trail from Box Canyon to the top of Cowlitz Divide.
0 Cowlitz Divide Trail from the top of Cowlitz Divide to Stevens Canyon Road and Silver Falls loop trail.
0 Laughingwater Creek Trail from Highway 123 to the Pacific Crest Trail near Carlton Pass.
0 Owyhigh Lakes Trail from Highway 123 to White River Road.

For current trail conditions or additional information call (206) 569-2211 ext.33 14 or write Superintendent, Mount Rainier National Park, Tahoma Woods, Star Route, Ashford, WA 98304.

Thank you for being a responsible backcountry visitor, and helping to protect Mount Rainier National Park.



APPENDIX F

MINIMUM TOOL JUSTIFICATION

YR _____ # _____

MOUNT RAINIER NATIONAL PARK
MINIMUM TOOL JUSTIFICATION FORM

COMPLETED BY REQUESTING PARTY:

- 1) One **time** project? Yes _____ No _____
 Recurring? Annually _____ Times per year _____
 Every _____ years
 Emergency? Yes _____ No _____
 Fire _____ SAR _____ Nat. Resources _____

2) Project Description: _____

- 3) Mechanized equipment requested?
 Chain Saw Rock Drill _____
 H e l i c o p t e r Fixed Wing _____
 E x p l o s i v e s Other _____

How will this equipment be used in completion of the task?

Dates & Duration of Use:

Date(s) _____ How long _____

- 4) Describe how task would be accomplished without mechanized equipment: _____

- 5) Cost Comparison: Mechanized \$ _____
 Non-Mechanized \$ _____
 Cost difference results from? _____

- 6) **Will** mechanized equipment use result in resource damage? -
 Explain _____

Will non-mechanized equipment use result in resource damage?
 Explain _____

- 7) Will visitor use be denied/delayed if task is not accomplished? Yes _____ No _____

Length of **time** _____

Reason? _____

Will visitor use be denied/delayed if task is accomplished?

Yes _____ No _____

Length of time _____

Reason? _____

Signature _____

Date _____

COMPLETED BY WILDERNESS COORDINATOR:

8) Is use of mechanized equipment necessary for maintenance of
Wilderness character? _____

9) Describe effects on Wilderness values if mechanized equipment
is used for task: _____

Describe effects on Wilderness values if non-mechanized
equipment is used for task or task is not completed: _____

Recommended _____

Signature _____

Date _____

APPROVED _____

SUPERINTENDENT

DATE _____

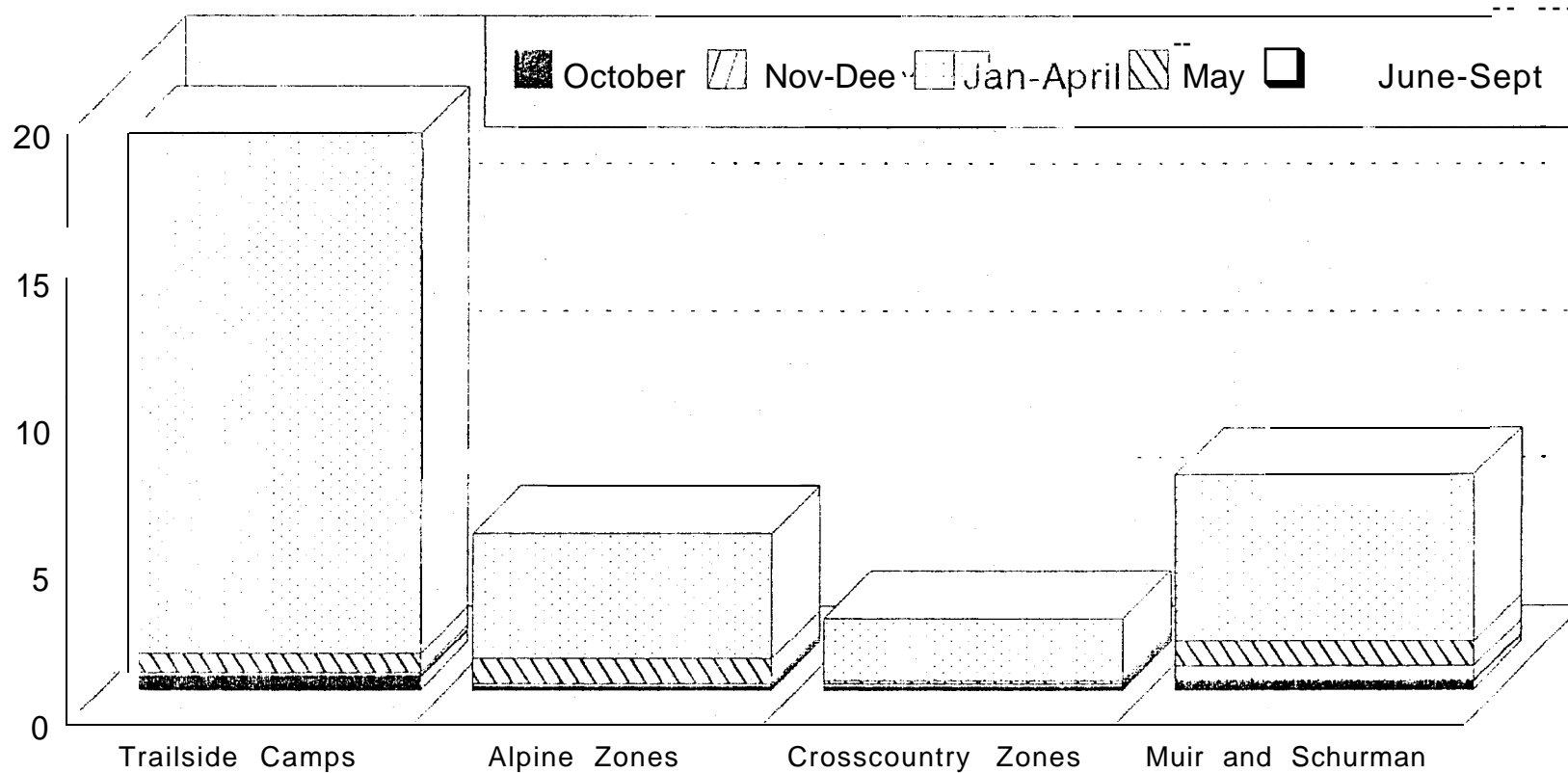
REVISED 1/93

APPENDIX G

OVERNIGHT USE OF BACKCOUNTRY CAMPS AND ZONES

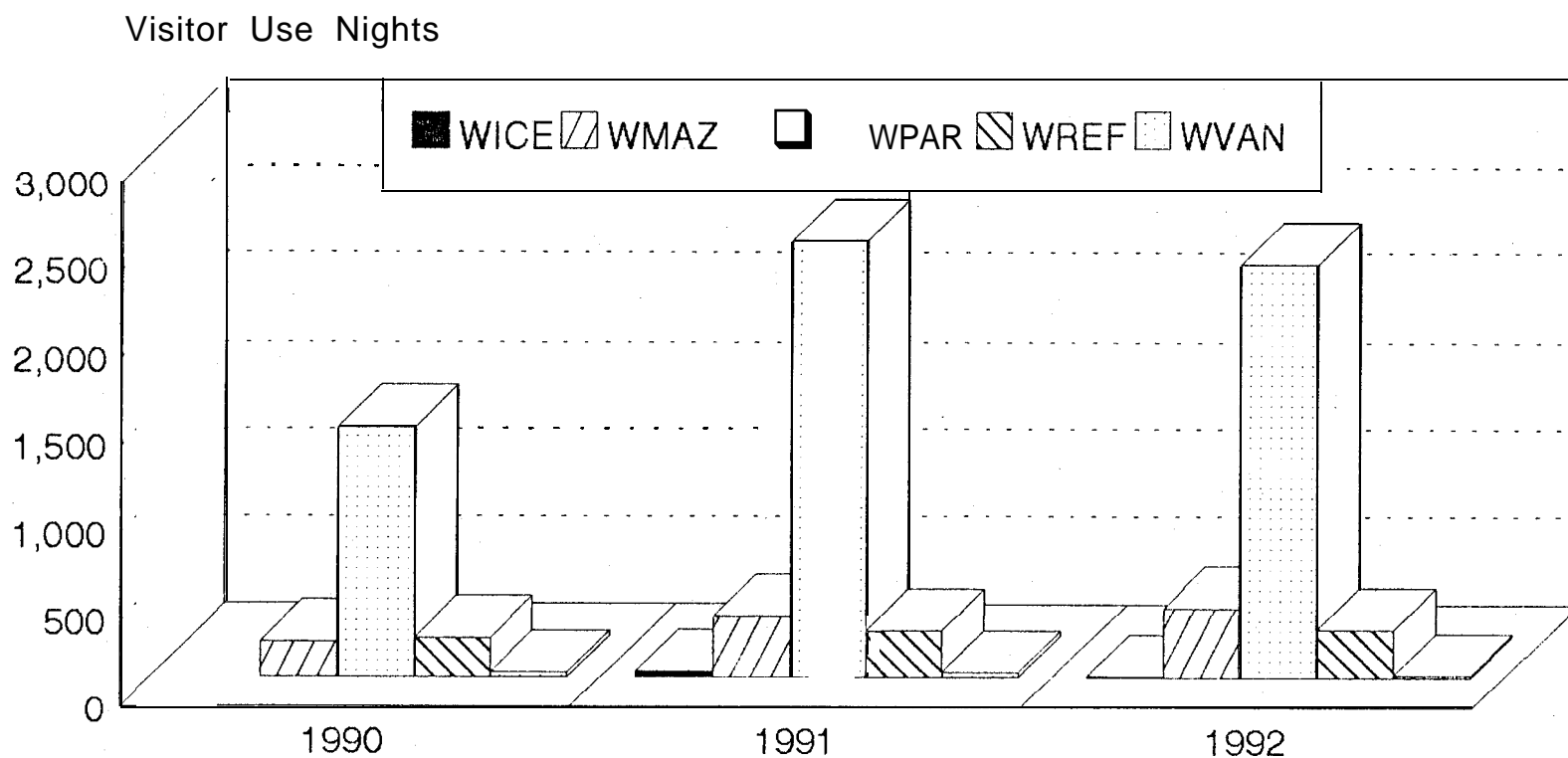
Use by Season 1992

visitor use nights (thousands)



| | | | | |
|-----------|--------|-------|-------|-------|
| June-Sept | 17.632 | 4.226 | 2.067 | 5.648 |
| May | 0.635 | 0.844 | 0.107 | 0.823 |
| Jan-April | 0.131 | 0.118 | 0.116 | 0.476 |
| Nov-Dec | 0.052 | 0.06 | 0.068 | 0.047 |
| October | 0.398 | 0.037 | 0.038 | 0.248 |

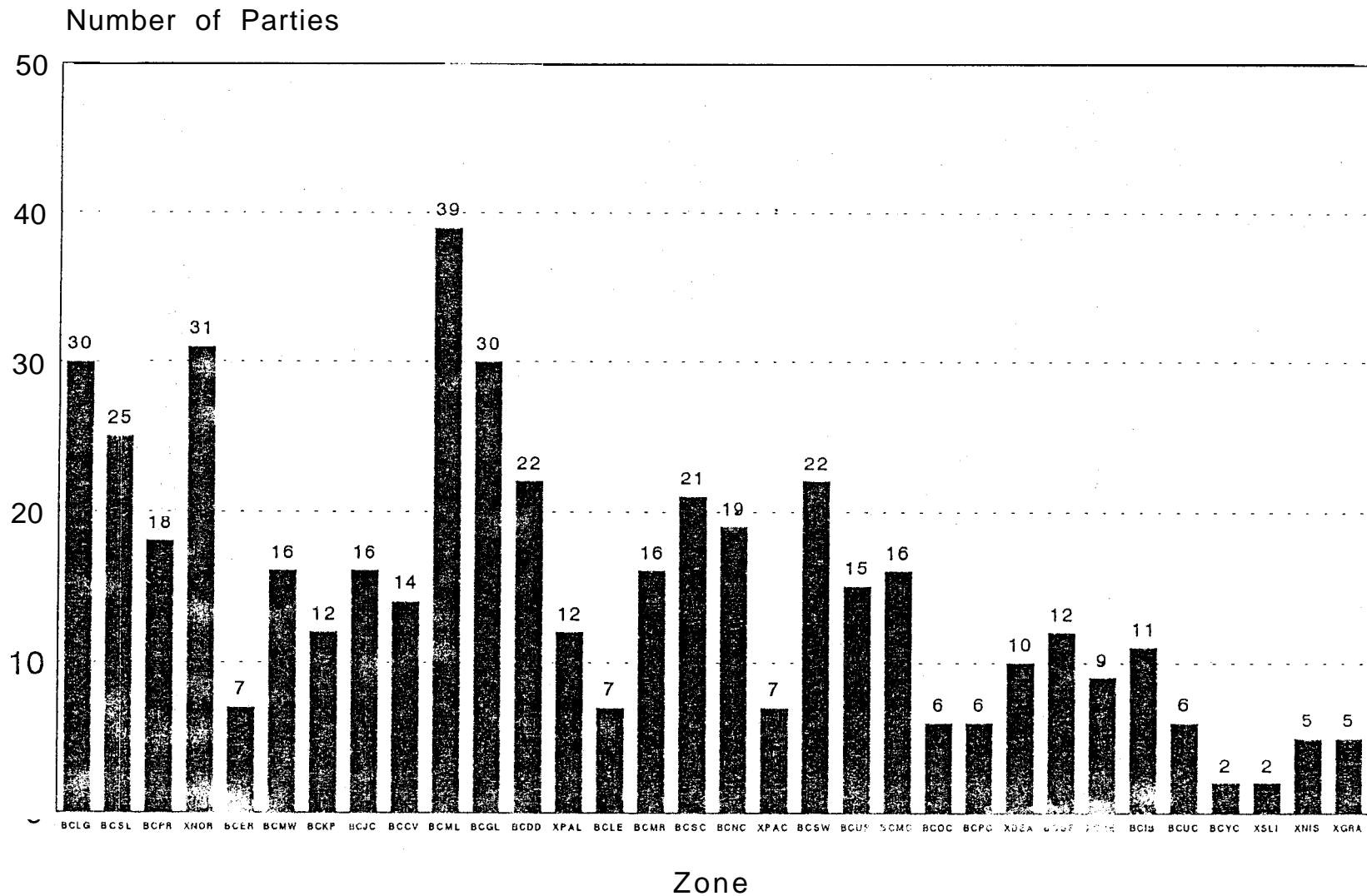
Overnight Use of Winter Zones 1990 - 1992



