

# **WILDERNESS MANAGEMENT PLAN**

**North Cascades  
National Park Service Complex**

**March 1989**

Approved:

A handwritten signature in cursive script, appearing to read "John R. Earnst".

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John R. Earnst, Superintendent  
North Cascades National Park Service Complex

March 20. 1989

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## INTRODUCTION

North Cascades National Park Service Complex (NCNPSC) encompasses some of the most rugged and magnificent alpine wilderness in the United States. From its inception, the Park Service Complex was realized primarily as a wilderness park. Proceeding management practices have focused on treating the backcountry as wilderness, as remote areas where wilderness values predominate.

Increasing visitor use, particularly by climbers and crosscountry backpackers, has brought increased human impact into even the most remote regions of NCNPSC, such as the Picket Range. Wilderness management, coordinated between the Information Center in Marblemount and the Stehekin Visitor Center, has stressed visitor education as the primary management tool for preserving and protecting the wilderness character of North Cascades National Park Service Complex. Restrictions on visitor use occur in the more densely travelled regions.

From the beginnings of the National Park Service, the goals of wilderness preservation have been basic to management philosophy, particularly with regard to management of Wilderness areas. The formation of the National Wilderness Preservation System with the passage of the Wilderness Act in 1964 provided for inclusion of National Park Service lands within the system. Common to the Wilderness Act, the 1916 National Park Service enabling legislation and the legislation creating North Cascade National Park Service Complex in 1968 are the ideas that wilderness areas shall be managed in such a manner so as "...to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same....by such means as will leave them unimpaired for the enjoyment of future generations...."

On November 16, 1988, the Washington Wilderness Park Bill of 1988 became law. The bill established 634,614 acres of wilderness and 5,226 acres of potential wilderness within North Cascades National Park and the Ross Lake and Lake Chelan National Recreation Areas. This wilderness, the Stephen Mather Wilderness, is dedicated to the first Park Service Director. All other areas of the Complex with the designation backcountry will be managed using the same standards established for wilderness as set forth in this plan

The preservation and conservation of the wilderness values and character of North Cascades National Park Service Complex is the challenge of this plan. The Wilderness Act states that a wilderness is "...an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain." It is an area which "...generally appears to have been affected primarily by the forces of nature, in which

the imprint of Man's work is substantially unnoticeable." The preservation, protection and conservation of the Wilderness of NCNPSC is the prime responsibility of park managers and park visitors. Visitor education is a primary means by which North Cascades National Park Service Complex can achieve compliance with these management objectives. Having all NCNPSC personnel work within the spirit of the Wilderness Act is the best educational tool available to promote the wilderness values and characteristics consistent with this special place.

North Cascades National Park Service Complex selected Limits of Acceptable Change management system because of its systemic approach towards wilderness management. LAC provides for clear, obtainable objectives and has built-in feedback loops for evaluating the success or failure at meeting established standards. LAC is consistent with the recommendations of the Servicewide Task Force on Wilderness and Policy and Management. The use of the LAC process will enable us to work in partnership with the public to pass this valued resource on to the next generation untrammelled.



### MANAGEMENT GOALS AND OBJECTIVES

- To manage the Wilderness environment so as to conserve, maintain, enhance or restore the wilderness natural resources and those ecological relationships and processes that would prevail were it not for human influences.
- To encourage wise visitor use of the resource through education, example, and innovative management.
- To strive for management techniques that will allow visitors maximum freedom in the wilderness without sacrificing the quality of the natural resources.
- To meet the challenges and spirit of the 1916 Park Service organic act and the 1988 Washington National Parks Wilderness Act.
- To insure maximum freedom of use without sacrificing the quality of the wilderness natural resources.
- To pass the wilderness natural resources and spirit of the North Cascades on to the next generation unimpaired.

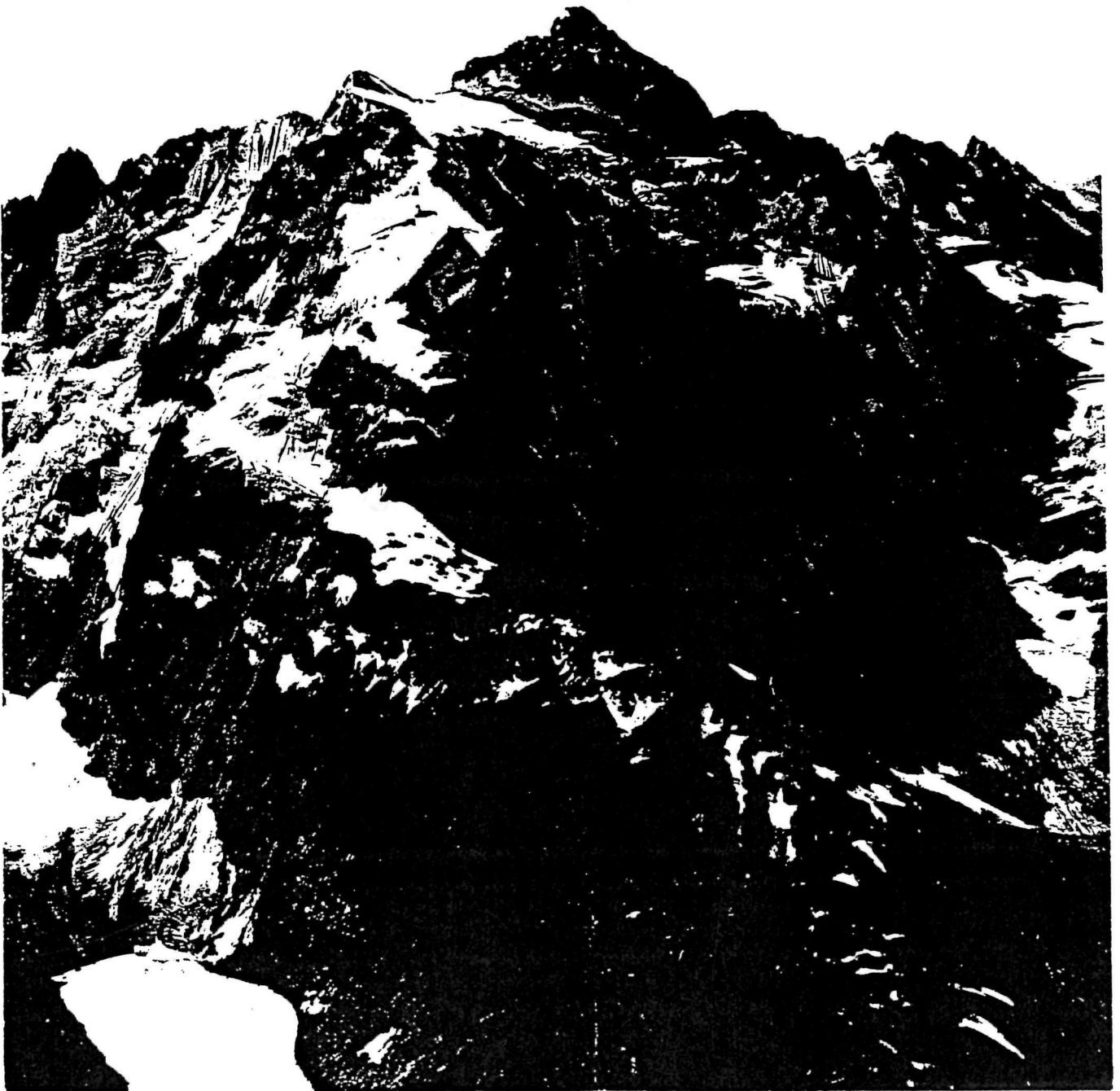
To achieve these goals and objectives, this plan supports the recommendations of the Steering Committee for the First National Wilderness Management Workshop, conducted at Moscow, Idaho, on October 4-6, 1983. Their recommendations are published in the booklet, Wilderness Management - A Five Year Action Program.

### Summary of Priority Actions

- \* Examine existing wilderness education techniques and evaluate their effectiveness. Ensure that wilderness education material defines the wilderness resource and its values.
- \* Institute and revitalize comprehensive in-service wilderness management training focused on the value of the wilderness resource, wilderness ethics, and low-impact camping, utilizing both agency and non-agency expertise.
- \* Identify, monitor, and publicly report internal and external threats to wilderness values from whatever source, whether overuse, acid rain, other forms of degraded air quality, visual or sound impairments.
- \* Manage indigenous plant and animal communities to sustain natural processes, assuring that levels of human use are compatible rather than detrimental, with

emphasis on preserving endangered and threatened species, as required by law.

- \* Conduct workshops and other programs nationally, regionally, and locally, as cooperative ventures of agencies, educational institutions, and interest groups in order to share ideas, concerns, and techniques relating to wilderness management.



### LAWS, MANAGEMENT POLICIES, GUIDELINES

Management of North Cascades National Park Service Complex is directed by the following laws, management policies, and guidelines.

#### **NATIONAL PARK SERVICE ORGANIC ACT OF 1916**

"...to regulate park use and provide for the enjoyment of park lands in a manner consistent with the conservation of park scenery, natural and historical objects, and wildlife. In order to fulfill these mandates, all resource planning activities must ensure that public use facilities do not disrupt or damage resources to a degree whereby their ability to benefit future visitors is reduced; that appropriate non-destructive public use and enjoyment of resources are made possible, and that conscious care and protection is provided to conserve natural and cultural park resources."

#### **WILDERNESS ACT OF 1964**

"...shall be administered for the use by 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 preservation of their wilderness character...."

#### **PUBLIC LAW 90-544**

"...to preserve for the benefit, use and inspiration of present and future generations certain majestic mountain scenery, glaciers, alpine meadows, and other unique natural features in the North Cascades mountains...."

#### **REDWOODS ACT OF 1978**

"...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 purpose for which these areas have been established."

#### **WILDERNESS MANAGEMENT POLICIES OF NPS 1978**

"...to maintain, preserve, and perpetuate the aesthetic setting and the natural/cultural resources of a park area...."

"...to restore conditions conducive to the perpetuation of the natural processes as they functioned before disruption of technological man or competition from non-native plants and animals."

"...visitors must accept wilderness largely on its own terms...the risks of wilderness travel, of possible dangers from accidents, wildlife, and natural phenomena must be accepted as part of the wilderness experience."



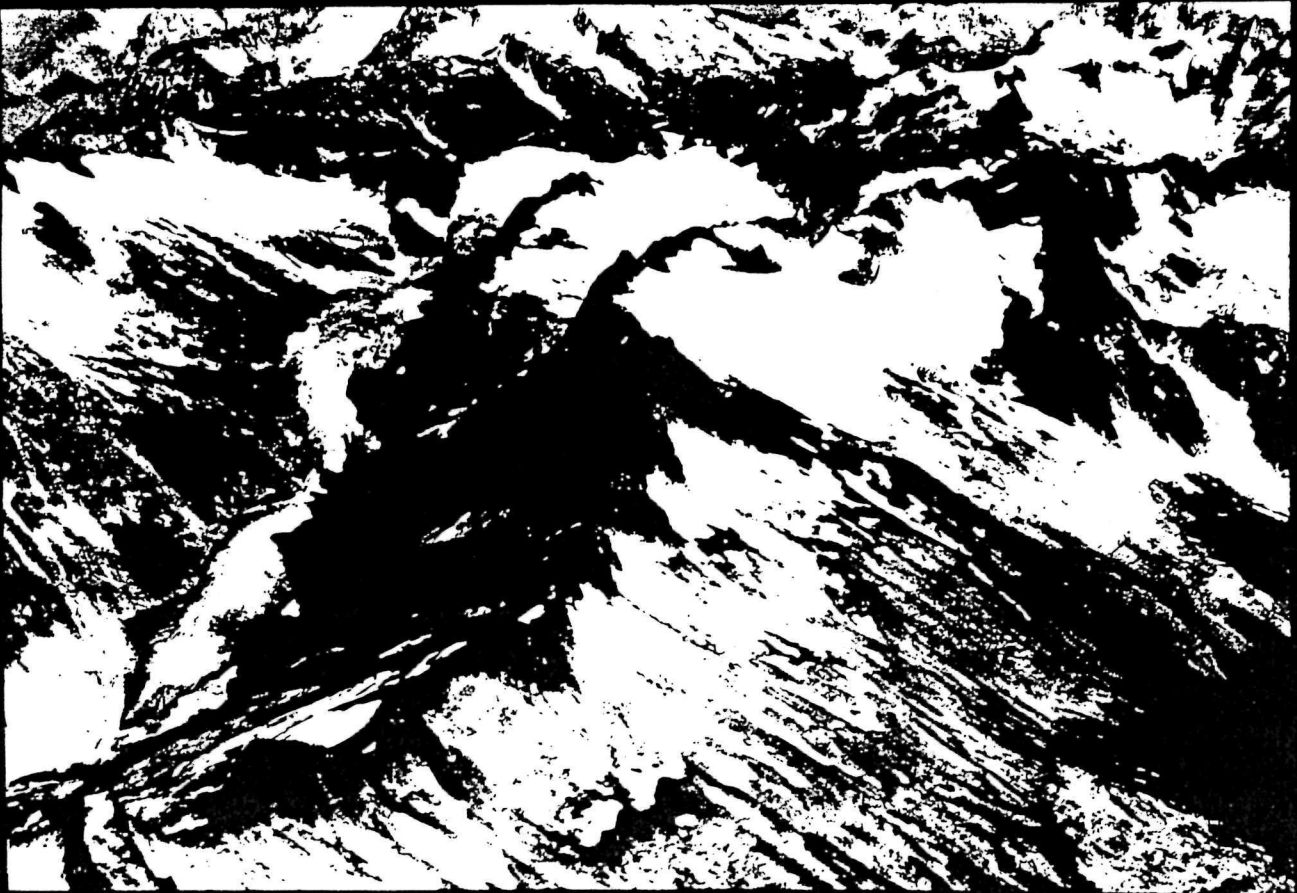
SERVICEWIDE TASK FORCE ON WILDERNESS POLICY and MANAGEMENT  
NOVEMBER 1986

"...the policies, per se, are adequate and suggest an action plan involving six categories for improving the Service's management of its wilderness areas: policy coordination, wilderness management techniques, use and capacity determinations, training of personnel, public education, and inter-agency coordination."

"...the action plan could be carried out over a five-year period...."

WASHINGTON NATIONAL PARKS WILDERNESS ACT of 1988

"In furtherance of the purposes of the Wilderness Act certain lands in the North Cascades National Park, Ross Lake National Recreation Area, and Lake Chelan National Recreation Areas, Washington, are hereby designated as wilderness and therefore as components of the National Wilderness Preservation System. Such land shall be known as the Stephen Mather Wilderness."





### THE PLAN

This plan is designed around the concepts for wilderness management as outlined in Limits of Acceptable Change (LAC) System for Wilderness Planning, authored by George Stankey, David Cole, Robert Lucas, Margaret Peterson, and Sid Frissel, January, 1985. LAC is a planning procedure that consists of a series of interrelated steps leading to the development of a set of measurable objectives that define desired wilderness conditions. It also defines management actions necessary to maintain or achieve desired conditions. It is a method of deciding by what standards the resource will be managed rather than how much use an area can tolerate (carrying capacity). It is an effort to improve Wilderness management through measurable objectives.

There are 9 steps in the LAC process;

- Step 1 identifies area concerns and issues.
- Step 2 defines the describes opportunity classes.
- Step 3 is the process of selecting resources and social conditions.
- Step 4 is an inventory of resources and social conditions.
- Step 5 sets specific standards for resource and social indicators.
- Step 6 identifies alternative opportunity class allocations.
- Step 7 identifies management actions for each alternative.
- Step 8 is the evaluation and selection of an alternative.
- Step 9 implements the necessary action and establishes a monitoring conditions.

Many of these steps have been in place for a number of years at NCNPSC and are incorporated into this plan.

It is believed that this plan will meet the challenges of the 1916 Organic Act, and the 1964 Wilderness Act, while at the same time providing for visitor freedom.

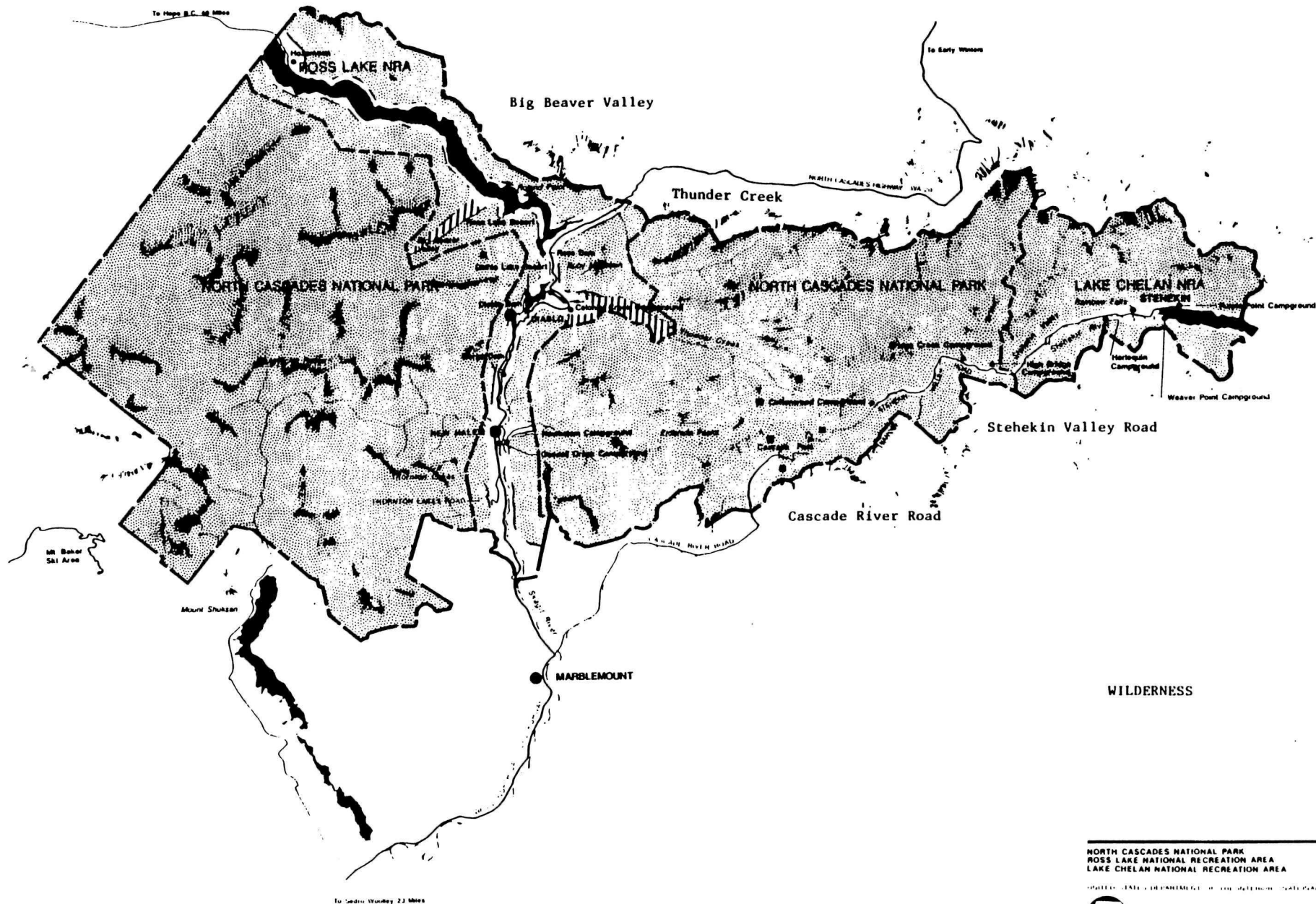
SECTION 1General Description of NCNPSC Wilderness and Its Uses

North Cascades National Park Service Complex contains 684,244 acres of North America's most spectacular mountain scenery and ancient forests. The Complex encompasses 318 glaciers--over half of the glaciers in the lower 48 states. Nearly 200 lakes and ponds dot the landscape. In an effort to protect this resource, 638,840 acres will be managed as Wilderness in accordance with the Wilderness Act.

All of North Cascades National Park will be managed as Wilderness with the exception of a corridor 100 feet wide, 50 feet either side of the center of the Cascade and Stehekin River roads.

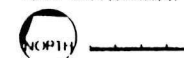
Wilderness Acreage

<u>Areas</u>	<u>Gross Acres</u>	<u>Wilderness</u>	<u>Percent Wilderness</u>	<u>Potential Wilderness</u>
NORTH CASCADES NP	505,000	504,614	99%	226
LAKE CHELAN NRA	62,000	56,000	90%	5,000
ROSS LAKE NRA	117,000	74,000	63%	0
	-----	-----	-----	-----
Total NCNPSC	684,000	634,614	93%	5,226



NORTH CASCADES NATIONAL PARK  
ROSS LAKE NATIONAL RECREATION AREA  
LAKE CHELAN NATIONAL RECREATION AREA

UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT



The North Cascades Wilderness is part of a still larger wilderness system, flanked on the east, south and west. To the east is the Pasayten Wilderness, 505,524 acres, and Lake Chelan/Sawtooth Wilderness, 145,667 acres. To the south is the Glacier Peak Wilderness, 464,219 acres. To the west are the Mount Baker Wilderness and Noisy-Diobsud Wilderness, 131,981 acres. These National Forest lands provide excellent wilderness opportunities for a variety of visitors from mountaineers to stock parties.

Additional regional recreational opportunities exist in Olympic and Mount Rainier National Parks as well as Forest Service Wilderness Areas in the Cascades, including Glacier, Pasayten, Alpine Lakes, Enchantments, Goat Rocks, Henry M. Jackson, Mount Baker, Noisy-Diobsud, Lake Chelan/Sawtooth, Mount Adams, Morse Peak, and William O. Douglas. Other opportunities exist north of the Park Service Complex in the Province of British Columbia, Canada, including Manning and Cathedral Provincial Parks and Skagit Recreational Area.

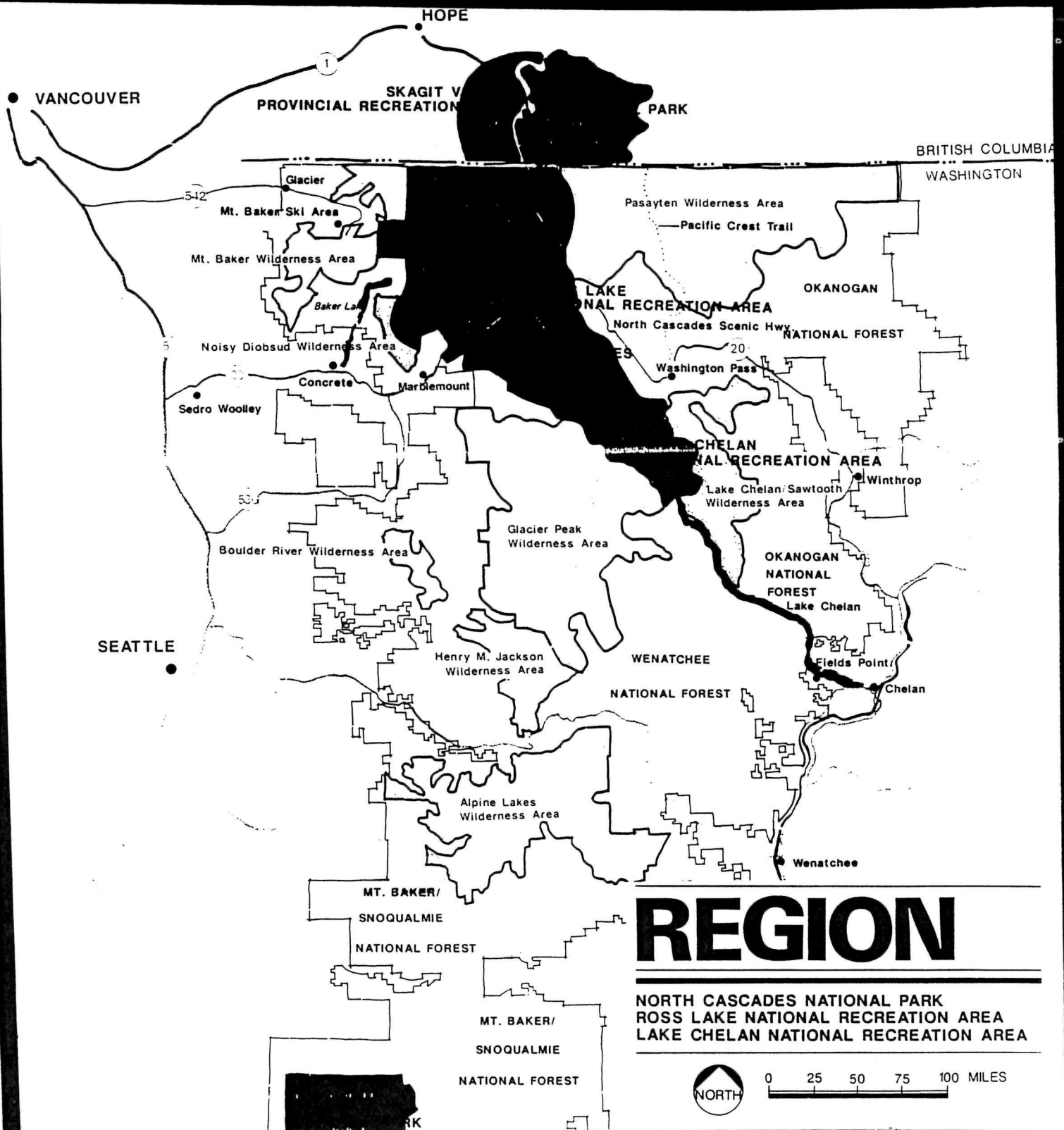
There are 6 major urban centers within 4 hours' drive of the National Park Service Complex: Bellingham, Everett, Seattle, Tacoma, Spokane, and Vancouver, British Columbia. Hiking, backpacking, mountaineering and horseback riding are the most popular activities within the Wilderness. Boating, fishing, hunting and hiking are available in Ross Lake and Lake Chelan National Recreation Areas.

To the technical mountaineer, the North Cascade Range offers a myriad of alpine challenges in the midst of pristine wilderness. Due to the difficulty of access, these pristine areas remained unaltered. However, increased climbing since the late 1970s has begun to impact even the most isolated areas. Day and overnight hiking use has traditionally been concentrated at the more accessible subalpine passes where the views of the mountain ranges, glaciers, snowfields and floral displays are most easily seen. As a result of this concentrated use, many of the pass areas were impacted prior to the establishment of NCNPSC. Shortly after the establishment of North Cascades National Park Service Complex, designated campsites were developed along the trail system. The former dispersed campsites were closed and rehabilitation was started. Currently, about 80 impacted sites and 96 camps are being monitored. Fishing at high lakes for introduced trout has resulted in some lakes receiving heavy impacts. Campsites, proliferating fire rings, garbage and human wastes are all increasing.

Wilderness use has leveled off at about 25,000 visitor nights per year, and it is estimated that there are an additional 20,000 to 25,000 day visitors. Backpacking has decreased while climbing activity has been increasing at an annual rate of about 15% since 1980.

Due to aggressive wilderness management and trail maintenance programs, impacts along the trail system have been reduced and trails are in better condition than when the park was established in 1968. Visitor awareness and increased knowledge of how to use the land without impacting it have resulted in overall improved conditions in the Wilderness.

In addition to resource protection, an active rehabilitation/monitoring program is underway to improve the 1968 resource base. The goal of the trail and climbing patrols is to protect the visitors and resources through example and education.



### Management Standards

**Permit System** The permit system has proven to be an effective tool in reducing impacts and crowding. It serves to reduce human-to-human contacts and, in turn, enhances the visitor's wilderness experience. A Wilderness Permit is required for all overnight stays in the Wilderness. Permits may be reserved up to one month prior to planned start date. No more than 50% of available space for individual sites or crosscountry zones will be reserved in advance. Sites and space not reserved will be issued on a first-come, first-served basis. Permits must be picked up in person before noon of the planned start date. Permits not picked up will be issued on a first-come, first-served basis. Reservations must be requested in writing to: North Cascades National Park, Wilderness District Office, Marblemount Ranger Station, Marblemount, WA 98267. Confirmation of the reservation will be sent. Permits are not required for Pacific Crest Trail users

**Group Size** In Day Use and Trails/Established Camps, the overnight and day-use group size limit is 12 party members or, where stock are permitted, no more than 12 total including stock. In Crosscountry I areas, the party size limit is 12 for overnight and day use. In Crosscountry II areas, the party size limit is six. Oversized parties must have written approval from the Superintendent prior to their arrival in NCNPSC.