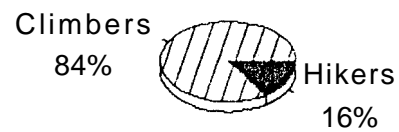
| | | | |
|------|-------|-------|-------|
| WICE | | 36 | 4 |
| WMAZ | 203 | 346 | 401 |
| WPAR | 1,427 | 2,485 | 2,355 |
| WREF | 225 | 269 | 278 |
| WVAN | 25 | 26 | 13 |

Year

Backcountry Zones with Fishing Parties 1992



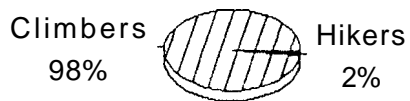
Hiker vs. Climber use in Alpine Areas 1992 (June - September)



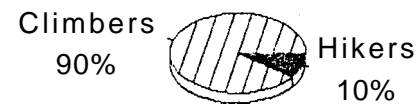
Alpine Zones



Muir

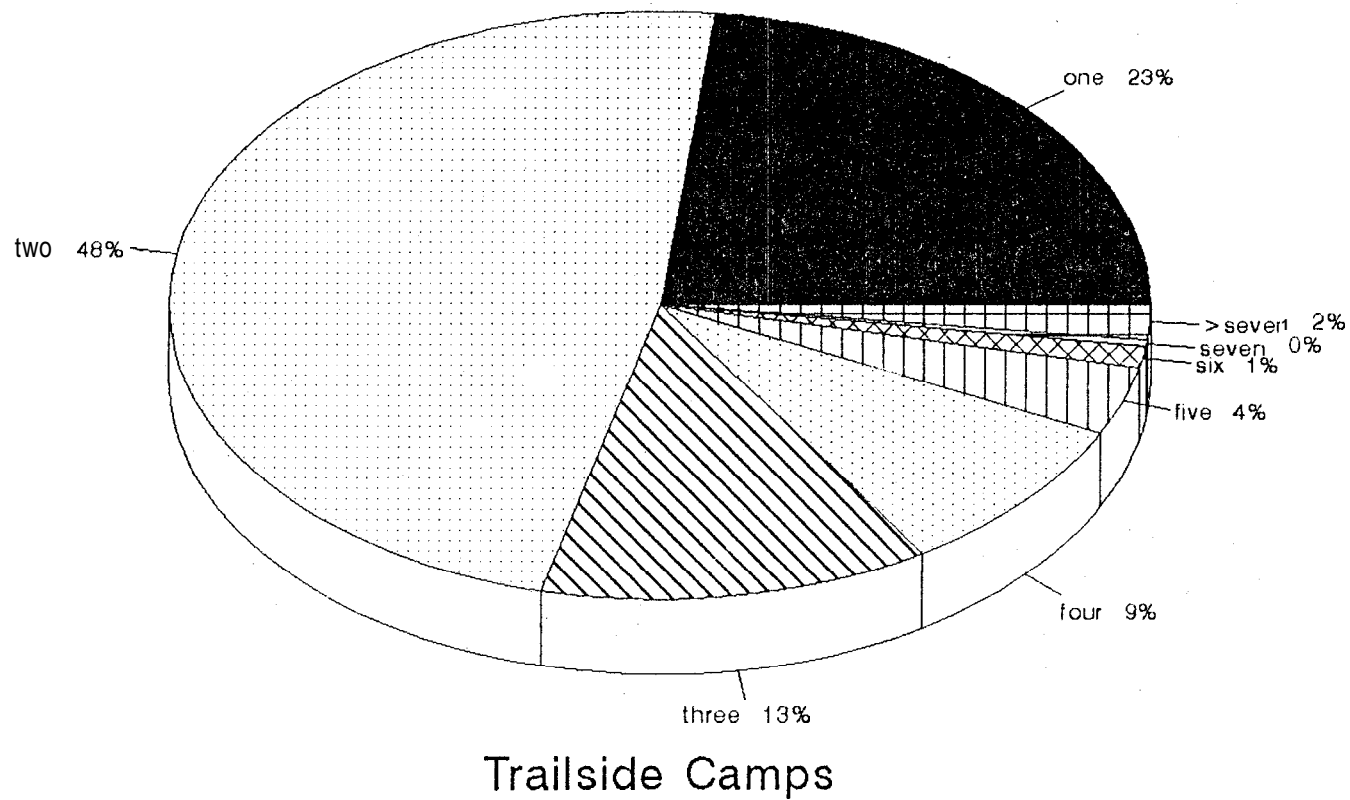


Schurman

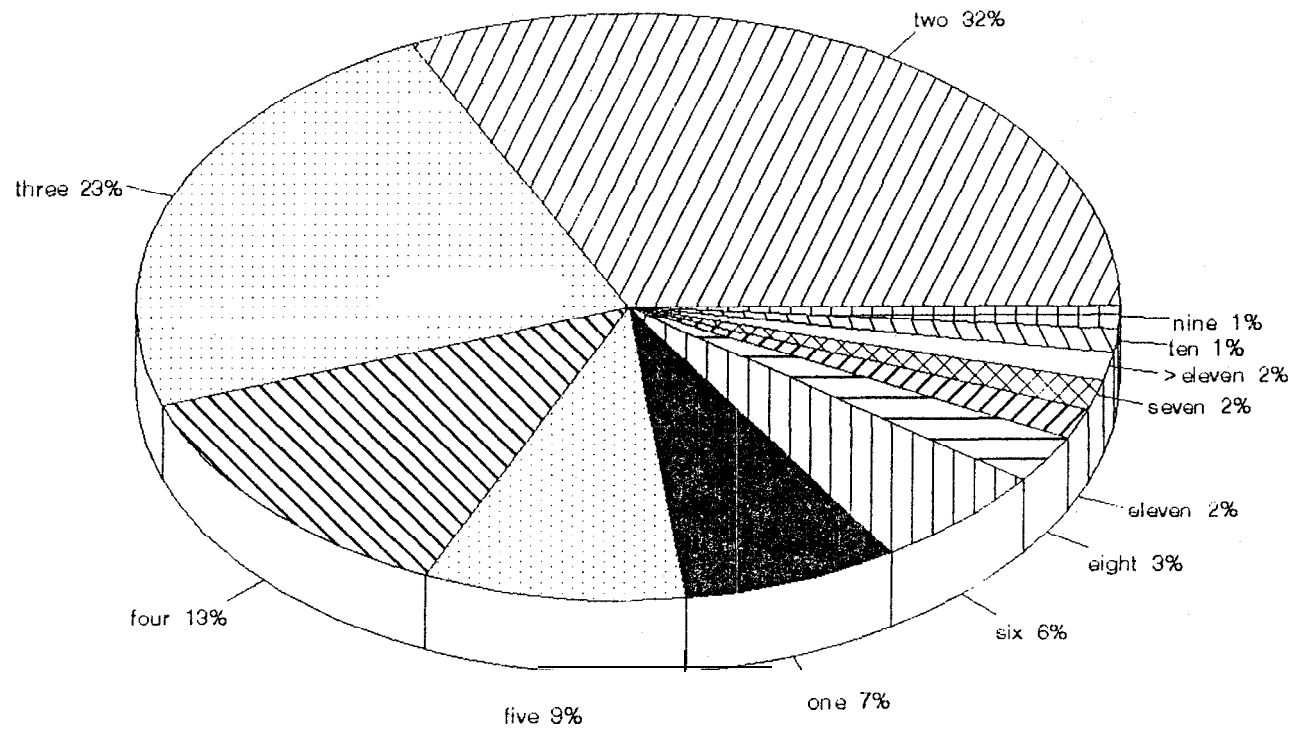


Curtis

Party Size for Backcountry Overnight Use 1992

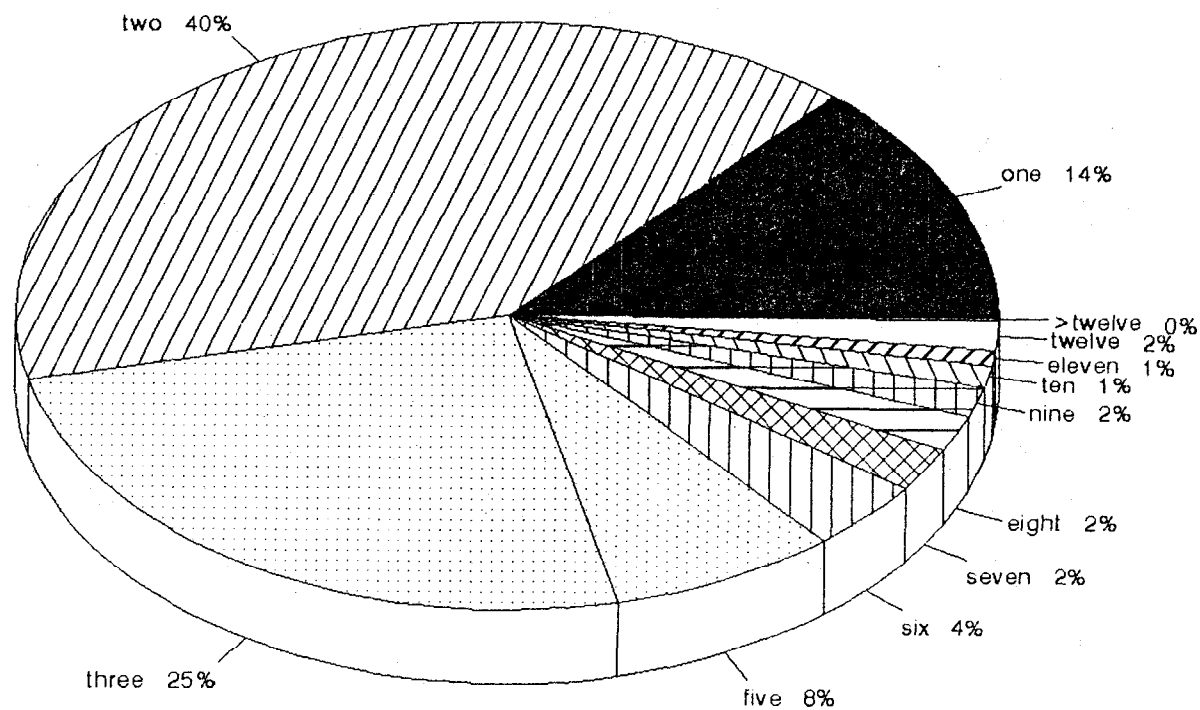


Party Size for Backcountry Overnight Use 1992



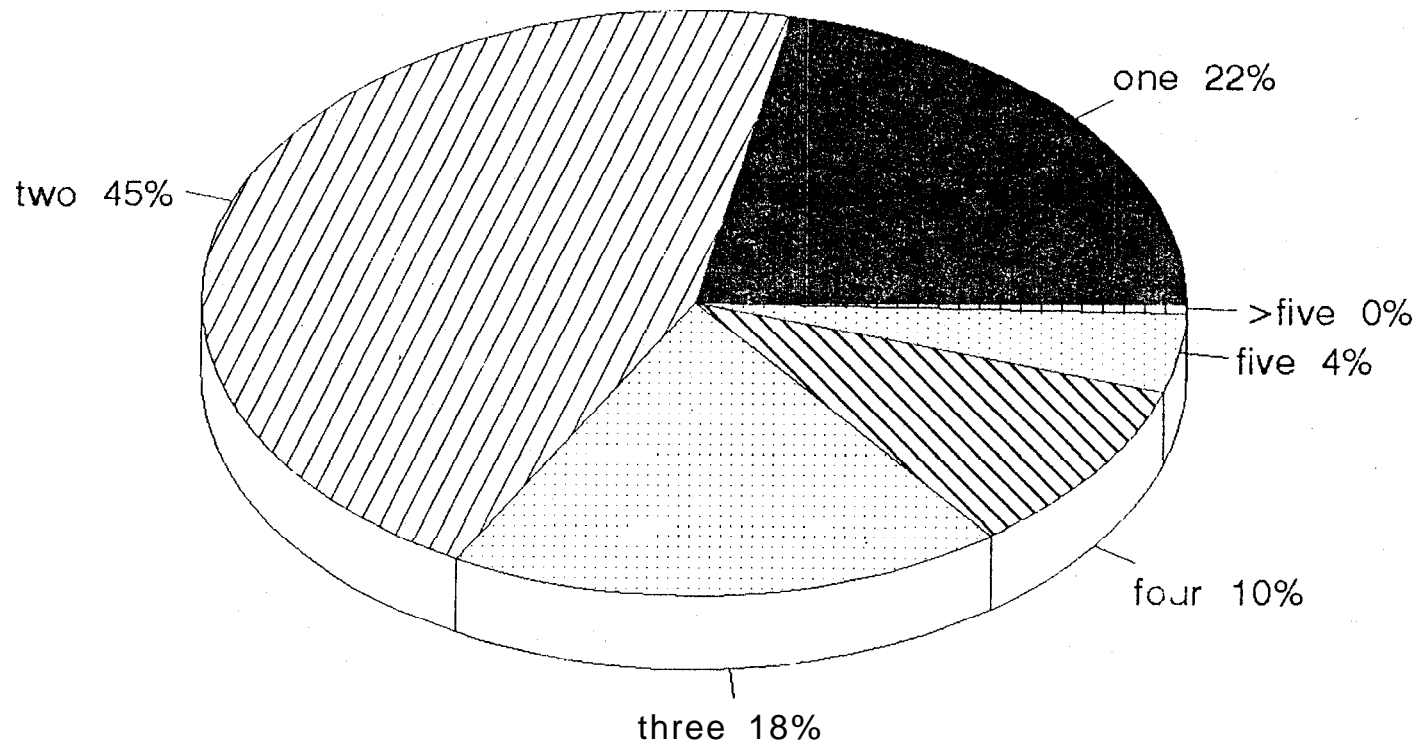
Alpine Zones

Party Size for Backcountry Overnight Use 1992



Camps Muir and Schurman

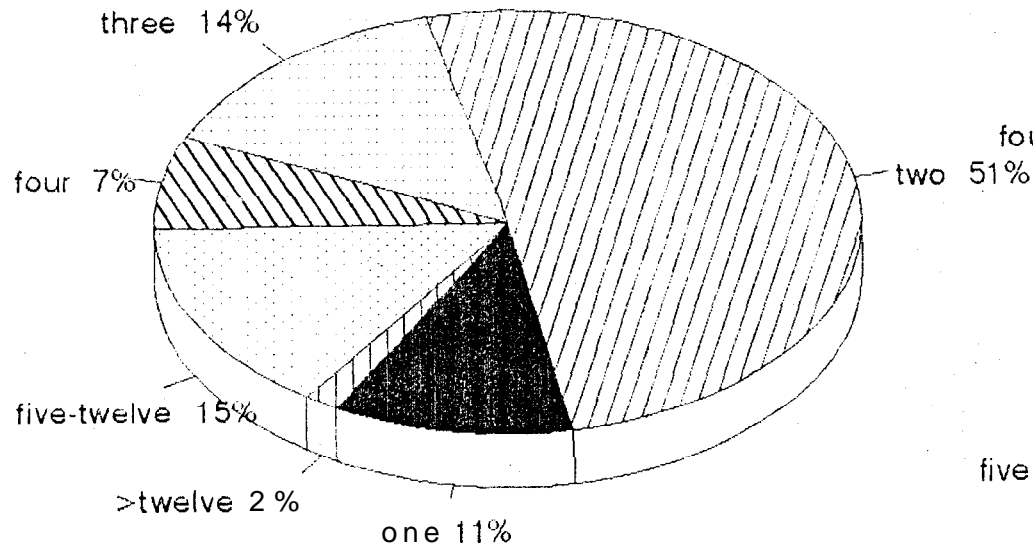
Party Size for Backcountry Overnight Use 1992