**Wood Fires** The use of wood fires has traditionally been associated with outdoor recreation and specifically with wilderness camping. While the use of wood fires for cooking or warming is compatible with wilderness ethics and management, in specific designated areas many of the ancillary activities directly related to the use of wood fires, i.e., removal of forest litter, the cutting of trees, the creation of semi-permanent fire rings, and impact on air quality, are not. Thus, those areas in which wood fires are currently permitted will be closely monitored to insure that the impact related to the use of wood fires does not compromise the wilderness values of the surrounding area. Those areas in which wood fires are permitted and the regulations which accompany the use of wood fires will be clearly delineated on the wilderness map and explained at the time of permit issuance. The use of wood fires at any location throughout the National Park Service Complex may be temporarily suspended at any time by order of the Superintendent due to emergency condition such as high fire danger. Appropriate signing will be conspicuously placed and information provided explaining the extent and purpose of the closure.



### Sanitation

Human waste is currently one of the most difficult problems facing wilderness managers. If a quality wilderness experience is to be maintained, solutions must be found. Few streams or lakes within NCNPSC are free of some human contamination. Pit toilets, where soil permits, will be provided at established camps. Where soil and distance from water do not permit the use of pits, composting toilets will be provided. Everything packed in must be packed out. All traces of human presence must be kept to a minimum. Bathing and laundering will not be permitted within 100 feet of water sources. Swimming without soap is permitted. Water sources include lakes, running water and ponds.

### Stock Use

Stock parties must use established horse camps with the exception of the three crosscountry use areas in Lake Chelan NRA. Stock parties on All-Purpose trails are limited to a combination of 12 persons and stock; in Crosscountry I areas, parties are limited to six pairs of eyes. Pelletized feed must be used; hay is unacceptable. Hitch rails must be used where provided. Stock will not be tied to trees while in camp. Where hitch rails are not provided stock must be tied between two trees or rocks using a tether line.

### Grazing

Grazing is permitted on a limited basis in Lake Chelan and Ross Lake National Recreation Areas. Grazing is not permitted in North Cascades National Park. Grazing will not be permitted within 200 feet of water sources, i.e., lake shores, streams, ponds, rivers and boggy wet lands. Loose herding is encouraged. Picketing is prohibited. Stock will be moved frequently to prevent overgrazing. The user must obtain a grazing permit. The grazing permit may be issued at the time the wilderness permit is issued and must be carried during the trip. Grazing may be suspended or delayed due to wet meadow conditions. The suspension or delays are intended to prevent unacceptable mechanical disturbance to surface soils and vegetation. The holder of the grazing permit will be responsible for assuring that stock are not left unattended and that all other rules and regulations concerning grazing and stock use are complied with.

### Pacific Crest Trail

The PCT is managed in accordance with the Pacific Crest Trail Advisory Board. Permits are not required for those users traveling through on the PCT. Camps along the PCT include Wilsey, Fireweed, Hide-A-Way, South Fork, 6 Mile and North Fork. Pets may accompany hikers if leashed. Any travel off the PCT requires a permit. Pets are not allowed within the National Park off the PCT. Users must camp in established camps. NCNPSC will

take an active role with the PCT Advisory Board with regards to policy and management of this popular trail.

### Developments

390 miles of trail are maintained annually in North Cascades National Park Service Complex. Most rivers are bridged with typical log stringer and split cedar deck bridges. Six suspension-type bridges cross major streams. One cable car is used to cross the upper Chilliwack River.

Three fire lookouts are maintained: Copper Mountain, Sourdough Ridge and Desolation Mountain. Copper Mountain is the only one used on a regular basis by patrol rangers. Three shelters remain: Beaver Pass, Perry Creek, and Flick Creek. Five USGS cabins and two patrol cabins, Fireweed and Junction, are located within the Wilderness. Three radio repeaters are within the Wilderness boundaries.

### Bridges

Bridges may be constructed in locations that, without a bridge, would present significant safety hazards under conditions usually present during the normal period of use. Bridges may include foot logs or be of log stringer-type construction, with hand-split wood decking. Stringers may be pressure treated with a chemical approved by the Chief of Resources Management. Construction material may be cut on site if it does not severely impact the resource. It is more desirable to bring material from outside the park area. Guides for construction can be found in Trails Handbook, North Cascades National Park, Skagit District. The intent is to maintain traditional type and style bridges wherever possible. Cable bridges may be used in place of log stringer bridges if they need to be removed seasonally due to avalanches or high water. Bridge type and size will be commensurate with use.

### Interpretation

Interpretation of natural systems and human impacts on natural systems is a critical aspect of wilderness management. Interpretation via media and formal personal contacts will be done at visitor stations, amphitheaters, and areas near trail heads. Interpretation along wilderness trails will be limited to informal personal contacts and discretely placed interpretive signing to explain cultural sites important to understanding human history and values. Signs will be mounted on wood posts and backing will be low key in color and contrast. Signs will be no larger than 170 square inches.

Every effort should be made to interpret wilderness values to Park Complex neighbors. Public understanding is essential to achieve respect for the resource, restraint, and willingness to adhere to appropriate uses. Such public understanding and

voluntary compliance provide the desirable alternative to imposition of restrictions and regulations.

### Cultural Resources

Both historic structures and prehistoric archeological sites occur in the wilderness. Management is in accordance with the North Cascades National Park Service Complex General Management Plan (1988) and the Natural and Cultural Resources Management Plan (1988), which are, in turn, in accordance with Federal cultural identification, assessment, and treatment of cultural resources.

Some historic structures have been listed on the National Register of Historic Places and additional ones may be nominated in the future. Maintained historic structures will be used, where feasible, for patrol and administrative operations.

No prehistoric archeological sites in the wilderness have been assessed as eligible for or have been nominated to the National Register of Historic Places, although this may be done in the future. Any proposed land-disturbing activities in the wilderness, such as new trails and campgrounds, will be assessed for their affect to cultural resources.

### Crosscountry Travel

Open fires, stock use (except for Rainbow Creek, Boulder Creek, 4 Mile Creek) and camping in meadows are prohibited. Wilderness permits are required for all overnight stays, and parties are encouraged to sign in and out on the climbing register. Visitors must camp at least 1/2 mile from maintained trails and one mile from established camps. Party size is limited to six, and the number of parties may be limited in some regions.

### Minimum Tool

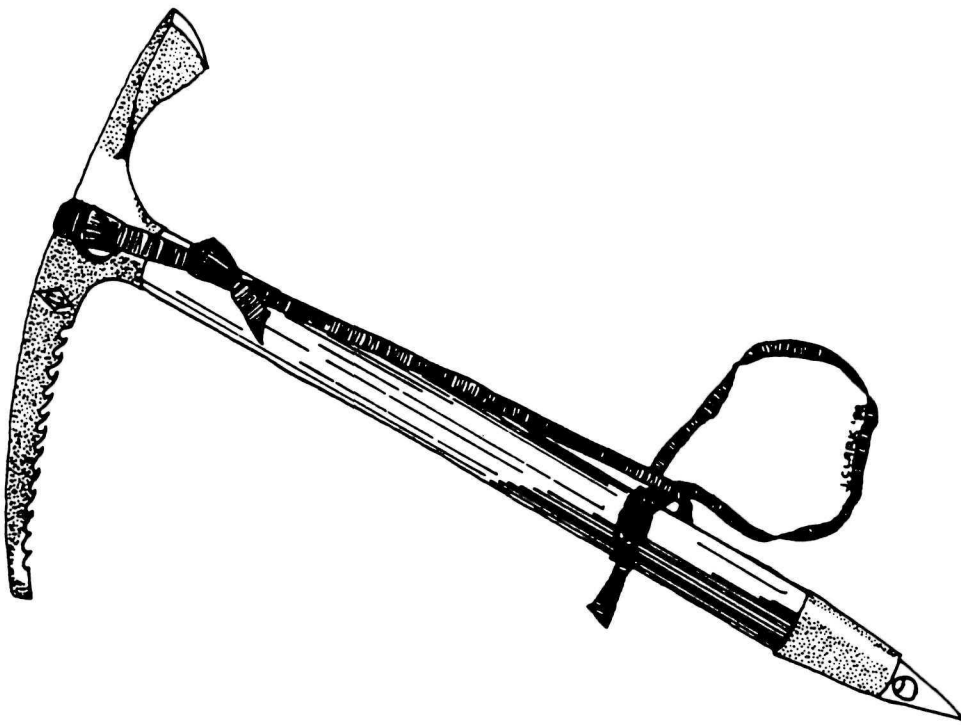
Non-power tools will be preferred. The Wilderness District Ranger will have final approval for the use of power tools. All contracts will consider the use of non-power tools. Any use of power tools will be limited as far as possible to before the 4th of July and after Labor Day. All power tools will use a modified muffler that reduces decibel level below <sup>4</sup>. Power tools will be limited to chain saws, brushers, rock drills, chain saw winches, and explosives. Contractors will be required to meet these standards.

Aircraft may only be used if stock use is not permitted on trails, trail conditions prevent stock use, or it is impractical to use stock and there is no other practical way to accomplish the work. Aircraft use will be confined to Monday through Thursday and as much as possible to before the 4th of July and after Memorial Day. Emergency operations are exempt. All helicopter operations will comply with NCNPSC's Helicopter Use Management Plan.

In Day Use (Appendix A) and Trail/Camp Areas, the use of power tools is permitted when the Trails Foreperson has considered non-power tools and found them to be ineffective, inappropriate, unsafe, or when it would be impossible to complete the work load or maintain the standards outlined in this plan.

In Crosscountry I, power tools will be permitted only if not using them would make it impossible to complete the task or would present a safety hazard to visitors or employees. Written permission must be granted from the Wilderness District Ranger in advance.

In Crosscountry II, power tools are prohibited.



Staffing (1989 level)

The management of the wilderness is a shared responsibility designed to protect the resource while, at the same time, provide visitors with a safe, quality wilderness experience. The Wilderness District Ranger stationed at Marblemount has primary responsibility for the overall day-to-day and long-range management of the Wilderness. Chief of Resources Management and staff have responsibility for long-range resource management of the wilderness. The Trails Foreperson has responsibility for overall maintenance of trails and camps.

Wilderness Management PersonnelPermanents

Wilderness District Ranger.....	1
Chief of Resources Management.....	1
Resources Management Staff.....	6
Trails Foreperson.....	1
Trail Maintenance Workers.....	3

Seasonals

Wilderness Rangers.....	5
Climbing Rangers.....	2
Information Center Supervisor.....	1
Information Center Rangers.....	1
Trail Maintenance Workers.....	9

Volunteers

Student Conservation Association.....	8
Volunteers in Parks.....	3

Staffing Needs

Wilderness Assistant District Ranger.....	1
Wilderness Rangers (seasonal).....	6
Information Center Rangers (seasonal).....	2
Climbing Rangers (seasonal).....	2
Resource Management Ranger.....	1
Trails Laborers.....	4

Staffing needs include loss of staff due to budget short falls over the past 6 years and projected needs to implement this plan and continue the protection of the resource and quality visitor services.

## Section Two

### Area Classifications

Four areas of classification are used to define and describe opportunity class: Day Use, Trailed/Established Camps, Crosscountry I, and Crosscountry II. These terms were chosen because they best represent the current types of use in North Cascades National Park Service Complex.

They are designated based on the following criteria:

1. Type and amount of use;
2. Accessibility and challenge;
3. Opportunity for solitude;
4. Current resource conditions;
5. Management uses.

Day Use Area is closed to camping and fires. Stock use is limited to all purpose trails. Day-hiking visitation is high, with some overnight visitors passing through enroute to their final destinations. Most areas are within one to three hours' hiking time from a trailhead on trails maintained to standard specifications. Opportunity for solitude is generally low, averaging more than twenty parties per day. In more isolated areas like Park Creek Pass and Easy Pass, the opportunity for solitude is high. Presence of park staff is generally high, with a 90% chance of meeting a ranger in the higher use areas. Toilet facilities may be available. Visitor education in the form of trail guides or interpretive talks may be available. Impacts from camping and other activities are rehabilitated. Parties are limited to 12 visitors. Limiting the numbers of parties that visit an area may be implemented to reduce impacts. Frontcountry visitor education efforts of all types are utilized. Areas include: Cascade Pass, Mix-up Arm, Sahale Arm, Horseshoe Basin, Maple Pass, Park Creek Pass, Easy Pass, and Pyramid Lake.

Trailed/Established Camp Area receives moderate day use and moderate camping use. Camping is restricted to designated sites and party size is limited to 12. Fires are restricted to camps where fire grates are provided; all other camps are stoves only. Stock parties are limited to a combination of 12 persons and stock. Access to major destination areas is from two hours' to several days' hiking on trails maintained to standards. Opportunity for solitude ranges from low where day use and camping overlap, to high at campsites several days distance from the trailhead. Presence of park staff is moderate with a 25-50% chance of meeting a ranger or trail crew member. Individual sites are limited to six per camp and are maintained to standard specifications. Visitor education is extensive at permit-issuing stations and during on-site contacts. Use limits are based on



the number of sites within a camp and the number of tent pads per site. The average number of sites at a camp is three, and the average number of tent pads is four. There are 96 established camps with the potential of accommodating over 750 visitors per night. In the large forest drainages, hikers may choose to camp in any of a number of camps as long as they do so in unoccupied, established sites. At popular camps, it may be difficult to find space during the weekends of July and August. These areas include Copper Ridge, Thornton Lakes, Monogram Lake, Pelton Basin and Fisher Basin, among others. 390 miles of trail are maintained. See appendix B.

Crosscountry I Area includes popular climbing routes and bivouac sites. These receive about 75% of all climbing activity in NCNPSC. The routes were established unintentionally by climbers traveling to the climbing areas. This area receives minimal day use and moderate to high camping use, both at designated sites and in crosscountry areas. In Lake Chelan NRA stock use is permitted in Rainbow Creek, Boulder Creek and 4 Mile Creek crosscountry areas. Visitors must camp at least 1/2 mile from maintained trails and one mile from established camps. Subalpine meadows are closed to camping. Fires are prohibited. Party size is limited to 12 and the number of parties are limited in some areas of heavy use. Horse parties are limited to a combination six visitors and stock. Access is at least a two-hour hike on non-maintained routes ranging from easy hiking to technically difficult, requiring knowledge and skills in route-finding and mountaineering.

Opportunity for solitude is moderate to high. Presence of park staff is high in areas of high use. The opportunity for contacting a ranger is from 25 to 90%, depending upon area and day of week. Designated sites, where present, are maintained to the same standards as Trails/Established Camps but with minimal developments. Composting toilets may be present in areas of heavy use. Impacts caused by camping outside designated sites will be rehabilitated, and areas may be closed to camping. Non-maintained routes which threaten the quality of the resource will be rehabilitated. Visitor education will be extensive both at permit-issuing stations and in the field. Backcountry permits are required for all overnight stays, and climbers are encouraged to sign in and out on a climbing register. No mechanical tools for maintenance will be used without advance written request for a variance from Wilderness District Ranger. Aircraft may be used for emergencies and, to a limited extent, for administration of the area. Administrative use will be limited as much as possible to a period before July 4 and after Labor Day and during weekdays of Monday through Thursday. Areas include: Boston Basin, Eldorado, and Mount Shuksan (see pages 43 and 44)



Crosscountry Area II represents about 90% of the wilderness and is the most pristine, with little evidence of human presence. It receives little-to-no day use. Fires, stock use, and camping in meadows are prohibited. Wilderness permits are required for all overnight stays, and parties are encouraged to sign in and out on the climbing register. Visitors must camp at least 1/2 mile from maintained trails and one mile from established camps. Party size is limited to six party members, and the number of parties may be limited in some regions. Access is more than six hours from a road trailhead, maintained trail or climbers' route. Routes are minimally visible or non-existent, and require knowledge of route-finding and/or require knowledge and skills in mountaineering. Opportunity for solitude is high. Presence of park staff is low with less than a 10% chance of contact. Human impact is not acceptable for camps or routes. Impacted sites will be rehabilitated and/or closed. Signing is not permitted. Three radio repeaters are now located within this area. Two may be moved into the Trails/Established Camps area. Three USGS snow pillows and five snow courses are also located within this area.

Aircraft use will be limited to emergencies and administrative use only. Administrative use must be requested and justified in advance; the Wilderness District Ranger or Chief Ranger must approve all flights in advance. Flights should be strictly limited and a report of all landings will be made by the Wilderness District Ranger to the Superintendent at the end of each calendar year.



### Section 3

#### Factors and Indicators For Evaluating Change

The following factors and indicators were selected for evaluating social and resource change in the four classifications: Day Use, Trails/Established Camps, Crosscountry I, and Crosscountry II.

<u>Factors</u>	<u>Indicators</u>
Area Conditions	Disturbed vegetation, human waste, water quality, bare ground, garbage fire rings or scars.
Amount of Use	Number of visitors counted from wilderness permits, staff contacts, trail counters.
Trail/Route Conditions	Tread width, exposed roots, safety hazards, grade, down timber, brush, rocks, cable cars and cable bridges, puncheon, turnpike, avalanche paths. stream and river fordings.
Opportunity for Solitude	Number of visitor-visitor and visitor-staff contacts per day, distance from trailhead, road or trunk trail.
Accessibility and Degree of Challenge	Weather, route or trail condition, crosscountry travel routes, time of year.
Water Quality	Washington Administrative Code.
Management Tools	Cabins, radio repeaters, fire lookouts, shelters, bridges, cable cars, aircraft, research equipment, toilets, composters, stock use, power tools, signing, tent platforms, staff contacts.

Section 4Inventory of Existing Social and Resource ConditionsSocial Conditions

The following is the range for the possibility of meeting other visitors for each classification.

Area	Day Use	T/E Camps	CC I	CC II
Possible Contacts Per Day	1-70	0-50 =	0-20	0-6
Average Nights' Stay	-----	2.8	3.0	3.8
Total Range of Possible Contacts	1-70	0-140	0-60	0-18

Opportunity For SolitudeDay Use, Contacts Per Day

0-10 = low use - high solitude

10-20 = moderate use and solitude

20+ = high use - low solitude -

Overnight, Contacts Per Day

0-5 = low use - high solitude

0-20 = mod. use - mod. solitude

5-9 = mod. use - mod. solitude

9+ = high use - low solitude-

Resource Conditions

Degree of accessibility is ranked easy to moderate or difficult.

Easy: maintained trails and grades of 8% or less.

Moderate: maintained trails with grades greater than 8% and unmaintained routes.

Difficult: routes with little visible human impact requiring knowledge and skills in route finding and/or mountaineering.

Trail Conditions are rated according to trail standards (see Appendix B).

Water Quality is rated using Washington Administrative Code, Chapters 173-201.

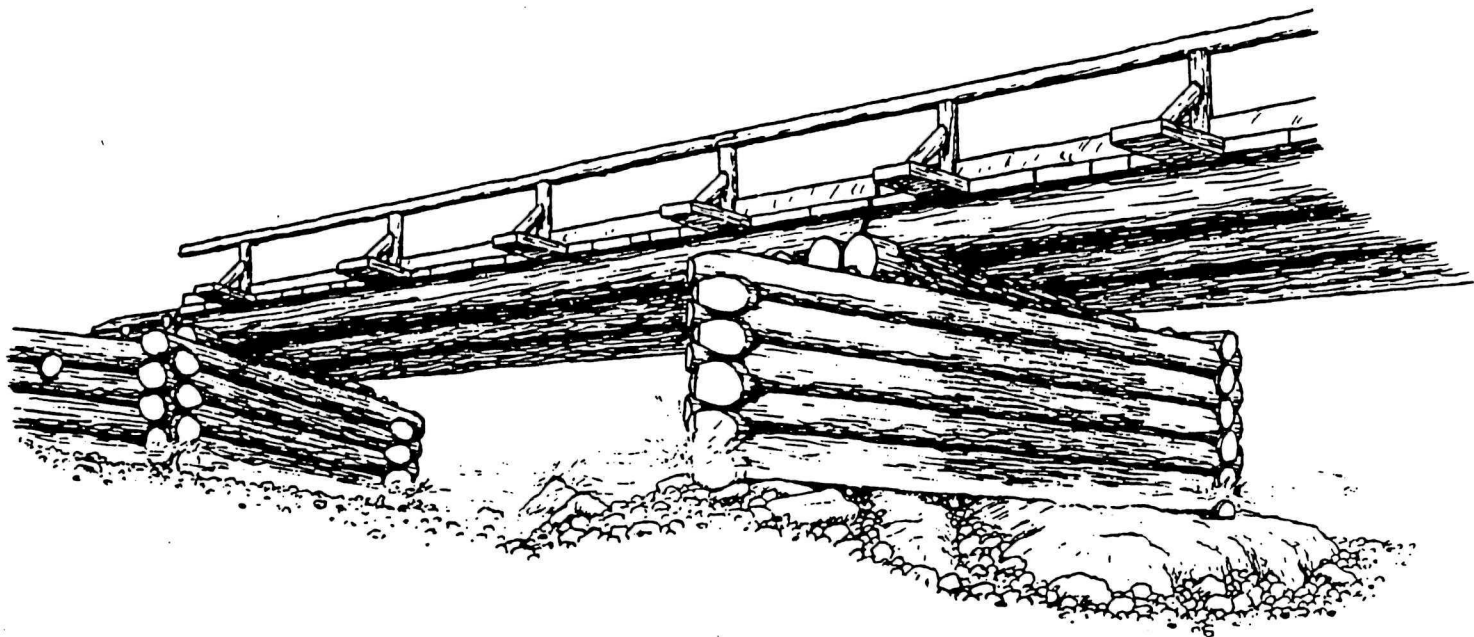
Area Conditions are evaluated by the amount of disturbed vegetation, fire rings and scars, bare ground, unnatural noise, air quality, garbage, and human waste.

Wildlife Condition is evaluated by the impact that visitors and park staff have on them.

Management Tools are evaluated by their effect on the wildlife, wilderness resources, visitors' wilderness experience, the ability to maintain the Wilderness Standards as stated in this plan, and costs of using minimum tool.

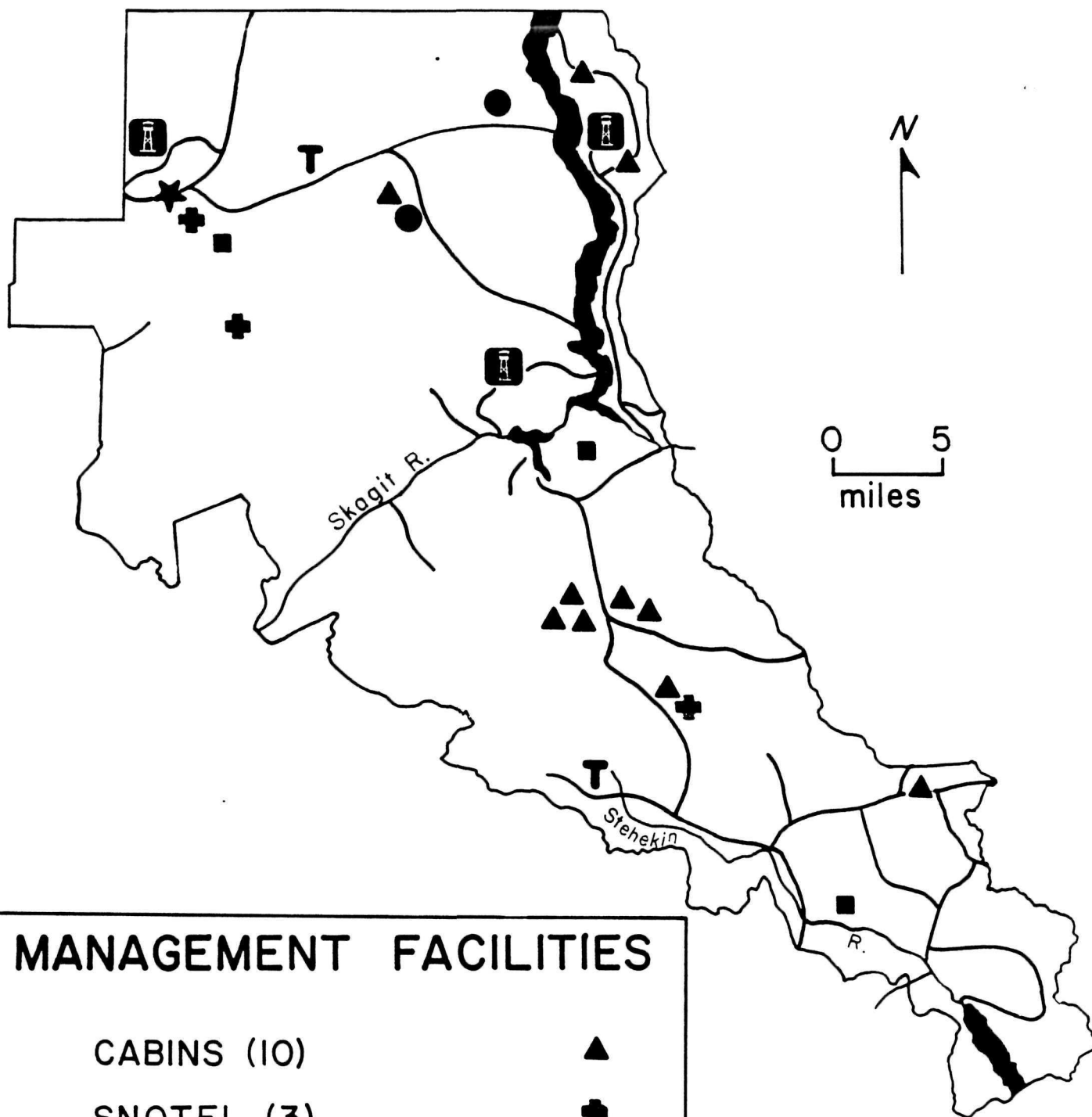
<u>Resource Inventory</u>
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Area	Inventory
Day Use	75 impacted sites closed to camping and being monitored and revegetated.  20 impacted sites closed to camping, no action taken at this time.
Trailed/Established Camps	70 closed impacted sites 114 hiker/horse camps are monitored.
Crosscountry I	Four designated camps, one monitored, 20 undesignated sites.
Crosscountry II	No designated sites.



Management Inventory
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= Areas	Inventory
Day Use	1 storage box 1 site hardened 1 Wallowa toilet 2 composters
Trailed/Established Camps	13 storage boxes 86 Wallowa toilets 5 composters 3 lookouts 2 patrol cabins 5 shelters 5 USGS cabins 4 tent platforms 17 historic structures 1 cable car 5 snow courses
Crosscountry I	2 storage boxes 1 tent platform 2 Wallowa toilets 1 composter
Crosscountry II	3 radio repeaters 3 USGS snow pillows 6 snow courses



## MANAGEMENT FACILITIES

CABINS (10)	▲
SNOTEL (3)	✕
TRAILS	—
SHELTERS (2)	●
CABLE CAR (1)	★
FIRE LOOKOUTS (3)	⌚
TENT PLATFORMS (5)	T
RADIO REPEATERS (3)	■



Section 5Standards for Social and Resource Indicators**A. Day Use**Social Indicators

**Factor:** Type and amount of use

**Indicators:** Number of visitors and stock using an area per day.

**Standards:** Day use is recognized as a significant portion of the wilderness visitation within North Cascades National Park Service Complex. Party size is limited to 12. There is currently little data regarding the impacts associated with day use. Some areas receive as many as 200 visitors per day during summer weekends. Stock use may be encountered. Research designed to develop data regarding the amount, type and significance of day-use impacts should begin as soon as possible. Management of day use areas will consist of impact monitoring and the implementation of programs designed to reduce impacts. These may include visitor education, trail guides, revegetation, trail relocations, site hardening, temporary closures and possible restrictions on the amount of use in fragile or heavily impacted areas.

**Factor:** Opportunity for solitude

**Indicators:** Number of visitor-visitor, visitor-stock and visitor-staff contacts per day.

**Standards:** Low opportunity for solitude with an average of more than 20 visitor-visitor contacts per visit. In isolated cases, stock may be heavy; duration of contact is limited. Presence of park staff in some areas high, with a 90% chance of contact.

Resource Indicators

**Factor:** Water Quality

**Indicators:** Presence of fecal coliforms

**Standards:** All waters in the Wilderness will meet the water quality standards as stated in Chapters 173-201, sub-paragraphs 045, 050, 070, and 080 of the Washington Administrative Code. If abnormal fecal coliform counts are found attempts will be made to isolate the source of contamination. Corrective action will be taken if contamination is from a human or livestock source. Visitors will be advised of any known specific problems. Visitors contacted by park staff will be advised to boil

drinking and cooking water for at least one minute; if it is cloudy or turbid, for 3-5 minutes. Information will be available at contact stations concerning water treatments and visitor responsibility for protecting themselves and others from spreading Giardia.