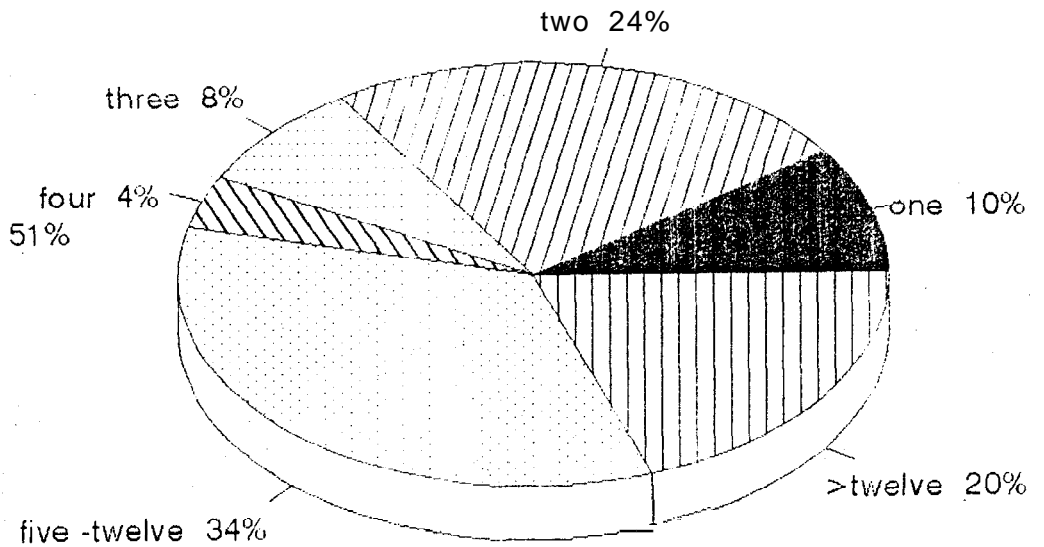
Crosscountry Zones

Party Size for Backcountry Overnight Use By Zones

1992



Winter Wilderness Zones

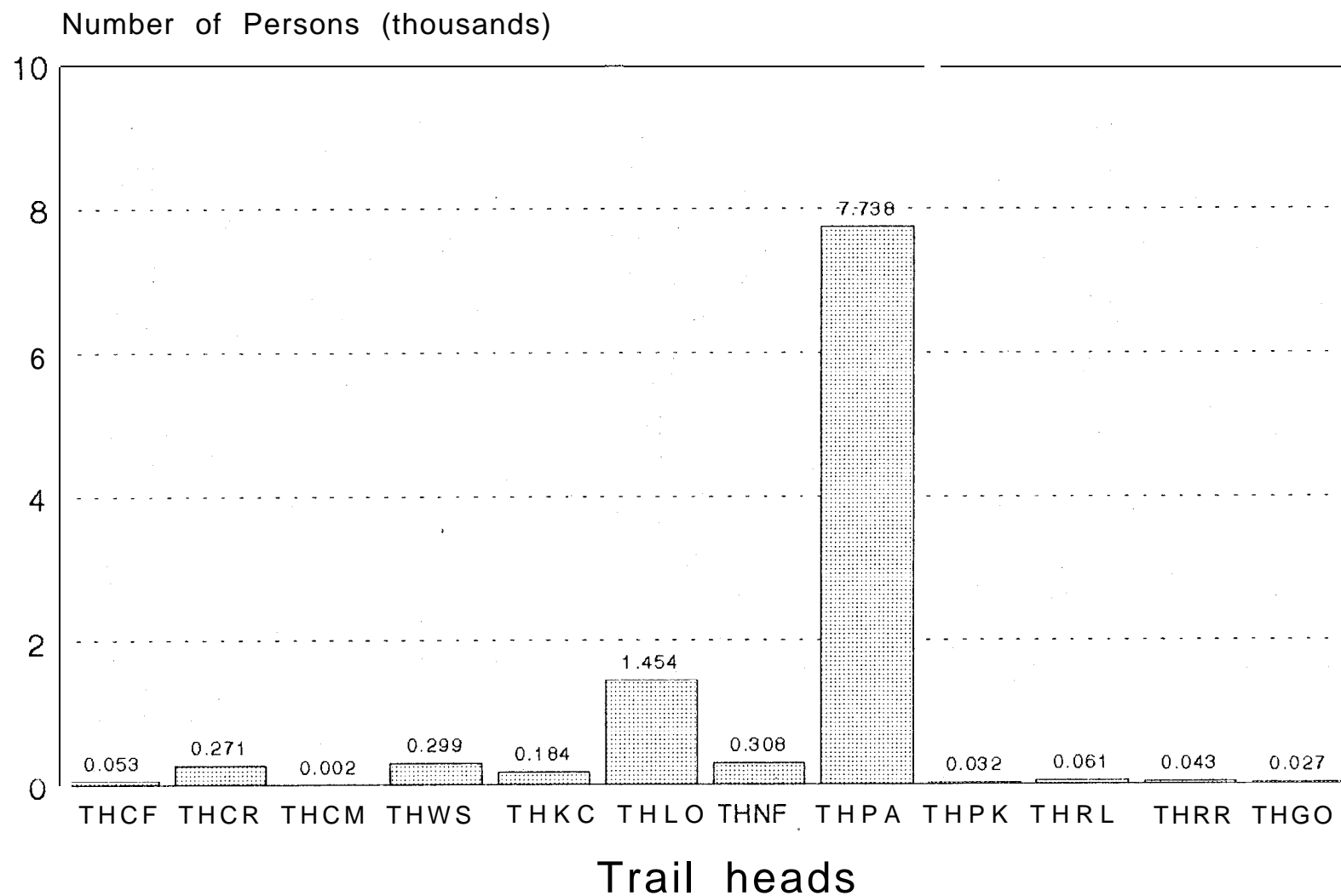


Paradise Winter Zone

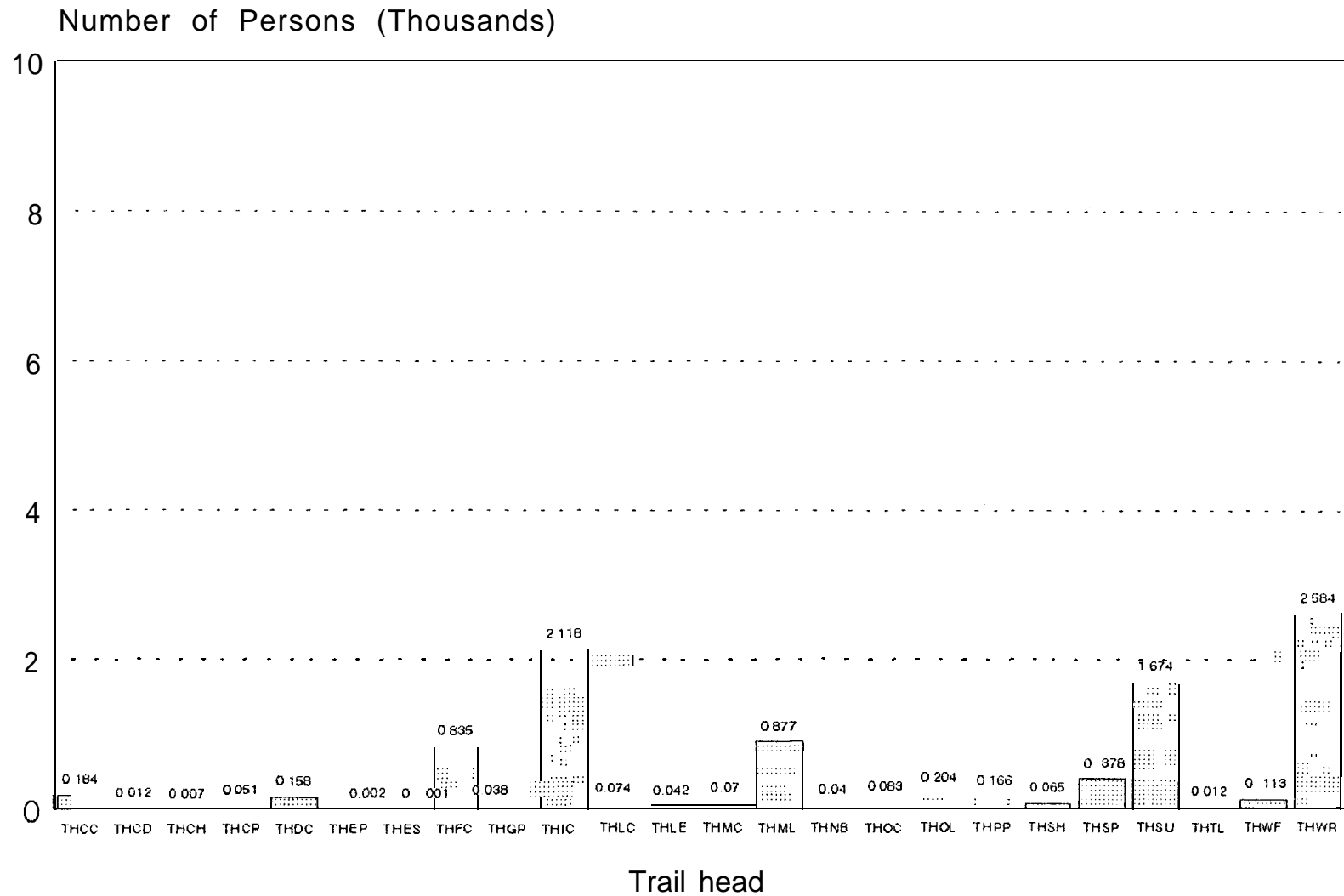
APPENDIX H

TRPIL USE

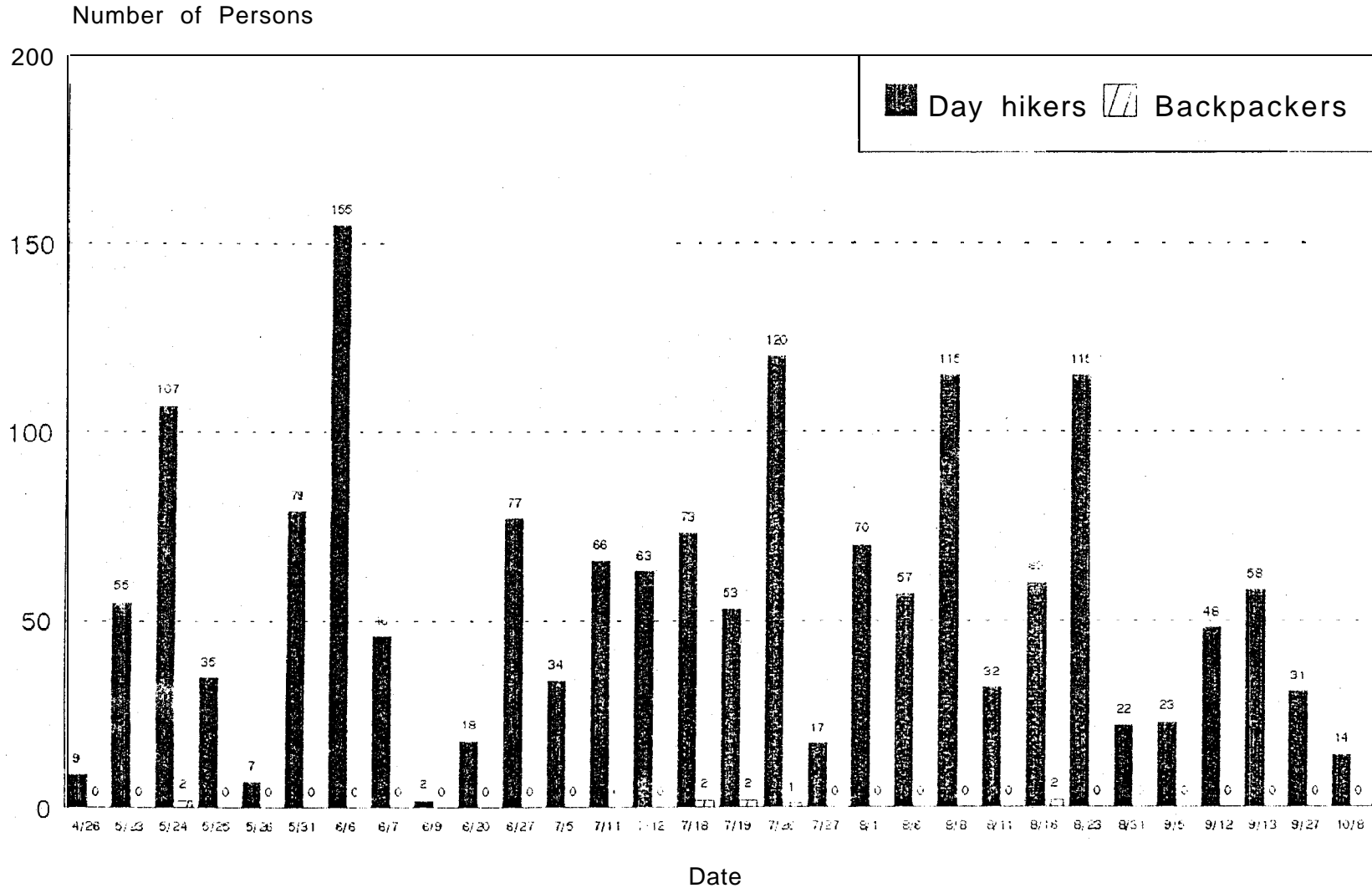
West Side Trail Use 1992



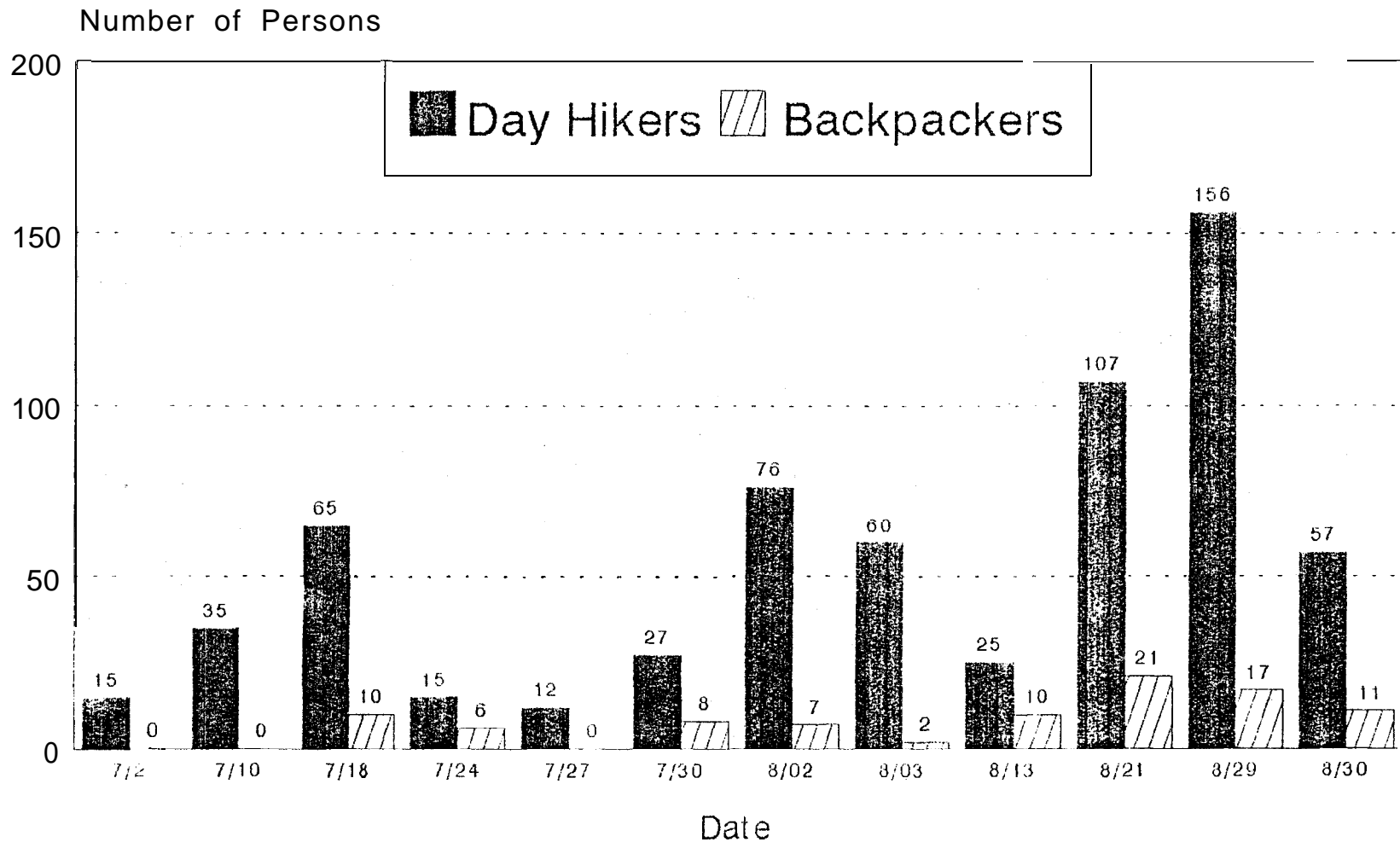
East Side Trail Use 1992



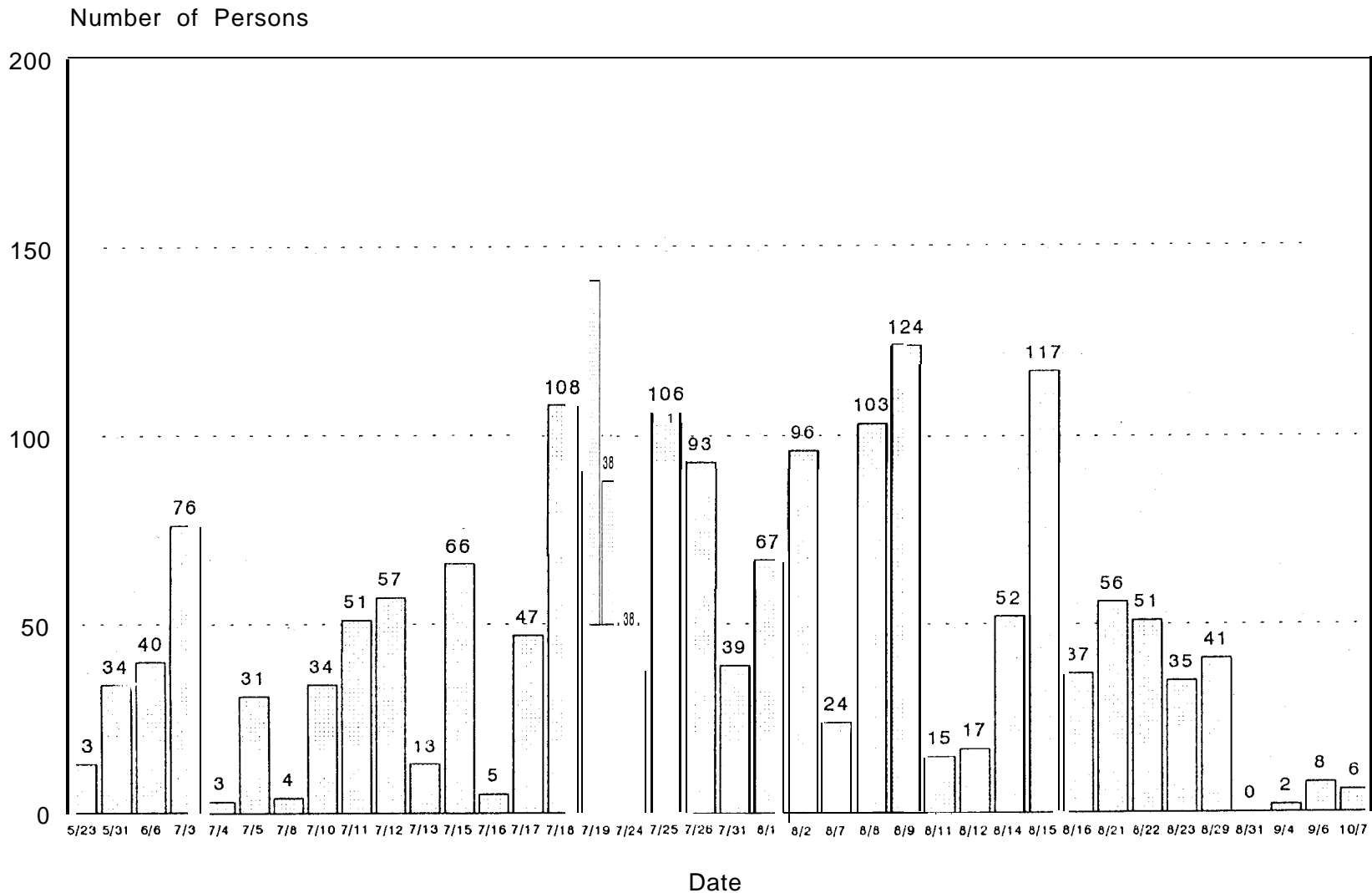
Comet Falls Trail Use 1992



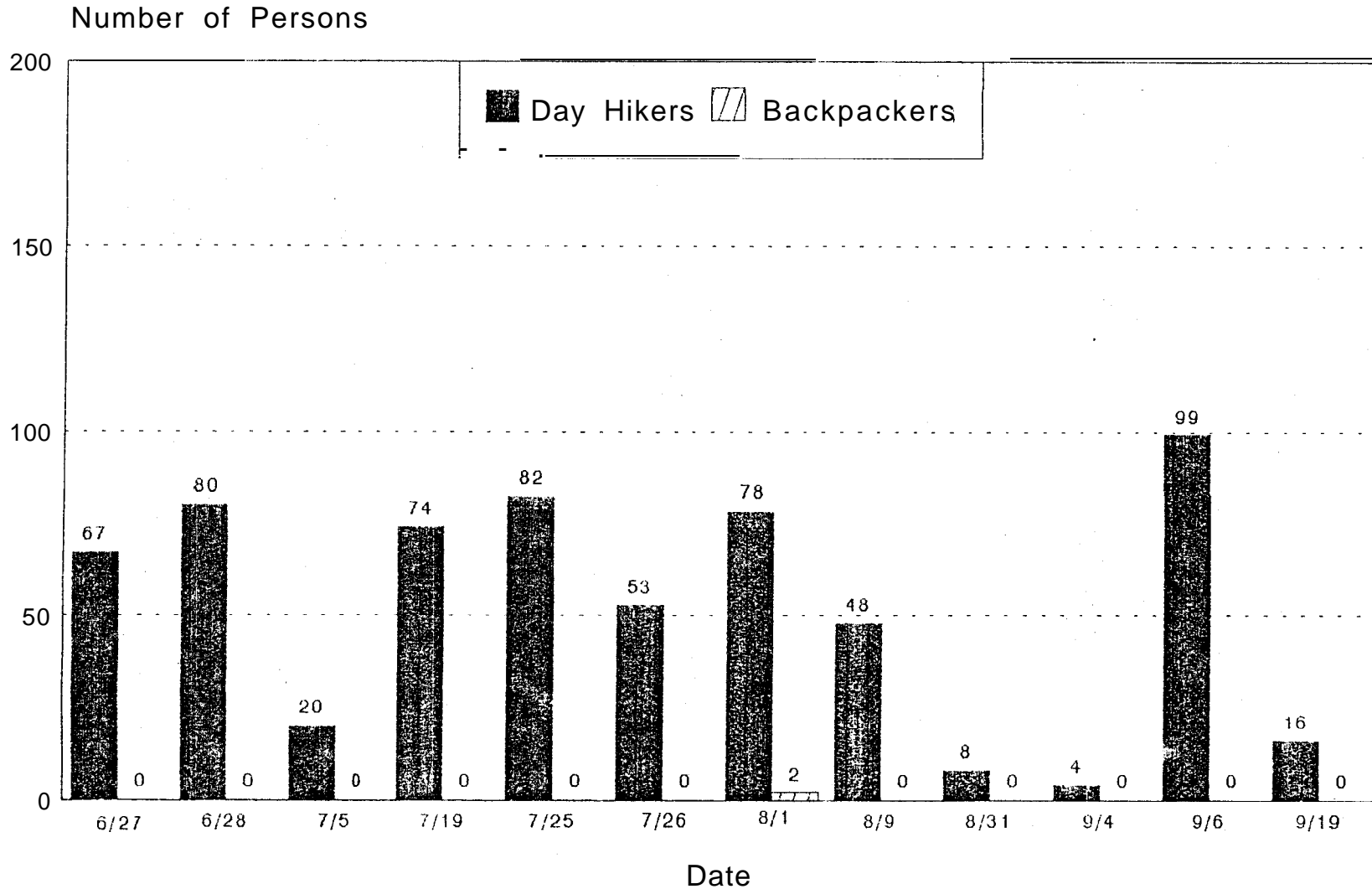
Carbon Glacier Trail Use (Ipsut Creek to Carbon Glacier) 1992