**Factor:** Wildlife

**Indicators:** Bear, deer, and rodents in camps, visitors food and equipment being eaten and/or destroyed, impacted vegetation.

**Standards:** No abnormal numbers of wildlife around heavy day use areas.

Toilets should be used where provided. Visitors will be encouraged to urinate on rocks, old logs or any resilient, non-vegetated sites since deer impact vegetation while getting salt from urine. Other standards are located on the back of the Main Trails & Wilderness Camps Areas map (see Appendix A).

**Factor:** Area condition

**Indicators:** Disturbed vegetation, fire rings or scars, bare ground, garbage, human waste.

**Standards:** Area is closed to camping. Impacts resulting from camping or overuse are revegetated or rehabilitated. Pit or composting toilets may be provided. Fires are prohibited.

**Factors:** Trail Conditions

**Indicators:** Tread width, exposed roots, safety, grade, traverses, switchbacks, short cutting, stream crossings, brush, hazard trees, avalanche hazards, late snow melt, braided trails, erosion, bridges, turnpiking, water bars, and culverts.

**Standards:** Trails are maintained to standards as specified in the Wilderness Trails Standards (Appendix B). Bridges may be constructed in locations that, without a bridge, would present significant safety hazards under conditions usually present during the normal period of use. Bridges may include foot logs or be of log stringer-type construction, with hand-split wood decking. Cable bridges may be used in place of log stringer bridges if they will be removed seasonally due to high water or avalanches. Stringers may be pressure treated with a chemical approved by the Chief of Resources Management. Construction material may be cut on site if it does not severely impact the resource. It is more desirable to bring material from outside the park area. Guides for construction can be found in Trails Handbook, North Cascades

National Park, Skagit District. The intent is to maintain traditional-type bridge style wherever possible. Cable bridges may be used in place of log stringer bridges if they need to be removed seasonally due to avalanches or high water. Approval of new construction or the replacement of old bridges will be done at the district level see Appendix B).

- Factor:** Accessibility and degree of challenge  
**Indicators:** Distance from trailhead and trail standards.  
**Standards:** Major destinations within three hiking hours of trailhead on trails maintained to standards for trail classification. Degree of challenge will be easy to moderate.
- Factor:** Management Tools  
**Indicators:** Stock, power tools, aircraft, toilets, composters, site hardening, signs.  
**Standards:** Cabins, tent platforms, radio repeaters, fire lookouts, crew camps will not be allowed. Stock may be used only on all-purpose trails. Power tools will be permitted only after non-power tools have been considered and found to be ineffective, inappropriate, or unsafe. The Trails Foreperson will be responsible for using the appropriate minimum tool. If used, power tools will be confined to a period of time before the 4th of July and after Labor Day as much as possible. All power tools will be equipped with a modified muffler that reduces the decibel level. Aircraft may be used if stock use is not permitted on trails, trail conditions prevent stock use, or it is impractical to use stock. Aircraft use will be confined to Monday through Thursday and as much as possible to the period before the 4th of July and after Labor Day. Search-and-rescue operations are exempt. All helicopter operations will comply with NCNPSC's Helicopter Use Management Plan. Toilets will be provided in the form of pit toilets or composters where there is a need to protect visitor health and water quality. Site hardening may be considered if all other options for preventing impacts have been weighed. Signing will be in accordance with the Wilderness Sign Plan (see Appendix C). Camps, campsites, toilets and water (if hard to find), will be signed using a post no more than four feet above ground. Vertical lettering or symbols will be used.

## B. TRAILED AND ESTABLISHED CAMPS, HIKERS (Appendix A)

### Social Indicators

- Factor:** Type and amount of use
- Indicators:** Number of in-field contacts by staff and Wilderness permits.
- Standards:** Camping is permitted in designated camps only. Party size is limited to 12; average party size is 2.8.
- 
- Factor:** Opportunity for solitude
- Indicators:** Number of visitor-visitor contacts and visitor to staff contacts per day.
- Standards:** Moderate to high opportunity for solitude. In areas where day use and overnight use overlap, it is acceptable to meet 5 to 10 parties per day. In areas of one or more days hike from the trailhead, no more than five parties should be encountered. Presence of park staff is moderate in most areas with 25% chance of contact. In popular areas or sensitive areas, or high lakes, the presence of park staff is high, with an 80% chance of contact.

### Resource Indicators

- Factor:** Condition of camps and campsites
- Indicators:** Designated camps are evaluated by the number of campsites in a camp, amount of bare ground, disturbed vegetation, exposed roots, visitor developments, tent platforms, human waste and garbage. Location of camps will be evaluated by their distance from other camps, from main trails, water, and impacts on other resources. Signs that mark the camp, campsites, toilet, and water will be evaluated on condition and type of post. Toilets will be evaluated on degree of privacy, location in relation to trails, campsites and water, condition of hole and Wallowa toilet box. Hazard trees will be evaluated by number and location.
- Standards:** Designated camps will be located at least 100 feet from water and out of sight and sound of the main trail. Camps are limited to six campsites which must be out of sight of each other, where terrain permits. Campsites may have two tent pads and will be constructed on the most resilient space available. Where bare ground, disturbed vegetation, exposed roots, or any combination thereof increase 25% by the original constructed campsite or baseline data, the site must be

rehabilitated, closed or use limited until standards are met.

Visitor developments, shelters, fire rings, benches and garbage pits will be removed and the area rehabilitated. Tent platforms will only be used when all other alternatives have been explored.

Signing will be in accordance with the Wilderness Sign Plan (see Appendix C). Sign boards in the Wilderness will be used only when a post will not sufficiently convey the information required. All other signs in the wilderness will be wooden posts with vertical lettering or symbols. Lettering will be approximately 1-3/16" Gothic capitals. Letters will be engraved by router and charred. Posts will be unpainted. Signs will be placed at important junctions, camp entrances, campsites, toilet and water trails.

Toilets should be at least 200 feet from surface water. Pits will be at least 30" deep, backfilled when 3/4 full, and a new pit dug. If the water table is high, distance from water requirement cannot be met, or the soil prevents digging a 30" deep pit, a composter will be considered.

Composting toilets will consist of a Wallowa box with a bucket to collect wastes, and a composting bin. The end product will be disposed of as outlined in the Skagit Composting Handbook. Both pit and composting toilets should be far enough from camps and trails to provide privacy and yet near enough to ensure use.

Hazard trees will be managed according to the Wilderness Hazard Tree Plan. Camps may be closed and moved if there are too many hazard trees and cutting them would greatly impact the resource. Fires are permitted in sites where fire grates are provided. Fire grates will be cleaned of garbage and ashes as needed. Fire grates will consist of a simple grate supported by a single pipe buried in the ground.

Garbage will be packed out.

**Factor:** Wildlife

**Indicators:** Bear, deer, and rodents in camps, visitors' food, eaten and equipment destroyed, vegetation impact.

**Standards:** No abnormal numbers of wildlife in camps or around heavy day use areas. Visitors will be instructed to hang food and equipment at night and when away from camp. All food cooked for a meal should be eaten - no leftovers. Cooking and eating equipment should be cleaned as soon as meal is over. Bear proof food containers will be used where hanging of food is not possible.

Toilets should be used where provided. Visitors will be encouraged to urinate on rocks, old logs or any resilient non-vegetated sites, since deer impact vegetation while eating salt from urine. Other standards are located on the back of the Main Trails & Wilderness Camps Areas map (see Appendix A).

**Factor:** Trail Conditions  
**Indicators:** Tread width, exposed roots, safety hazards, grade, downed timber, brush, rocks, cable cars, turnpike, avalanche paths, fords, bridges.  
**Standards:** Trails are maintained to standards as specified in the Wilderness Trails Standards (Appendix B). Bridges may be constructed in locations that, without a bridge, would present significant safety hazards under conditions usually present during the normal period of use. Bridges may include foot logs or be of log stringer-type construction, with hand-split wood decking. Cable bridges may be used in place of log stringer bridges if they will be removed seasonally due to high water or avalanches. Stringers may be pressure treated with a chemical approved by the Chief of Resources Management. Construction material may be cut on site if it does not severely impact the resource. It is more desirable to bring material from outside the park area. Guides for construction can be found in Trails Handbook, North Cascades National Park, Skagit District. The intent is to maintain traditional type bridge style wherever possible. Cable bridges may be used in place of log stringer bridges if they need to be removed seasonally due to avalanches or high water. Approval of new construction or the replacement of old bridges will be done at the District level.

**Criteria:** Resource

**Factor:** Water Quality

**Indicators:** Presence of fecal coliforms

**Standards:** All waters in the wilderness will meet the water quality standards as stated in Chapters 173-201, sub-paragraphs 045, 050, 070, and 080, of the Washington Administrative Code. If abnormal fecal coliform counts are found, attempts will be made to isolate the source of contamination. Corrective action will be taken if contamination is from a human or livestock source. Visitors will be advised of any known specific problems. Visitors contacted by park staff will be advised to boil drinking and cooking water for at least one minute; if it is cloudy or turbid, for 3-5



minutes. Information will be available at contact stations concerning water treatments and visitor responsibility for protecting themselves and others from spreading Giardia.

**Factor:** Accessibility and degree of challenge

**Indicators:** Distance between camps on maintained trails and weather conditions.

**Standards:** Distance between camps varies from less than one hour to several days' hike on trails maintained to standards as specified in the Wilderness Trails Standards.

Weather conditions and time of year will affect accessibility and degree of challenge. Even during the summer, winter-like conditions may be encountered at higher elevations. High water may flood trails making travel impossible.

**Factor:** Management Tools

**Indicators:** Backcountry permits, shelters, patrol cabins, fire lookouts, tent platforms, radio repeaters, work crew camps, signs, toilets, composters, minimum tool, aircraft, research equipment.

**Standards:** Backcountry permits are required for all overnight stays. Permits may be reserved up to one month prior to planned start date. No more than 50% of available space for individual sites or crosscountry zones will be reserved in advance. Sites and space not reserved will be issued on a first-come, first-served basis. Permits must be picked up in person before noon of the planned start date. Permits not picked up will be issued on a first-come, first-served basis.

**Shelters:** Perry Creek, and Flick Creek will be maintained. Beaver Pass is closed except for emergency. Beaver Pass maintained until it is no longer practical. Replacement roofs will be constructed of native cedar shakes. No new shelters will be constructed.

**Patrol Cabins:** Beaver Pass, Junction, Meadow, Freezeout, New Hozomeen, and Thunder Basin cabins will be removed in an orderly fashion. All cabins will be removed by 1992. Any replacement cabins will be placed out of sight of trails and will be constructed of logs with shake roofs and have an area no larger than 200 square feet. Building material will not be cut on site or within the Wilderness.

**Fire Lookouts** will be maintained as long as they can be justified on the basis of need and as long as it is practical to maintain them. When the need no longer exists or it is impractical for



them to be maintained, consultation for removal will begin with the SHPO. Roofs will be shake or shingle construction and the buildings will be painted a color that meets minimum impact standards.

**Tent Platforms** will be used only if terrain, prevention of impact, or safety does not allow construction of conventional sites. Construction will be of material that will withstand the area snow load. They will be constructed as low to the ground as possible. A corner of the platform will be covered with metal to protect the wood while cooking.

**Radio Repeaters:** Where coverage permits, repeaters should be removed from Crosscountry II and housed at existing lookouts. The antennae should be a simple "whip" type and, if possible, should avoid using towers. If practical, solar panels should be mounted on the roof of the lookout.

**Work Crew Camps:** Established hiker/horse camps should be used before creating a separate work camp, but, if needed, new work camps must be out of sight of trails and established camps. A resilient site will be agreed on by the Area District Ranger and Trails Foreperson. The site will be rehabilitated and marked on a map which will be given to the District Ranger. All toilets, associated trails, and facilities will be obliterated. Work camps will not be established in Day Use Area.

**Signs (Appendix C):** Sign boards in the Wilderness will be used only when a post will not sufficiently convey the information required. All other signs in the wilderness will be wooden posts with vertical lettering or symbols. Lettering will be approximately 1-3/16" Gothic capitals. Letters will be engraved by router and charred. Posts will be unpainted. Signs will be placed at important junctions, camp entrances, campsites and toilet and water trails.

**Toilets:** Camps will have either a Wallowa or composting toilet. Pits will be at least 30" deep and backfilled when 3/4 full. They will be placed far enough from camps and trails to provide adequate privacy but near enough to be used. They will be at least 200 feet from any surface water. Composting toilets will be used if ground water, distance from surface water, or soil type prevents digging a 30" deep pit. Composters will consist of a Wallowa, a bucket to catch the wastes, and a composting bin.

**Minimum Tool:** Power tools will be permitted when non-power tools have been considered and found to be ineffective or inappropriate for the job. Considerations will be type of work, safety, weather, distance, amount of work to be accomplished, number of visitors using the area, and the effect on wildlife. The Wilderness District Ranger will be responsible for approving the minimum tool. Acceptable power tools are chain saws, power winches, hand-held rock drills, hand-held power brushers and explosives. All power tools will be equipped with a modified muffler that reduces the decibel level.

Aircraft may only be used if stock use is not permitted on trails, trail conditions prevents stock use, or it is impractical to use stock and there is no other practical way to accomplish the work. Aircraft use will be confined to Monday through Thursday and as much as possible to before the 4th of July and after Memorial Day. Emergency operations are exempt. All helicopter operations will comply with NCNPSC's Helicopter Use Management Plan.

Research equipment will be confined to areas where visitor contact is likely to be very limited. All equipment should be located so as not to attract visitors or to detract from their wilderness experience. Equipment will be removed as soon as data is collected. Researchers will be bound to the same camping regulations as other visitors and will advise permit issuing stations of their intentions and make their collecting permit available. Researchers must carry their permit with them while in the field.



## C. Stock Camps

### Social Indicators

**Factor:** Type and amount of use

**Indicators:** Number of in-field contacts by staff and Wilderness

**Standards:** Stock parties are limited to a combination of 12 persons and stock.

**Factor:** Opportunity for solitude

**Indicators:** Number of visitor-visitor contacts and visitor-to-staff contacts per day.

**Standards:** Moderate-to-high opportunity for solitude. In areas where day use and overnight use overlap, it is acceptable to meet 5 to 10 parties per day. In areas of one or more days hike from the trailhead no more than five parties should be encountered. Presence of park staff is moderate in most areas with 25% chance of contact. In popular areas or sensitive areas, or high lakes, the presence of park staff is high, with an 80% chance of contact.