Day Use of Bench/Snow Lake Trail 1992

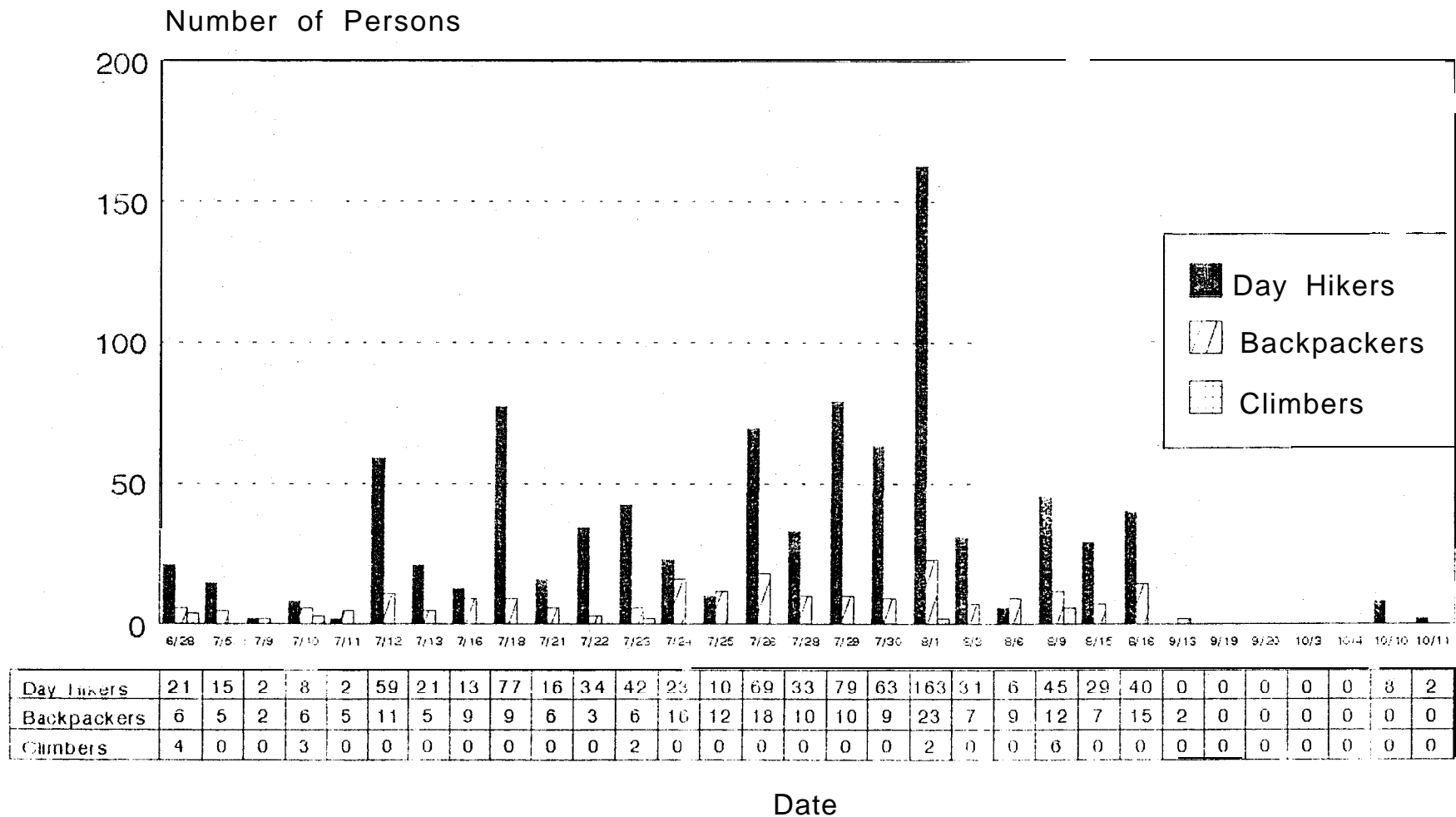


Pinnacle Peak Trail Use 1992

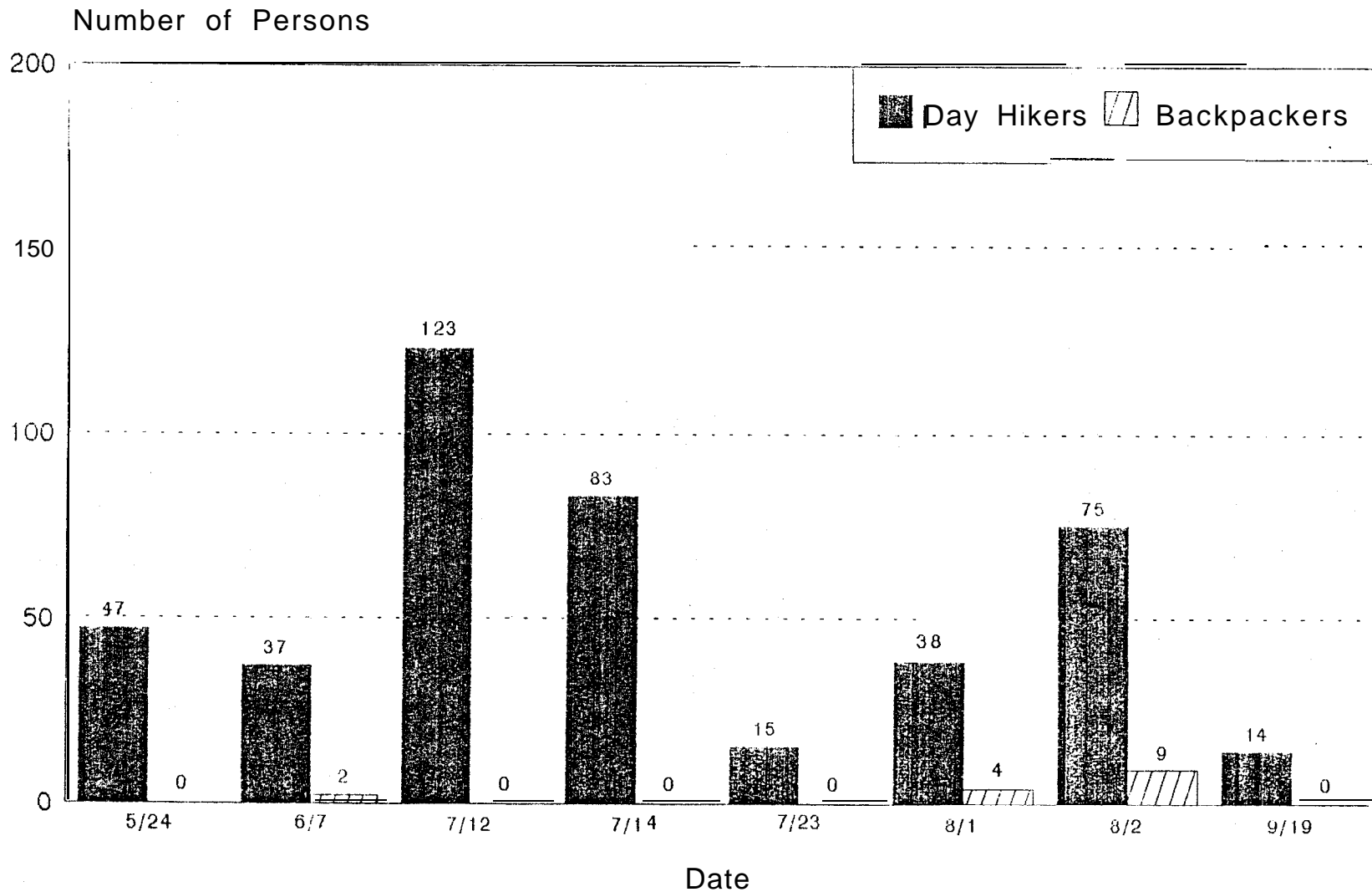


n = 12 (no climbers were noted on this trail)
data compiled from patrol logs
B.A. Samora, 3/93

Fryingpan Creek Trailhead to Summerland Trail Use 1992

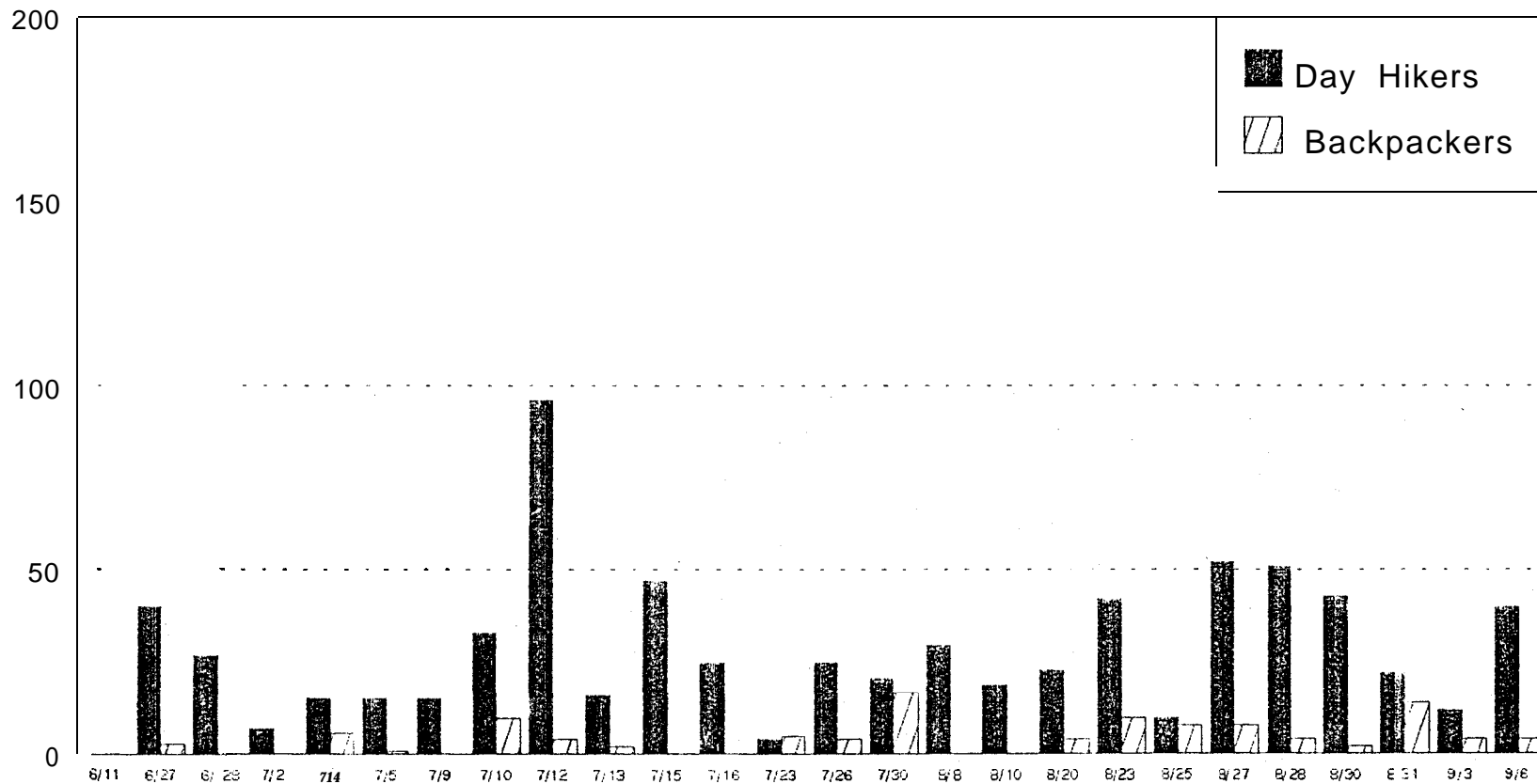


Narada Falls Trail Use 1992



Spray Park Trail Use 1992

Number of Persons

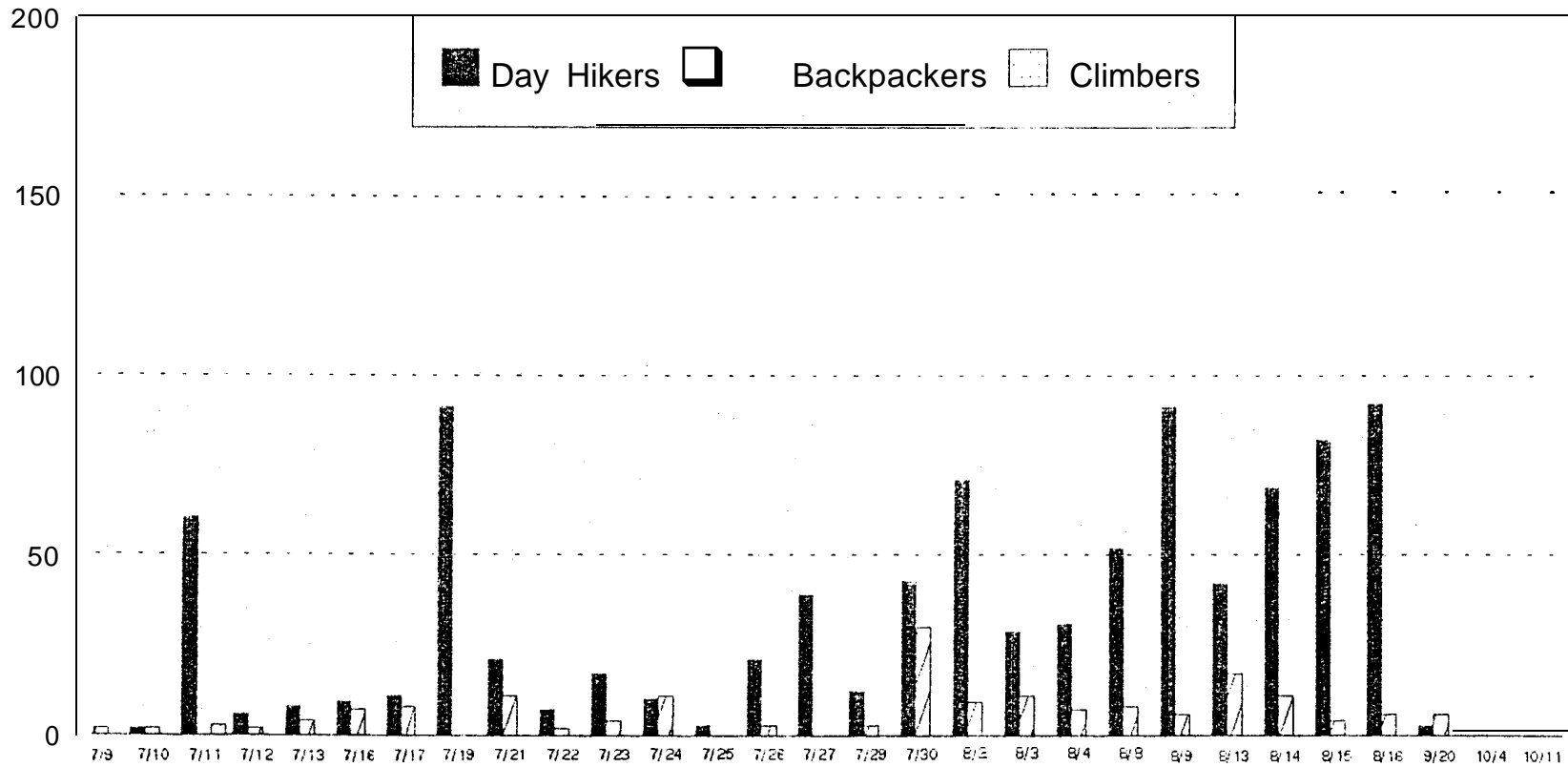


| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------|---|----|----|---|----|----|----|----|----|----|----|----|---|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Day Hikers | 0 | 40 | 27 | 7 | 15 | 15 | 15 | 33 | 96 | 16 | 47 | 25 | 4 | 25 | 21 | 30 | 19 | 23 | 42 | 10 | 52 | 51 | 43 | 22 | 12 | 40 |
| Backpackers | 0 | 3 | 0 | 0 | 6 | 1 | 0 | 10 | 4 | 2 | 0 | 0 | 5 | 4 | 17 | 0 | 0 | 4 | 10 | 8 | 8 | 4 | 2 | 14 | 4 | 4 |

Date

Summerland to Indian Bar Trail Use 1992

Number of Persons



Date

n=20

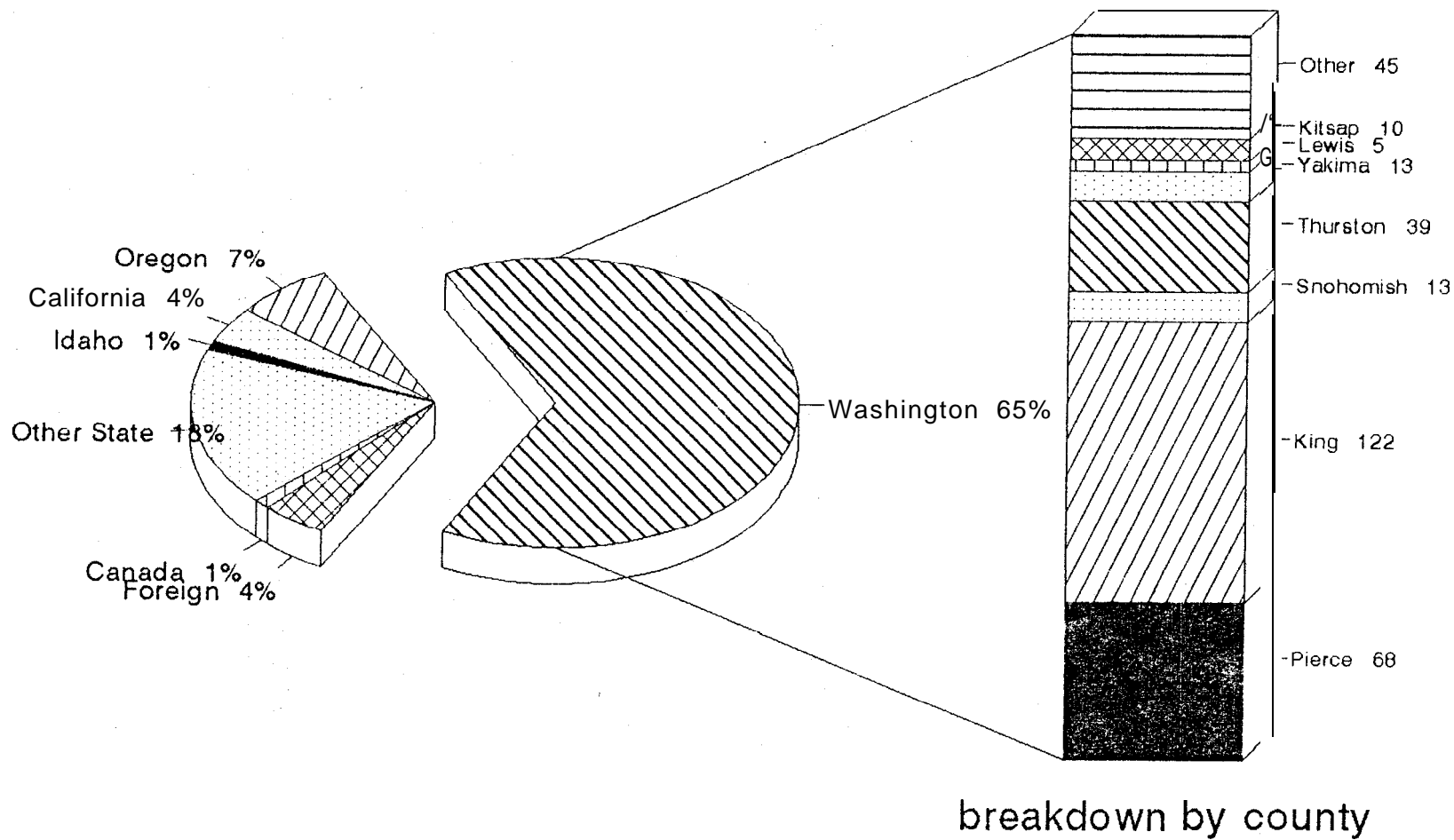
data compiled from patrol logs

B. A. Samora, 3/93

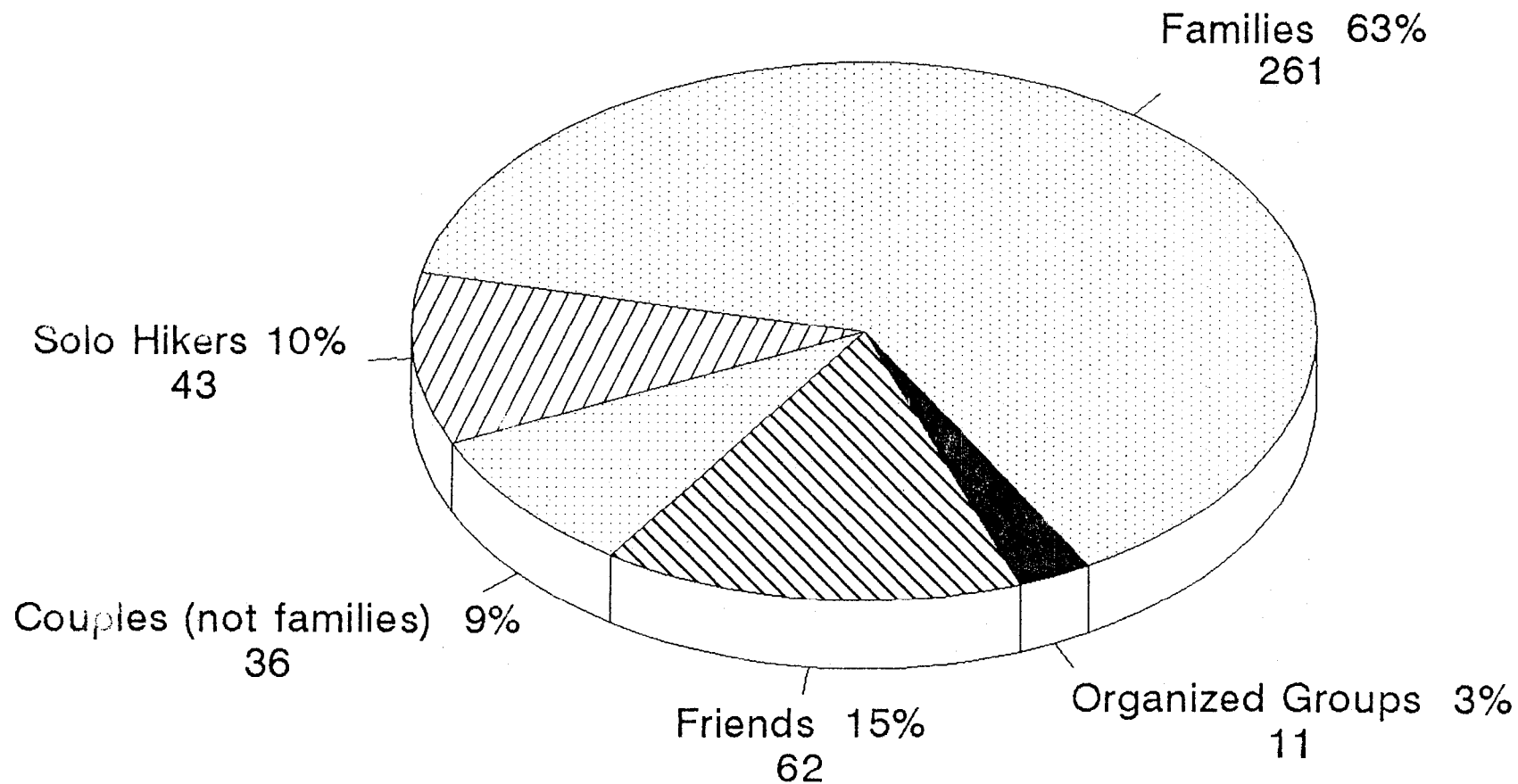
APPENDIX I

DEMOGRAPHICS OF WILDERNESS DAY HIKERS

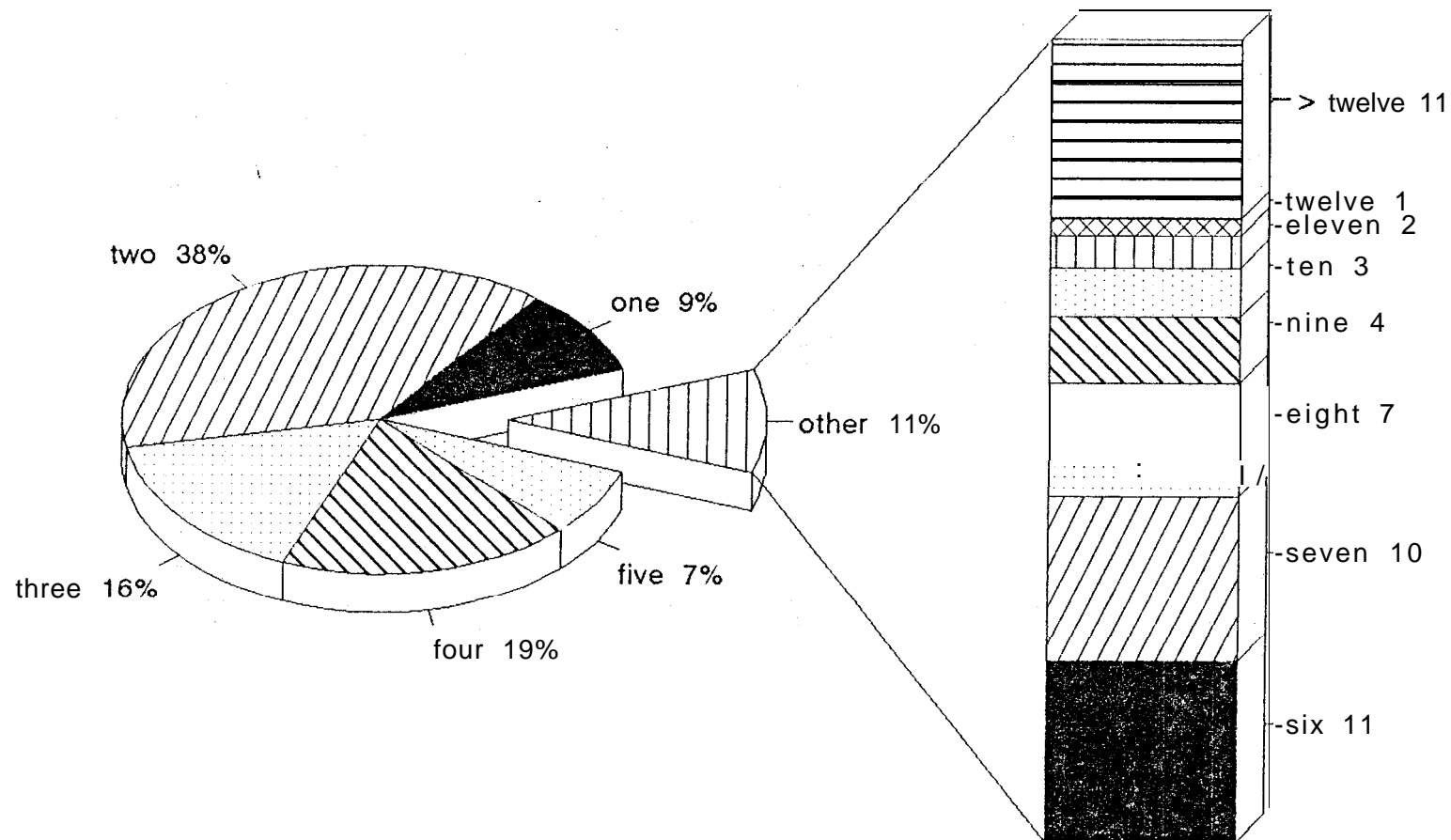
Place of Residence for Day Hikers Using the Bench/Snow Lake Trail 1992



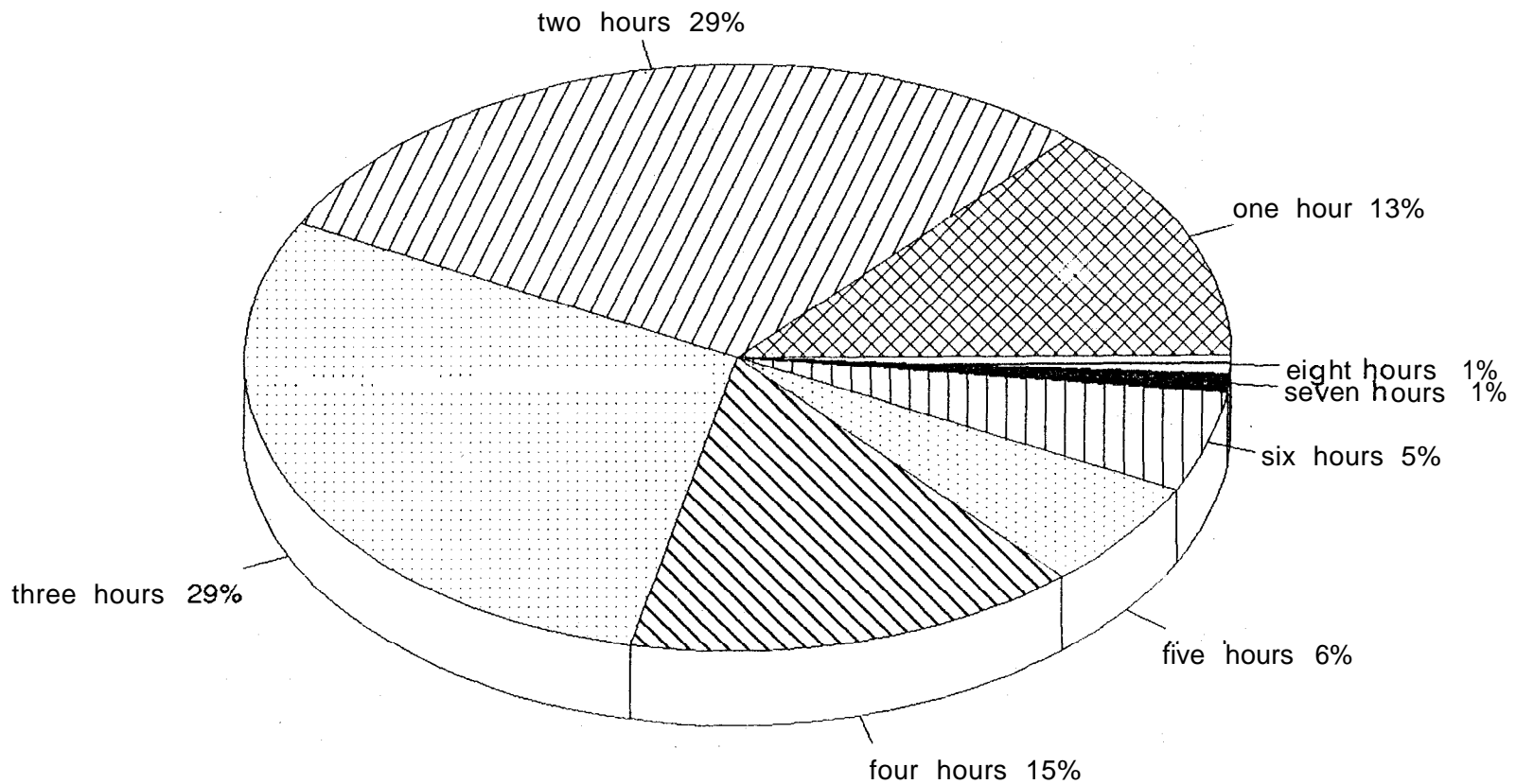
Group Types for Day Hikers Using Bench/Snow Lake Trail 1992