### Resource Indicators

**Factor:** Condition of camps and campsites

**Indicators:** Designated camps are evaluated by the number of campsites in a camp, amount of bare ground, disturbed vegetation, exposed roots and human developments, waste and garbage. Signs that mark the camp, campsites, toilet, and water will be evaluated on condition and type of post. Toilets will be evaluated on degree of privacy, location in relation to trails, campsites and water, condition of hole and Wallowa toilet box. Location of camps will be evaluated by their distance from other camps, main trails, water, and impacts on other resources. Hazard trees will be evaluated for their potential for injuring visitors and stock. Hitchrails will be evaluated on number, condition, distance from cooking and sleeping areas, water, and drainage.

**Standards:** Designated camps will be located at least 100 feet from water and out of sight and sound of the main trail. Stock camps shall not be located on a lake shore or on low wet terrain. Camps are limited to four tent pads. When terrain or use requires that stock and hiker camps be near each other and they are located on a stream, the stock camps shall be

downstream from the hiker camps. Where bare ground, disturbed vegetation, exposed roots, or any combination thereof increase by 25% the original constructed campsite or baseline data, the site must be rehabilitated, closed, or use limited until standards are met.

Visitor developments, shelters, fire rings, benches, and garbage will be removed and the area rehabilitated.

Tent platforms will only be used when all other alternatives have been explored.

Signing will be in accordance with the Wilderness Sign Plan (Appendix C). Sign boards in the Wilderness will be used only when a post will not sufficiently convey the information required. All other signs in the wilderness will be wooden posts with vertical lettering or symbols. Lettering will be approximately 1-3/16" Gothic capitals. Letters will be engraved by router and charred. Posts will be unpainted. Signs will be placed at important junctions, camp entrances, campsites, toilet and water trails.

Toilets should be at least 200 feet from surface water. Pits will be at least 30" deep, backfilled when 3/4 full, and a new pit dug. If the water table is high, distance from water requirement cannot be met, or the soil prevents digging a 30" deep pit, a composter will be considered. Composting toilets will consist of a Wallowa box with a bucket to collect wastes, and a composting bin. The end product will be disposed of as outlined in the Skagit Composting Handbook. Both pit and composting toilets should be far enough from camps and trails to provide privacy and yet near enough to ensure use.

Hazard trees will be managed according to the Wilderness Hazard Tree Plan. Camps may be closed and moved if there are too many hazard trees and cutting them would greatly impact the resource. Fires are permitted in sites where fire grates are provided. Fire grates will be cleaned of garbage and ashes as needed. Fire grates will consist of a simple grate supported by a single pipe buried in the ground.

Garbage will be packed out.

**Factor:** Wildlife

**Indicators:** Bear, deer, and rodents in camps, visitors' food, being eaten and equipment destroyed, impacted vegetation.

**Standards:** No abnormal numbers of wildlife in camps or around heavy day use areas. Visitors will be instructed to hang food and equipment at night and when away from camp. All food cooked for a meal should be eaten, no leftovers. Cooking and eating equipment should be cleaned as soon as meal is over. Toilets should be used where provided. Visitors will be encouraged to urinate on rocks, old logs or any resilient non-vegetated sites, since deer impact vegetation while eating salt from urine. Other standards are located on the back of the Main Trails & Wilderness Camps Areas, map (Appendix A).

**Factor:** Trail Conditions

**Indicators:** Tread width, exposed roots, safety hazards, grade, downed timber, brush, rocks, cable cars, turnpike, avalanche paths, fords, bridges.

**Standards:** Trails are maintained to standards as specified the Wilderness Trails Standards (Appendix B). Bridges may be constructed in locations that, without a bridge, would present significant safety hazards under conditions usually present during the normal period of use. Bridges may include foot logs or be of log stringer-type construction, with hand-split wood decking. Cable bridges may be used in place of log stringer bridges if they will be removed seasonally due to high water or avalanches. Stringers may be pressure treated with a chemical approved by the Chief of Resources Management. Construction material may be cut on site if it does not severely impact the resource. It is more desirable to bring material from outside the park area. Guides for construction can be found in Trails Handbook, North Cascades National Park, Skagit District. The intent is to maintain traditional-type bridge style wherever possible. Cable brides may be used in place of log stringer bridges if they need to be removed seasonally due to avalanches or high water. Approval of new construction or the replacement of old bridges will be done at the District level.

**Criteria:** Resource  
**Factor:** Water Quality  
**Indicators:** Presence of fecal coliforms  
**Standards:** All waters in the wilderness will meet the water quality standards as stated in Chapters 173-201, sub-paragraphs 045, 050, 070, and 080, of the Washington Administrative Code. If abnormal fecal coliform counts are found, attempts will be made to isolate the source of contamination. Corrective action will be taken if contamination is from a human or livestock source. Visitors will be advised of any known specific problems. Visitors contacted by park staff will be advised to boil drinking and cooking water for at least one minute; if it is cloudy or turbid, for 3-5 minutes. Information will be available at contact stations concerning water treatments and visitor responsibility for protecting themselves and others from spreading Giardia.

**Factor:** Accessibility and degree of challenge  
**Indicators:** Distance between camps on maintained trails and weather conditions.  
**Standards:** Distance between camps varies from less than one hour to several days' ride or hike on trails maintained to standards as specified in the Wilderness Trails Standards. Weather conditions and time of year will affect accessibility and degree of challenge. Even during the summer, winter-like conditions may be encountered at higher elevations. High water may flood trails, making travel impossible.

**Factor:** Management Tools  
**Indicators:** Backcountry permits, shelters, patrol cabins, fire lookouts, tent platforms, radio repeaters, work crew camps, signs, toilets, composters, minimum tool, aircraft, research equipment.  
**Standards:** Backcountry permits are required for all overnight stays. Permits may be reserved up to one month prior to planned start date. No more than 50% of available space for individual sites or crosscountry zones will be reserved in advance. Sites and space not reserved will be issued on a first-come, first-served basis. Permits must be picked up in person before noon of the planned start date. Permits not picked up will be issued on a first-come, first-served basis.



**Shelters:** Perry Creek, and Flick Creek will be maintained. Beaver Pass is closed except for emergency use only and will be maintained until it is no longer practical. Replacement roofs will be constructed of native cedar shakes. No new shelters will be constructed. **Tent Platforms** will be used only if terrain, prevention of impact, or safety does not allow construction of conventional sites. Construction will be of material that will withstand the area snow load. They will be constructed as low to the ground as possible. A corner of the platform will be covered with metal to protect the wood while cooking.

**Work Crew Camps:** Established hiker/horse camps should be used before creating a separate work camp, but, if needed, new work camps may be built out of sight of trails and established camps. A resilient site will be agreed on by the Area District Ranger and Trails Foreperson. The site will be rehabilitated and marked on a map which will be given to the District Ranger. All toilets, associated trails, and facilities will be obliterated. Work camps will not be established in Day Use Area.

**Signs (Appendix C):** Sign boards in the Wilderness will be used only when a post will not sufficiently convey the information required. All other signs in the wilderness will be wooden posts with vertical lettering or symbols. Lettering will be approximately 1-3/16" Gothic capitals. Letters will be engraved by router and charred. Posts will be unpainted. Signs will be placed at important junctions, camp entrances, campsites and toilet and water trails.

**Toilets:** Camps will have either a Wallowa or composting toilet. Pits will be at least 30" deep and backfilled when 3/4 full. They will be placed far enough from camps and trails to provide adequate privacy but near enough to be used. They will be at least 200 feet from any surface water. Composting toilets will be used if ground water distance from surface water, or soil type, prevents digging a 30" deep pit. Composters will consist of a Wallowa, a bucket to catch the wastes, and a composting bin.

**Minimum Tool:** Power tools will be permitted when non-power tools have been considered and found to be ineffective or inappropriate for the job. Considerations will be type of work,



safety, weather, distance, amount of work to be accomplished, number of visitors using the area, and the effect on wildlife. The Wilderness District Ranger will be responsible for using the minimum tool. Acceptable power tools are chainsaws, power winches, hand-held rock drills, hand-held power brushers and explosives. All power tools will be equipped with a modified muffler that reduces the decibel level.

Aircraft may only be used if stock use is not permitted on trails, trail condition prevents stock use, or it is impractical to use stock and there is no other practical way to accomplish the work. Aircraft use will be confined to Monday through Thursday and as much as possible to before the 4th of July and after Memorial Day. Emergency operations are exempt. All helicopter operations will comply with NCNPSC's Helicopter Use Management Plan.

## D. CROSSCOUNTRY I, HIKER USE

Social Indicators

Factor: Type and Amount of Use

Indicators: Number of permits, climbing registers and on site contacts per day.

Standards: Most use is by climbers or crosscountry travelers and represents about 25% of total Wilderness use. Camping is permitted at established camps where provided or on resilient sites; no camping is permitted in meadows. Party size limit is 12. The total number of overnight parties may be limited in high use areas. Permits are required for all overnight stays. Climbers are encouraged to sign out on the climbing register.

Factor: Opportunity for solitude

Indicators: Number of visitor-visitor contacts and visitor-to-staff contacts per day.

Standards: Moderate-to-high opportunity for solitude, 0-9 visitors per day. Presence of park staff is high when and where use is high, with a 50-90% chance of contact.

Resource Indicators

Factor: Accessibility and degree of challenge

Indicators: Distance from trailhead, condition of route, and weather.

Standards: Major destinations are at least two hours from trailhead, road or trunk trail on unmaintained routes ranging from easy hiking to technically difficult. Routes may require knowledge of route finding and mountaineering skills. Weather and time of year will affect degree of challenge and accessibility.

Factor: Condition of camping areas

Indicators: Undesignated sites are evaluated by evidence of camping, fire rings, garbage, disturbed vegetation and human waste. Designated sites are evaluated by the number of sites in a camp, amount of bare ground, disturbed vegetation, fire rings, human wastes, location of toilet, garbage, type of signs, distance from water.

Standards: Camping: Evidence of camping in areas with undesignated sites is unacceptable and will be rehabilitated. Crosscountry travelers must camp at least 100 feet from water. Camping in meadows

is prohibited; camping on rock or snow is encouraged.

Designated campsites will be located at least 100 feet from water and out of sight of the main route. Individual campsites are limited to four sites per camp. Sites will be large enough to accommodate a large dome tent, 10X10 feet. Sites will be constructed in the most resilient terrain available. Where bare ground or disturbed vegetation increase by 25% the original size, steps will be taken to rehabilitate the site. Camps may be closed or use limited if impacts can not be controlled. Construction of camps in Crosscountry I should be considered only when all other attempts to prevent resource damage have been tried and found impractical.

Fires are not permitted and all fire rings will be dismantled and the site rehabilitated.

Toilets will be Wallowa type with a pit at least 30" deep and will be backfilled before completely full. Toilets should be placed out of sight of camp and trail but close enough to be conveniently used. Pits will be at least 200 feet from water and composters will be at least 100 feet from water. Composting toilets will be considered where soil, terrain, and/or distance from water prevents digging a pit. When toilets or a composter are unavailable, human wastes should be buried in the top layer of soil at least 200 feet from water and camps.

Signs (Appendix C) will be used only for resource protection. They will be posts, no more than four feet above ground with routed vertical lettering or symbols.

**Factor:** Wildlife

**Indicators:** Bear, deer, and rodents in camps, visitors' food, being eaten and equipment destroyed, impacted vegetation.

**Standards:** No abnormal numbers of wildlife in camps or around heavy day use areas. Visitors will be instructed to hang food and equipment at night and when away from camp. All food cooked for a meals should be eaten, no leftovers. Cooking and eating equipment should be cleaned as soon as meal is over.

Toilets should be used where provided. Visitors will be encouraged to urinate on rocks, old logs or any resilient non-vegetated sites, since deer impact vegetation while eating salt from urine. Other standards are located on the back of the

Main Trails & Wilderness Camps Areas map  
(Appendix A) .

**Factor:** Water Quality

**Indicators:** Presence of fecal coliforms

**Standards:** All waters in the wilderness will meet the water quality standards as stated in Chapters 173-201, sub-paragraphs 045, 050, 070, and 080, of the Washington Administrative Code. If abnormal fecal coliform counts are found, attempts will be made to isolate the source of contamination. Corrective action will be taken if contamination is from a human or livestock source. Visitors will be advised of any known specific problems. Visitors contacted by park staff will be advised to boil drinking and cooking water for at least one minute; if it is cloudy or turbid, for 3-5 minutes. Information will be available at contact stations concerning water treatments and visitor responsibility for protecting themselves and others from spreading Giardia.

**Factor:** Route Conditions

**Indicators:** Disturbed vegetation, hazards, drainage, resource damage.

**Standards:** Routes will be maintained only to prevent resource damage. Routes will be designated on rock and gravel surfaces where possible. Logs will not be routinely removed unless users are causing impacts by avoiding them. Tread work will only be done if, by not doing so, greater impacts will occur. Rocks, roots or other obstacles will not be removed unless it presents a resource problem or safety hazard. Stream crossings will not be bridged or improved unless they present an overwhelming safety hazard.

**Factor:** Management Tools

**Indicators:** Backcountry permits, cabins, tent platforms, radio repeaters, lookouts, crew camps, stock use, power tools, signs, toilets, composters, aircraft, and research.

**Standards:** Backcountry permits are required for all overnight stays. Permits may be reserved up to one month prior to planned start date. No more than 50% of available space for individual sites or crosscountry zones will be reserved in advance. Sites and space not reserved will be issued on a first-come, first-served basis. Permits must be picked up in person before noon of the planned start date. Permits not picked up

will be issued on a first-come, first-served basis.

Cabins, tent platforms, lookouts and stock are prohibited.

Radio repeaters are prohibited unless no alternative location can be found; the Superintendent must approve placement and location.

Patrol camps will be constructed when it is anticipated that a constant patrol presence is necessary. Camps will be only large enough to accommodate a three person tent.

Crews will use established hiker or patrol camps, and must meet the same standards for camping as the visitor. Crew size will be six or less.

Signs (Appendix C) will be wood posts no more than four feet above the ground with vertical routed lettering or symbols. They will be placed only for visitor safety or resource protection and should be very few in number.

Toilets will be a Wallowa or composter. Pits will be 30" deep and located at least 200 feet from surface water. They will be located out of sight of camps and routes but close enough to be used. Composters will be at least 100 feet from surface water and out of sight of camps or routes but close enough to be used.