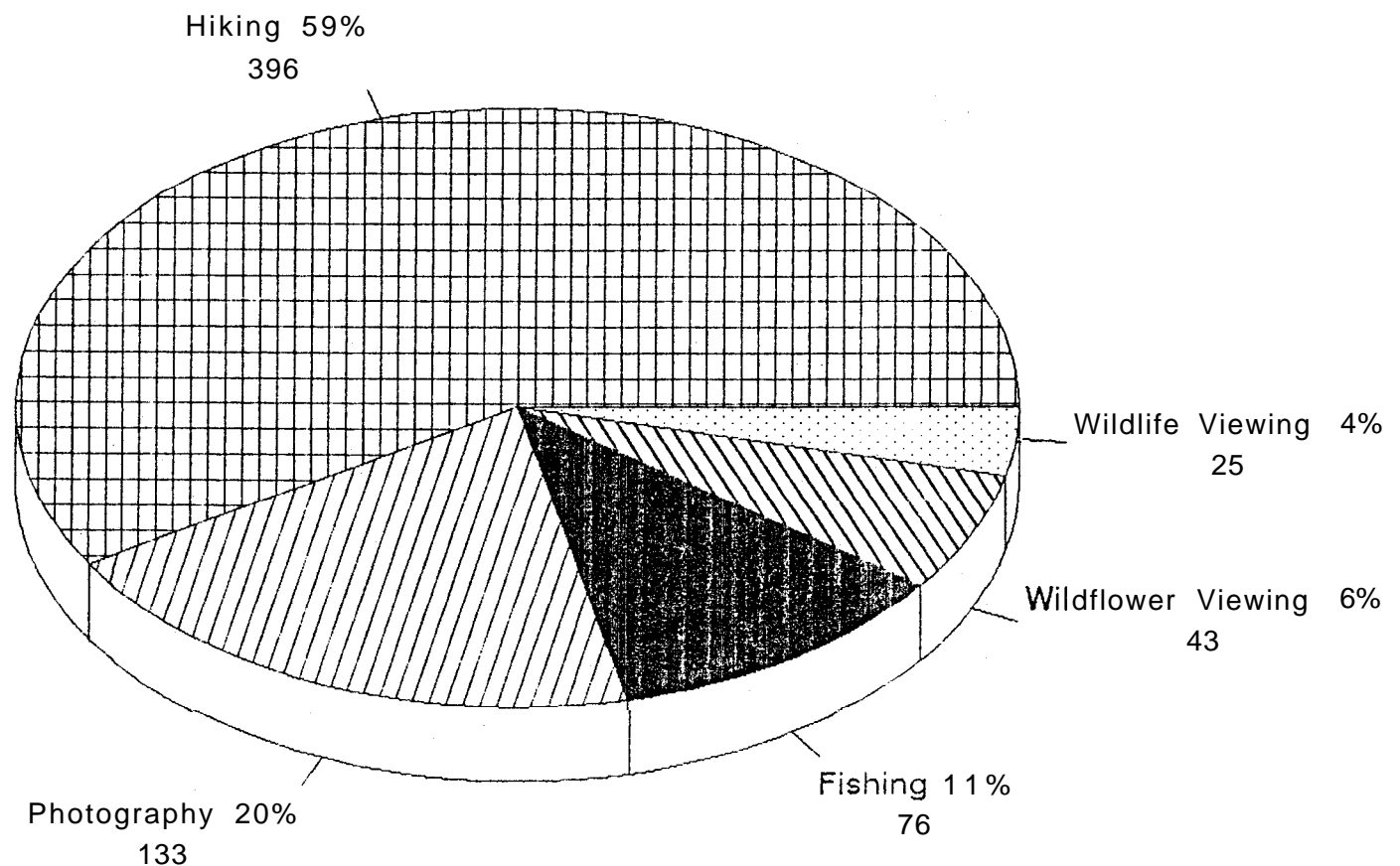
Party Sizes for Day Hikers Using the Bench/Snow Lake Trail 1992



Length of Stay for Day Hikers Using the Bench/Snow Lake Trail 1992

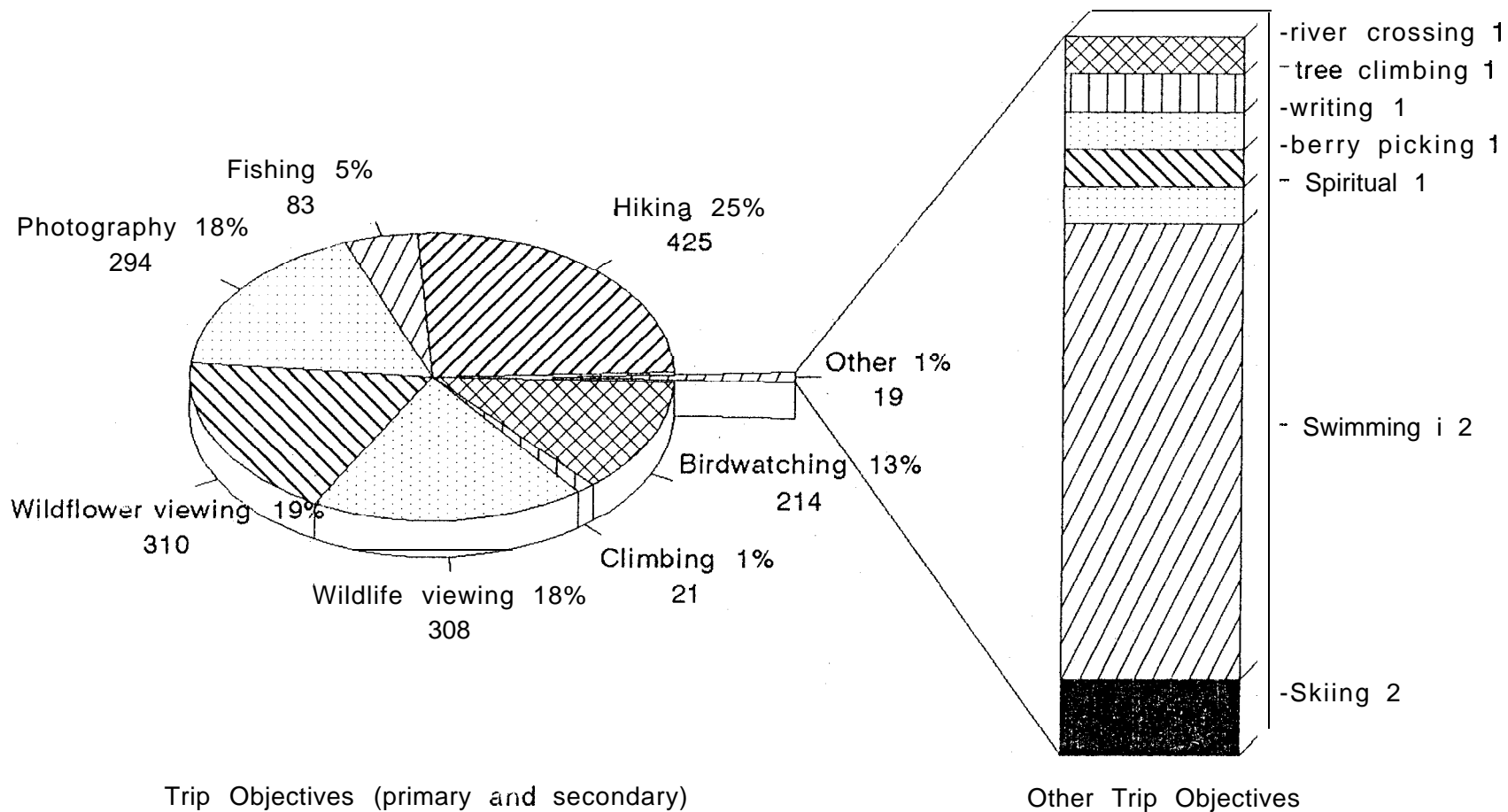


Trip Objectives for Day Hikers , using the Bench/Snow Lake Trail 1992



Primary Trip Objectives

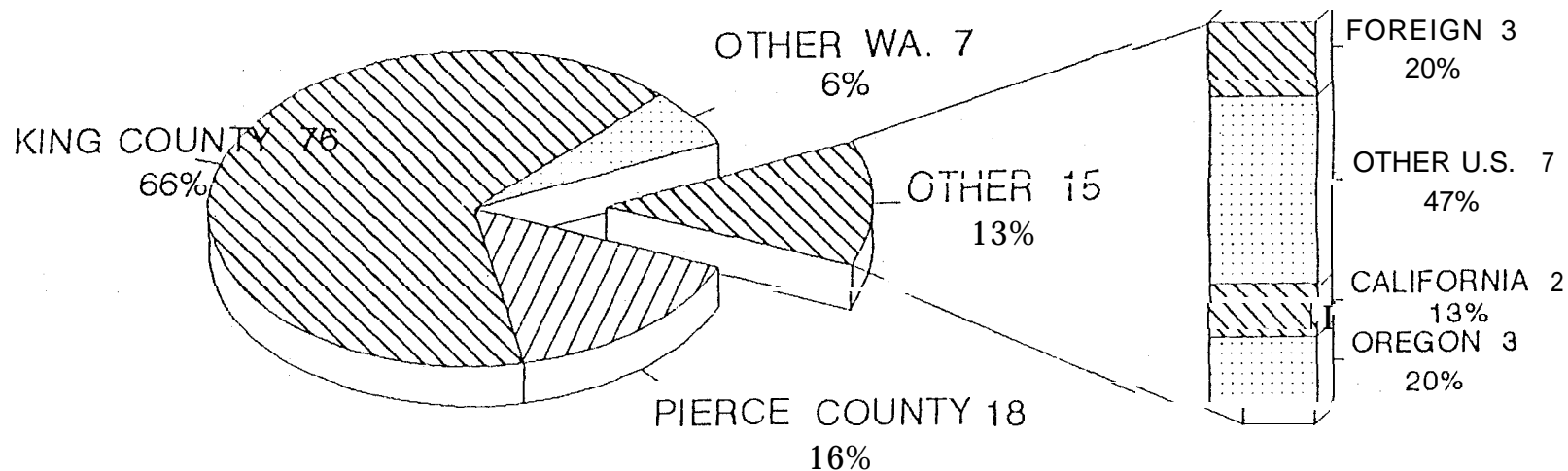
Trip Objectives for Day Hikers Using the Bench/Snow Lake Trail 1992



n=398 groups

B. A. Se 3/93

Spray Park Trail Day Users Place of Residence July- August, 1991

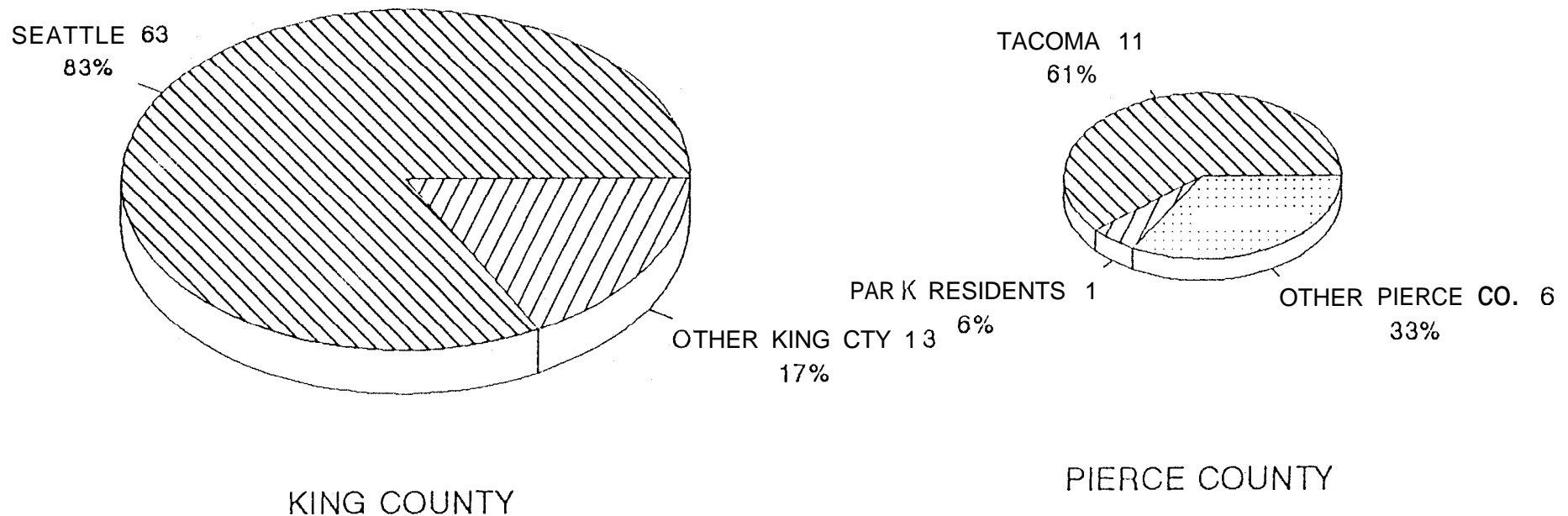


(compiled through informal interviews by NRP)
(n=116)