Power tools will not be used unless it is the opinion of the Trails Foreperson that, by not using them, it would create a safety hazard or prevent the completion of a project. Before power tools will be used the Trails Foreperson must request a variance in writing from the Wilderness District Ranger. All power tools will be equipped with a modified muffler that reduces the decibel level.

Aircraft may be used for patrols, moving equipment and supplies. Use will be confined to Monday through Thursday. Prior written approval must be obtained from Chief Ranger or Wilderness District Ranger. Emergency operations will be exempt. An annual written report of all aircraft use in Crosscountry I will be submitted to the Superintendent by January 15.

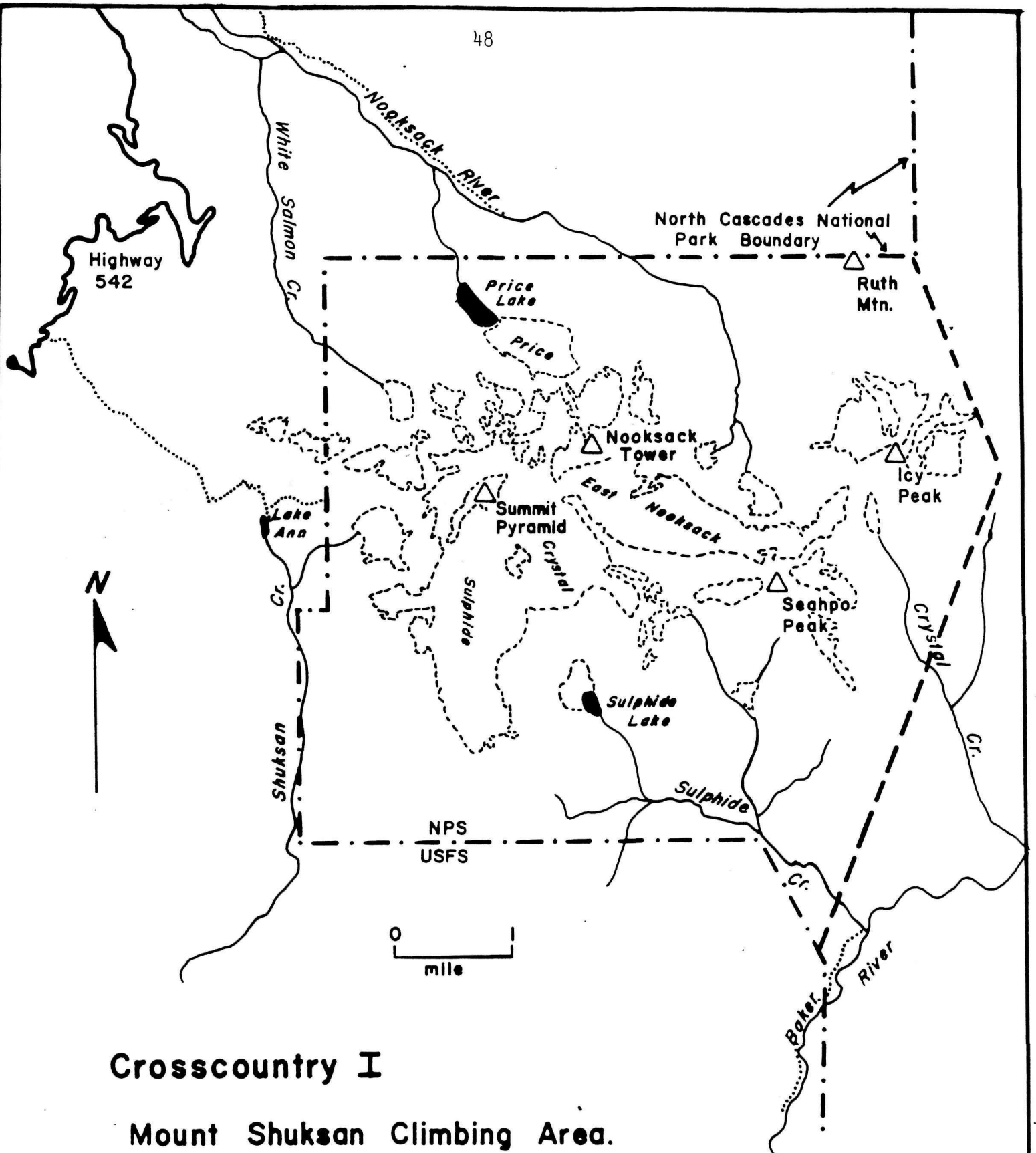
Research must be approved by the Chief of Resources Management. Equipment will be confined to areas where visitor contact is likely to be very limited. All equipment should be located so as not to attract visitors or to detract from their wilderness experience. Equipment will be removed as soon as data is collected.

Researchers will obtain a Backcountry permit.

Researchers must carry their collecting and research permit with them.



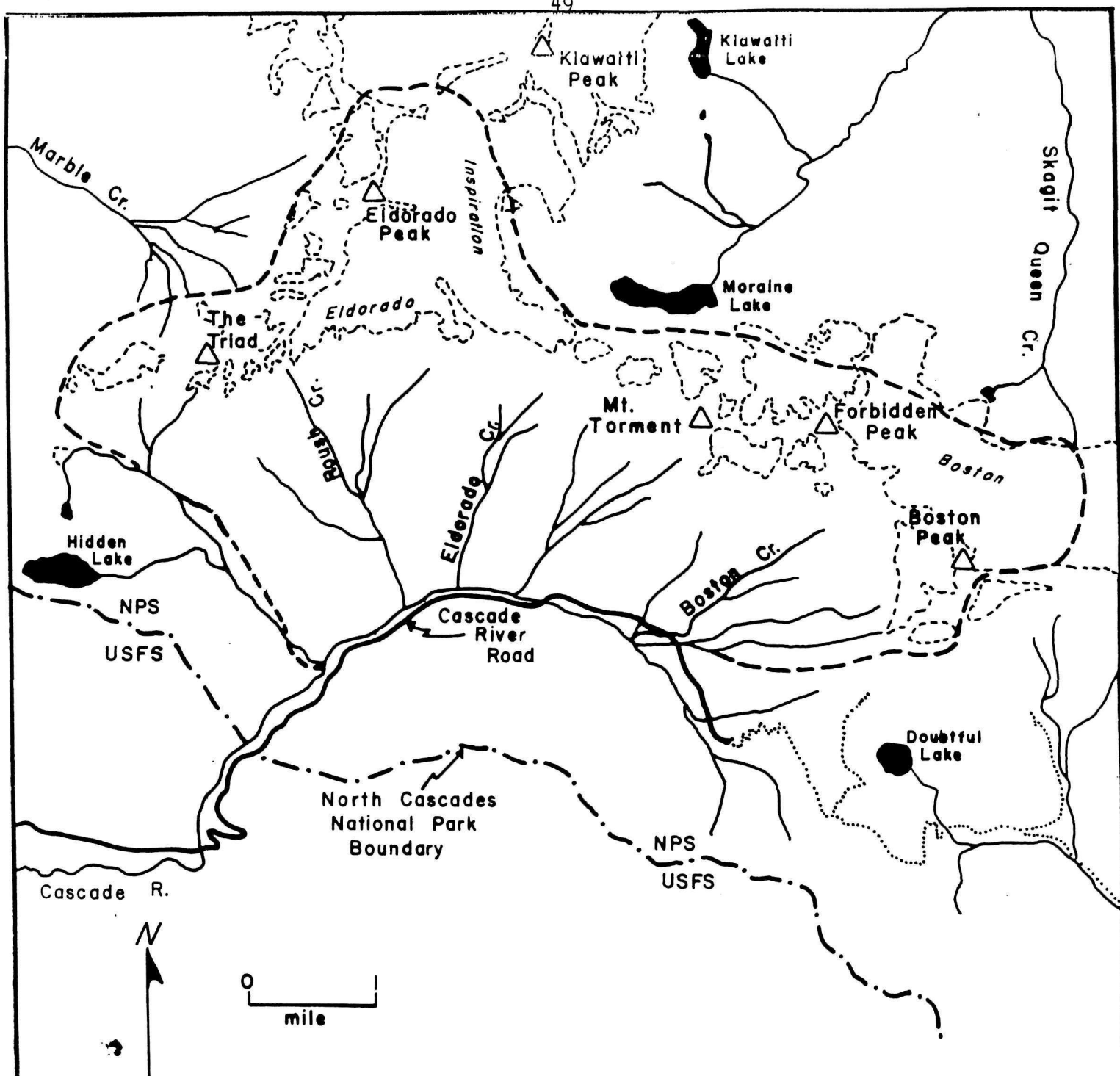




## Crosscountry I

Mount Shuksan Climbing Area.  
North Cascades National Park.





## Crosscountry I

Forbidden and Eldorado Peaks Climbing Areas.  
North Cascades National Park.

## E. CROSSCOUNTRY I, STOCK USE

Social Indicators

**Factor:** Type and Amount of Use

**Indicators:** Number of permits, party size and on-site contacts per day.

**Standards:** Most use is by hunting parties during the "high hunt" deer season.

Permits are required for all overnight stays.

Camping is permitted on resilient sites; no camping is permitted in meadows.

Party size is limited to a combination of six visitors and stock.. The total number of parties per zone may be limited.

**Factor:** Opportunity for Solitude

**Indicators:** Number of visitor-visitor contacts and visitor-to-staff contacts per day.

**Standards:** Moderate-to-high opportunity for solitude, 0-9 visitors per day. Presence of park staff is high when and where use is high, with a 50-90% chance of contact.

Resource Indicators

**Factor:** Accessibility and degree of challenge

**Indicators:** Miles from trailhead, condition of route and weather.

**Standards:** Major destinations at least two hours from trailhead, road or trunk trail on unmaintained routes ranging from easy to technically difficult. Routes may require knowledge of route finding and mountaineering skills . Weather and time of year will affect degree of challenge and accessibility.

**Factor:** Condition of camping areas

**Indicators:** Undesignated sites are evaluated by evidence of camping, fire rings, disturbed vegetation, amount of bare ground, distance from water, human wastes, garbage, type of signs.

**Standards:** **Camping:** Evidence of camping in areas with undesignated sites is unacceptable and will be rehabilitated. Crosscountry travelers must camp at least 100 feet from water. Camping in meadows is prohibited; camping on rock or snow is encouraged.

Fires are not permitted and all fire rings will be dismantled and the site rehabilitated.

Human wastes should be buried top layer of soil and at least 200 feet from water and camps.

Garbage will be packed out.  
Signs will not be used.

**Factor:** Stock Use

**Indicators:** Route condition, feed, grazing, bare ground, exposed roots, manure, holding areas.

**Standards:** Route condition: Stock users should be encouraged not to develop well-defined routes. Routes should only be noticeable in confined areas where terrain permits only one choice of travel. If well-defined routes develop visitors will be encouraged to use a different route and the impacted route will be closed and rehabilitated.

Feed is limited to pelletized rations; hay is unacceptable.

Grazing is permitted on a limited bases in Lake Chelan and Ross Lake National Recreation Areas. Grazing is not permitted in North Cascades National Park. Grazing will not be permitted within 200 feet of water sources, i.e., lake shores, streams, ponds, rivers and boggy wet lands. Loose herding is encouraged. Picketing is prohibited. Stock will be moved frequently to prevent overgrazing. The user must obtain a grazing permit. The grazing permit may be issued at the time the wilderness permit is issued and must be carried during the trip. Grazing may be suspended or delayed due to wet meadow conditions. The suspension or delays are intended to prevent unacceptable mechanical disturbance to surface soils and vegetation. The holder of the grazing permit will be responsible for assuring that stock are not left unattended and that all other rules and regulations concerning grazing and stock use are complied with.

Bare ground and exposed roots should be confined to holding areas and should recover within two growing seasons. If an area is impacted to the point that will not recover within two growing seasons, it will be closed by marking it with a sign and rehabilitated.

Manure should be scattered before leaving the camp area.

Holding areas should be located in areas that can withstand impacts from stock standing in one area for long periods. Bare ground, sand or gravelly areas are preferred. Stock should be held using a tether line tied between two trees. The line should be of sufficient distance from the trees so stock can be tied without causing

root damage. Stock will be moved to a new area if damage is evident.

**Criteria:** Resource

**Factor:** Water Quality

**Indicators:** Presence of fecal coliforms

**Standards:** All waters in the wilderness will meet the water quality standards as stated in Chapters 173-201, sub-paragraphs 045, 050, 070, and 080, of the Washington Administrative Code. If abnormal fecal coliform counts are found attempts will be made to isolate the source of contamination. Corrective action will be taken if contamination is from a human or livestock source. Visitors will be advised of any known specific problems. Visitors contacted by park staff will be advised to boil drinking and cooking water for at least one minute; if it is cloudy or turbid, for 3-5 minutes. Information will be available at contact stations concerning water treatments and visitor responsibility for protecting themselves and others from spreading Giardia.

**Factor:** Route Conditions

**Indicators:** Disturbed vegetation, hazards, drainage, resource damage.

**Standards:** Routes will be maintained only to prevent resource damage. Logs will not be routinely removed unless users are causing impacts by avoiding them. Tread work will be done only if by not doing so greater impacts will occur. Rocks, roots or other obstacles will not be removed unless they present a resource problem or safety hazard. Stream crossings will not be bridged or improved unless they present an overwhelming safety hazard.

**Factor:** Management Tools

**Indicators:** Backcountry permits, cabins, tent platforms, radio repeaters, lookouts, crew camps, power tools, signs, toilets, composters, aircraft, and research.

**Standards:** Backcountry permits are required for all overnight stays. Permits may be reserved up to one month prior to planned start date. No more than 50% of available space for individual sites or crosscountry zones will be reserved in advance. Sites and space not reserved will be issued on a first come first served basis. Permits must be picked up in person before noon of the planned start date. Permits not picked up will be issued on a first-come, first-served basis.

Cabins, tent platforms, and lookouts are prohibited.

Radio repeaters are prohibited unless no alternative location can be found; the Superintendent must approve placement and location.

Patrol camps will be constructed when it is anticipated that a constant patrol presence is necessary. Camps will be only large enough to accommodate a three person tent.

Crews will use established hiker or patrol camps, and must meet the same standards for camping as the visitor. Crew size will be six or less.