Spray Park Trail Day Users Place of Origin

King and Pierce County Day Hikers

July - August, 1991

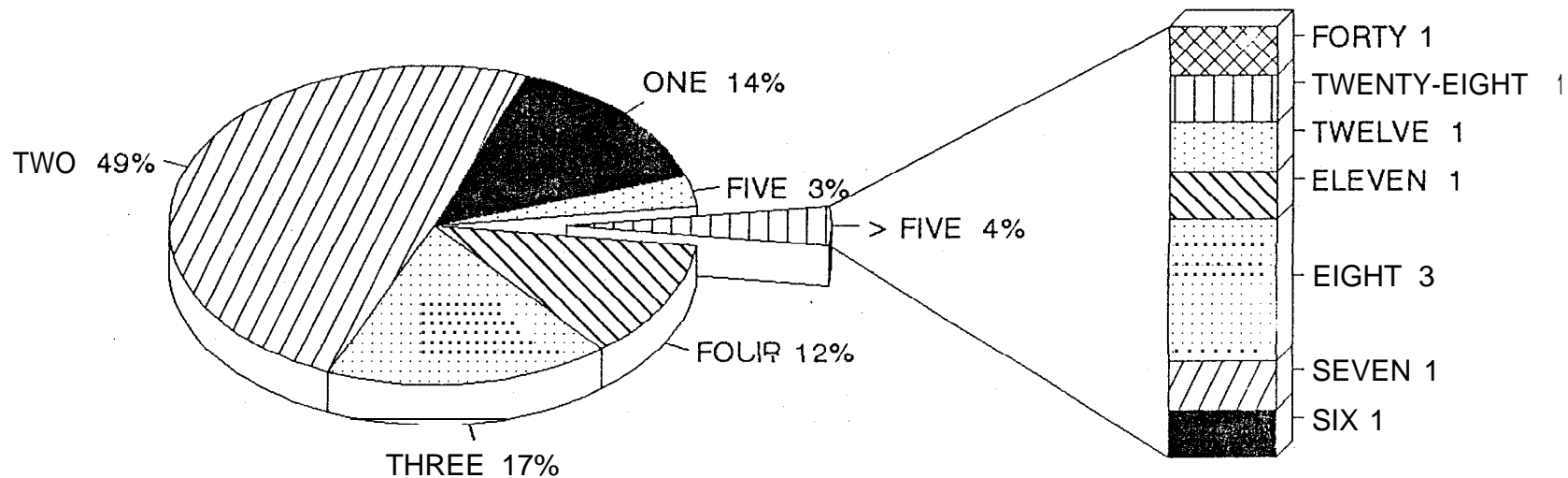


compiled from informal interviews by NRP

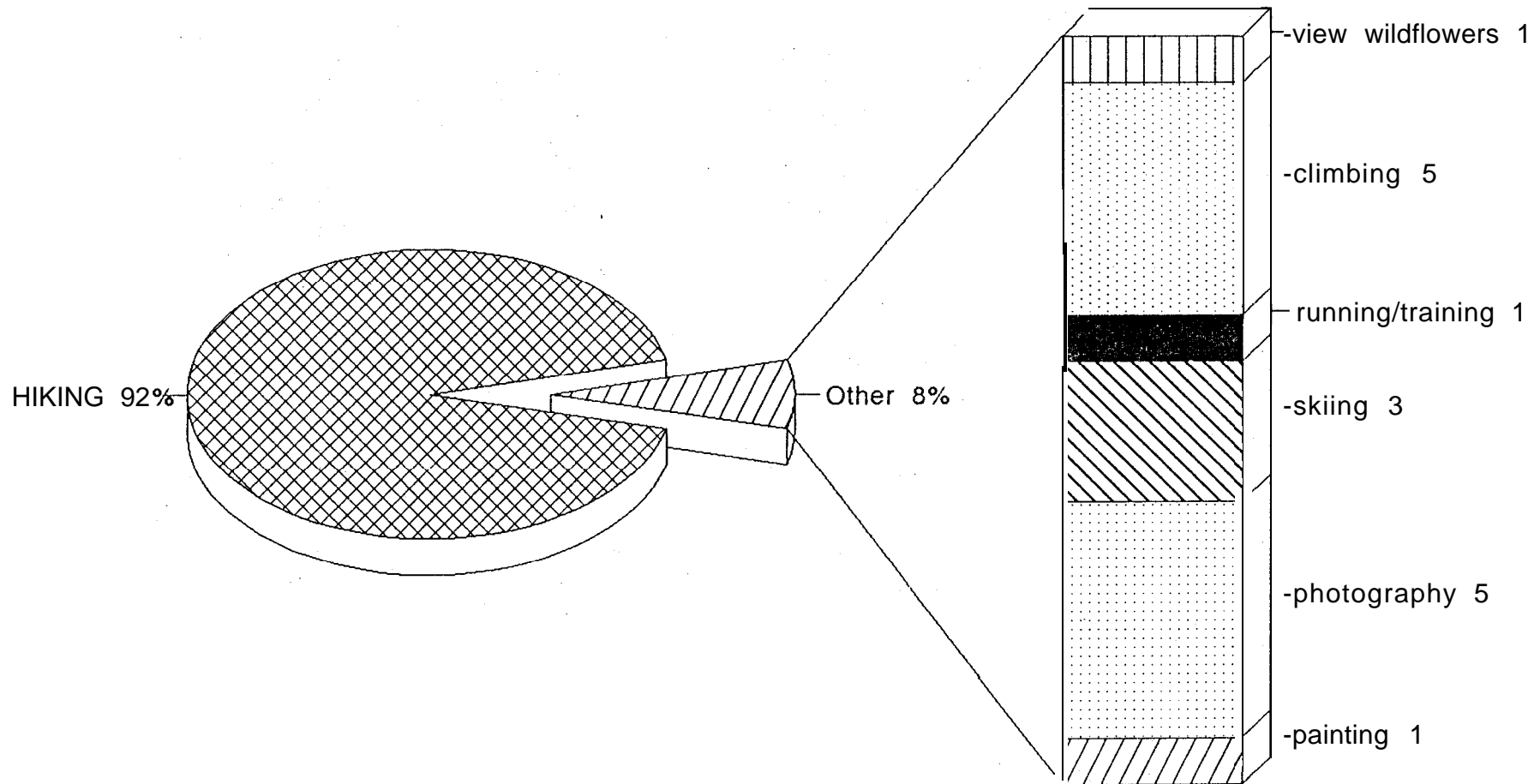
(n=116)

B.A. Samora 3/92

Party Size for Spray Park Trail Day Hikers 1991

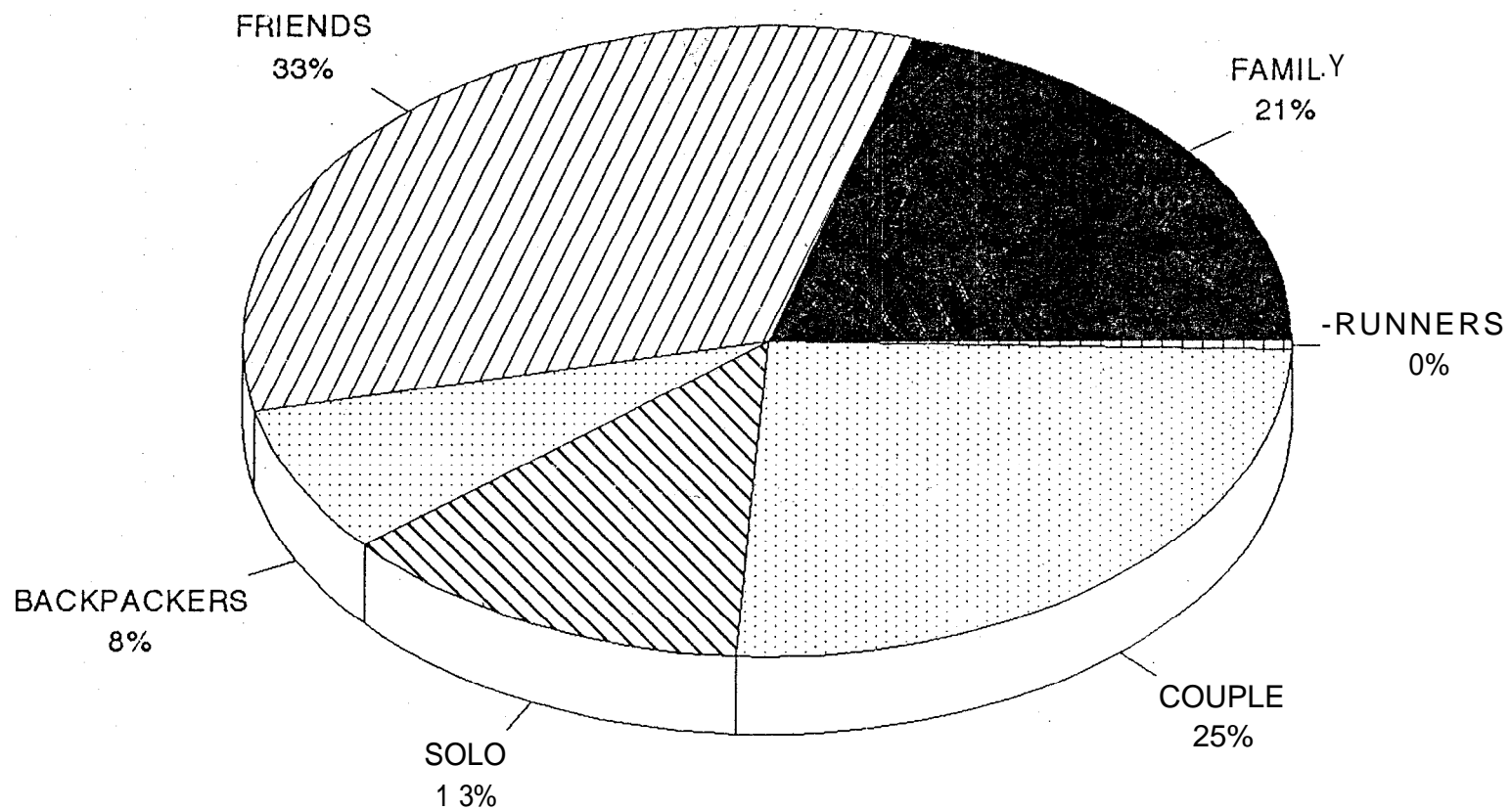


Trip Objectives for Day Hikers 'Using the Spray Park Trail 1991

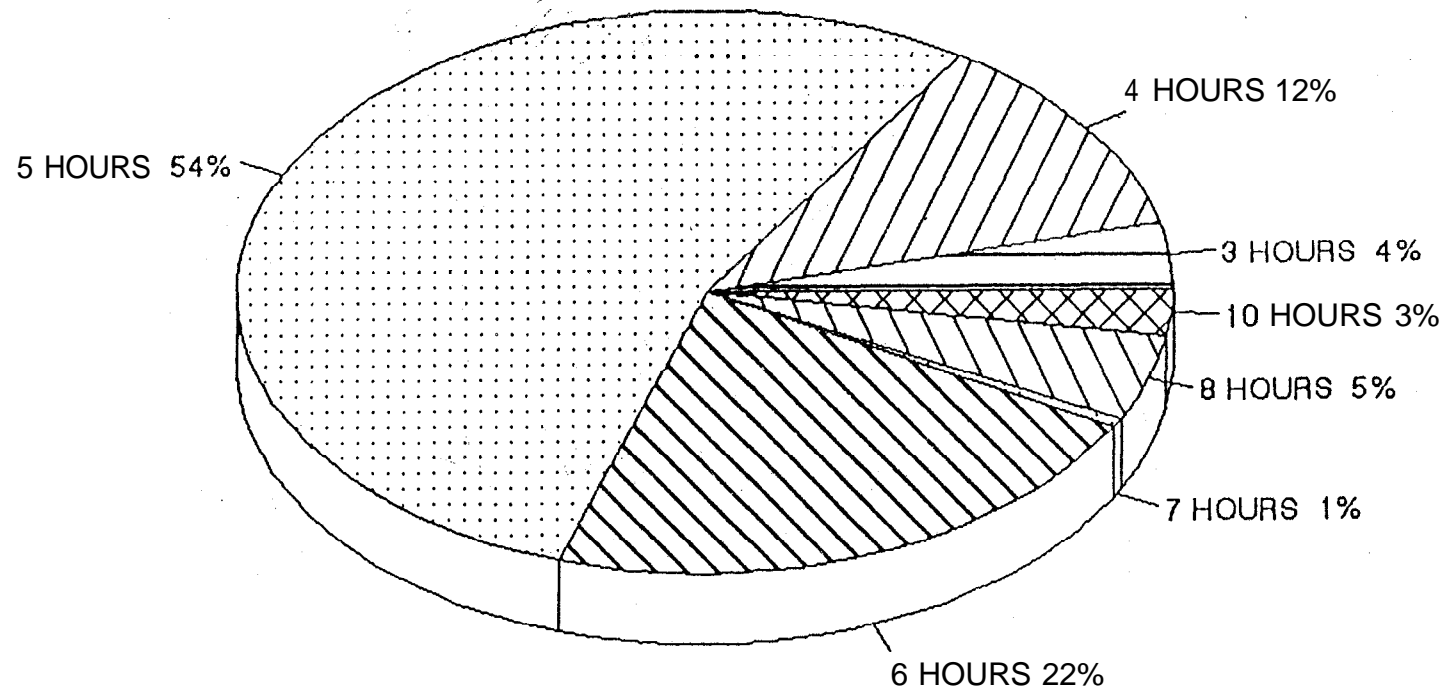


Group Types for Day Hikers Using the Spray Park Trail

1991



Length of Stay for Spray Park Trail Day Users 1991 (July - August)



(data compiled by NRP staff through informal contact with day hikers)
(n = 183)