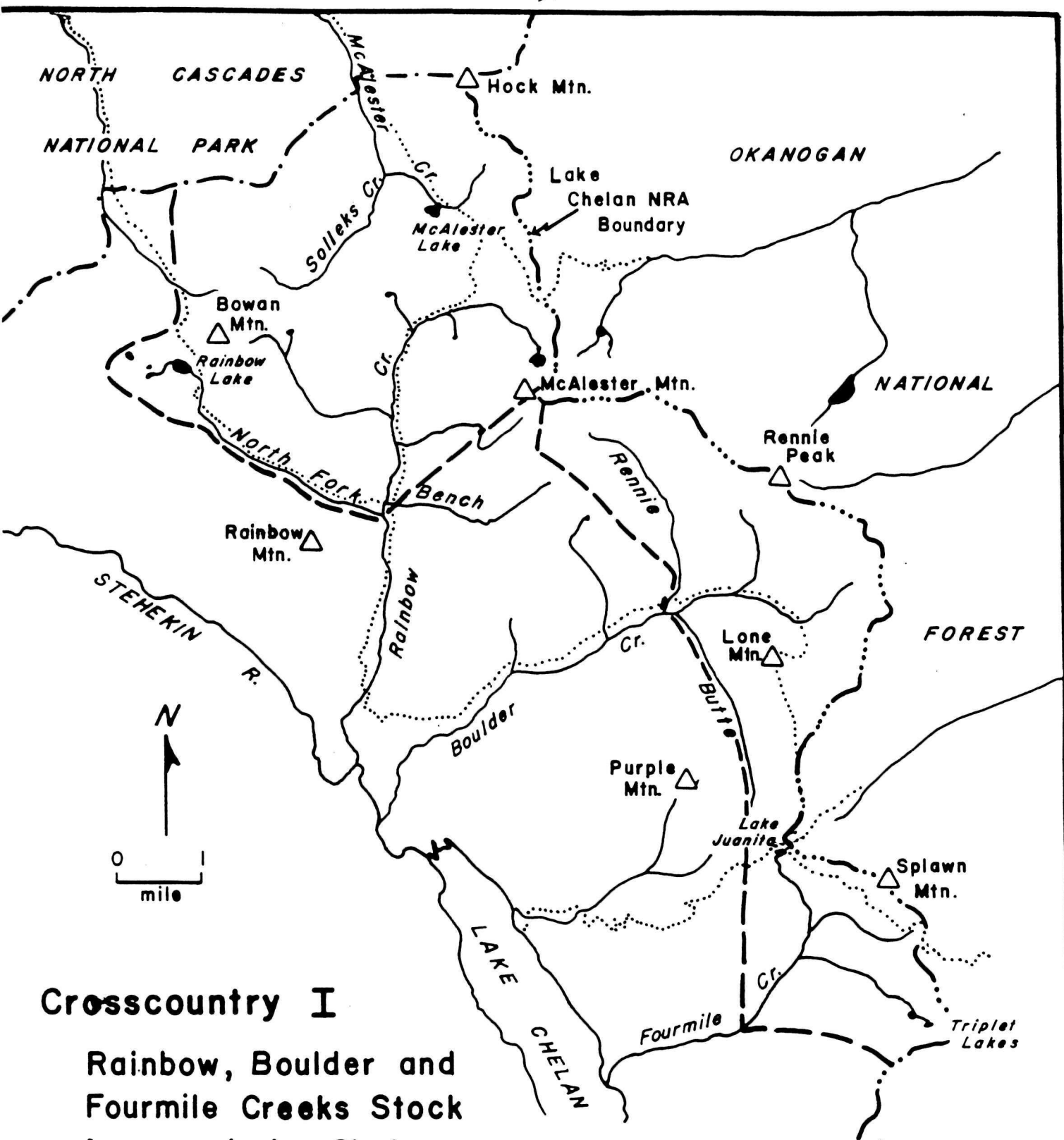
Signs (Appendix C) will be wood posts no more than four feet above the ground with vertical routed lettering or symbols. They will be placed only for visitor safety or resource protection and should be very few in number.

Toilets will be a Wallowa or composter. Pits will be 30" deep and located at least 200 feet from surface water. They will be located out of sight of camps and routes but close enough to be used. Composters will be at least 100 feet from surface water and out of sight of camps or routes but close enough to be used.

Power tools will not be used unless it is the opinion of the Trails Foreperson that by not using them it would create a safety hazard or prevent the completion of a project. Before power tools will be used, the Trails Foreperson must request a variance in writing from the Wilderness District Ranger. All power tools will be equipped with a modified muffler that reduces the decibel level.

Aircraft may be used for patrols, moving equipment and supplies. Use will be confined to Monday through Thursday. Prior written approval must be obtained from Chief Ranger or Wilderness District Ranger. Emergency operations will be exempt. An annual written report of all aircraft use in Crosscountry I will be submitted to the Superintendent by January 15.

Research must be approved by the Chief of Resources Management. Equipment will be confined to areas where visitor contact is likely to be very limited. All equipment should be located so as not to attract visitors or to detract from their wilderness experience. Equipment will be removed as soon as data is collected. Researchers will obtain a Backcountry permit. Researchers must carry their collecting and research permit with them.



## Crosscountry I

Rainbow, Boulder and  
Fourmile Creeks Stock  
Areas. Lake Chelan  
National Recreation Area.

## F. Crosscountry II

### Social Indicators

**Factor:** Type and amount of use

**Indicators:** Climbing register, on-site contacts.

**Standards:** Party size is limited to six and the number of parties permitted in an area may be limited. Stock use is prohibited. Climbers and crosscountry hikers make up the majority of the use.

**Factor:** Opportunity for Solitude

**Indicators:** Number of visitor-visitor and visitor-park staff contacts. Colors of visitor clothing and equipment.

**Standards:** Opportunity for solitude will be high, 0-5 contacts per day. Presence of park staff is low with less than a 20% chance of contact. Visitors will be encouraged to wear and use minimum impact colors. Party size is limited to six members.

**Factor:** Accessibility and degree of challenge

**Indicators:** Number of hours from road, trailhead, or trunk trail, weather, conditions, time of year.

**Standards:** Major climbing areas are at least 6 hours from road, trailhead, or trunk trail. Routes are minimally visible to non-existent and are generally difficult, with possible technical difficulties requiring knowledge and skills in both route finding and mountaineering. Weather and time of year will play a major role in degree of difficulty and accessibility.

**Factor:** Condition of camps.

**Indicators:** Disturbed vegetation, fire rings, bare ground, garbage, human waste.

**Standards:** Only minimal sign of human presence will be acceptable. All impacts will be revegetated or rehabilitated. Use may be limited or some areas closed to camping. Fires and camping in meadows are prohibited. Visitors will be encouraged to camp on resilient sites at least 100 feet from water. Human waste should be buried at least 200 feet from surface water. Garbage will be packed out.



**Factor:** Wildlife

**Indicators:** Bear, deer, and rodents in camps, visitors' food, being eaten and equipment destroyed, impacted vegetation.

**Standards:** No abnormal numbers of wildlife in camps or around heavy day use areas. Visitors will be instructed to hang food and equipment at night and when away from camp. All food cooked for a meal should be eaten; no leftovers. Cooking and eating equipment should be cleaned as soon as meal is over. Human wastes should be buried 200 feet from any surface water source in top layer of soil. Visitors will be encouraged to urinate on rocks, old logs or any resilient non-vegetated sites since deer impact vegetation while eating salt from urine. Other Minimum Impact standards are located on the back of the Main Trails & Wilderness Camps Areas, map (Appendix A).

**Factor:** Condition of routes.

**Indicators:** Bare tread, disturbed vegetation, erosion.

**Standards:** Bare ground and established routes are unacceptable, except where terrain dictates only one way of access. Leaving flagging, rock cairns or wands is prohibited. Areas not meeting standards will be revegetated or rehabilitated. To protect areas from impacts, use limits or closures to camping may be imposed.

**Factor:** Water Quality

**Indicators:** Presence of fecal coliforms

**Standards:** All waters in the wilderness will meet the water quality standards as stated in Chapters 173-201, sub-paragraphs 045, 050, 070, and 080, of the Washington Administrative Code. If abnormal fecal coliform counts are found, attempts will be made to isolate the source of contamination. Corrective action will be taken if contamination is from a human or livestock source. Visitors will be advised of any known specific problems. Visitors contacted by park staff will be advised to boil drinking and cooking water for at least one minute; if it is cloudy or turbid, for 3-5 minutes. Information will be available at contact stations concerning water treatments and visitor responsibility for protecting themselves and others from spreading Giardia.

**Factors:** Management Tools

**Indicators:** Backcountry permits, cabins, tent platforms, fire lookouts, stock use, power tools, crew camps, aircraft, radio repeaters, and research.

**Standards:** Permits are required for overnight stays. Climbers are encouraged to sign in and out on the climbing register.

Cabins, tent platforms, fire lookouts, and power tools are prohibited.

Work crews will be limited to 5 members and will observe minimum impact camping techniques. The first choice will be to camp on rock or snow.

Radio repeaters will be permitted if needed radio coverage cannot be achieved in a location outside Crosscountry I or Crosscountry II. Easy Ridge repeater may be moved to Copper Lookout if coverage is adequate to meet the needs of the north end of the park. Ruby repeater may be moved to Sourdough Lookout if coverage is adequate.

Aircraft will be permitted for patrols, maintenance, research, and monitoring. Aircraft operations will be confined to Monday through Thursday. Prior written approval must be obtained from Chief Ranger or Wilderness District Ranger.

All helicopter operations will comply with NCNPSC's Helicopter Use Management Plan.

Emergency operations are exempt. An annual written report of all aircraft operations within Crosscountry I and II will be submitted by the Wilderness District Ranger to the Superintendent by January 15.

Research must be approved by the Chief of Resources Management. Equipment will be confined to areas where visitor contact is likely to be very limited. All equipment should be located so as not to attract visitors or to detract from their Wilderness experience. Equipment will be removed as soon as data is collected. Researchers will be bound to the same camping regulations as other visitors and will advise permit issuing stations of their intentions and make their collecting permit available. Researchers must carry their permit with them while in the field.

## Section 6

### Monitoring Program

All sites will be monitored using the line-intercept method as described in Shelley Weisberg's paper, Line-Intercept Transects.

Campsites will be monitored every five years on a rotating basis. Impacted sites will be monitored every three years on a rotating basis.

All data will be stored and analyzed using two computer programs developed by Bob Borrell, North Cascades. Impacted sites will be analyzed using the Revegetation System Transect Program. Campsites will be analyzed using the Campsite Transect Program.

### Revegetation Program

All revegetation projects will be approved by the Chief of Resources Management. All revegetation efforts will follow North Cascades Revegetation Guidelines, (2/87) and A Comprehensive Plan For Revegetation of Denuded Sites In The Wilderness of North Cascades.

Greenhouse: Propagation of Subalpine Plants, a NOCA publication, will be used as a guide for all plant propagation.

## Section 7

### Potential Management Actions

This section of the management plan identifies areas in NCNPSC where current conditions fail to meet the established standards and the management actions necessary to bring existing conditions up to standard.

Baseline data has been collected on all camps and known impacted sites in NCNPSC. The data is stored in the Wilderness District Office. Two computer programs have been written to analyze and store data.

During the summer of 1987, all possible sites, established camps and impacted sites were field-checked against the standards in this plan. Management plans are being written for all sites that fail to meet the standards. All maintenance needs will be tracked using the National Park Maintenance Management System.

Appendix I shows examples of areas that have been field-checked and have failed to meet the standards and management plans that will bring them up to standard. Complete data is on file in Wilderness District Office.

### Reports

Two annual reports will be submitted to the Superintendent by the Wilderness District Ranger by January 15.

#### 1. State of The Wilderness Report

This report will deal with the conditions of the Wilderness over the past year and will include:

- \* Sites monitored
- \* Listing of new impacted sites
- \* Trends in use that may have potential impacts
- \* Recommendations for the coming season
- \* Additional funding needs to meet standards
- \* Revegetation projects
- \* Problem areas
- \* Visitation, stock use, hikers, climbers
- \* Progress of Section 7
- \* Needs of management

#### 2. Aircraft and Minimum Tool Use Report.

This report will include any landings in Crosscountry I and Crosscountry II during the year. It will also include any use of power tools within these two areas.

APPENDICES



APPENDIX A

## APPENDIX B

TRAIL STANDARDS

Use Class	All Purpose Trail	Special Use Trail	Foot Trail	Primitive Trail	Route
Routing	Conforms to the terrain except for minor modifications allowed where necessary to assure user safety and/or trail stability.			Conforms to the terrain.	
Grade	Ideal 12% except:  15% for max. 500' 20% for max. 300'	Ideal 10% except:  15% for max. 500' 20% for max. 100'	Ideal 15% except:  25% for max. 300' 30% for max. 50'	Ideal 18% except:  30% for max. 300' 40% for max. 100'	Only maintained to protect resource; not for convenience of visitor.
Clearance	8' lateral 10' lateral	8' lateral 10' lateral	6' lateral 8' lateral	6' lateral 8' lateral	If reconstruction necessary, will be at Primitive Trail Standards.
Tread Bench	24" minimum 30" maximum  Solid protrusions over 2" high loose material for 2" diameter removed.	24" minimum 30" maximum	15" minimum 24" maximum  Protrusions over 4" high, loose material over 2" diameter removed.	12" minimum 18" maximum  Route may be marked with cairns. Protrusions over 6", loose rocks over 3" diameter removed.	
Switchbacks	6' radius minimum 7' radius maximum	6' radius minimum 8' radius maximum	4' radius minimum 6' radius maximum	4' radius minimum 6' radius maximum	
Drainage	Adequate to carry maximum anticipated runoff and designed to minimize downslope erosion and scarring.				
Turnpike Puncheon or Gadbury	Across all bogs, swamps, marshes, etc., and wet subalpine meadows where necessary.			Where necessary to preserve the resource.	
Streams	Bridged as necessary to serve trail function._____				

## Appendix C

### SIGN STANDARDS

Signs in the Wilderness will be few and simple. Signs will be placed only at trailheads, trail junctions, designated camp areas, and at special administrative points to notify people of hazards, agency boundaries, closed areas, etc. Signs will not be attached to rocks, trees or other natural features.

Signboards on posts will be confined to trailheads, and sign posts with vertical lettering or symbols will be used in interior locations. Signboards will be used in interior locations only when a post will not sufficiently convey the information required. Such signboards will be mounted on wood posts which may be notched to support the board under snow loading. Trailhead signboards will be mounted on 4" x 4" posts to conform in style with trailhead bulletin boards.

Lettering on signboards and posts will be approximately 1-3/16" Gothic capitals. Letters will be engraved by router and charred to provide contrast. Signboards will be unpainted and allowed to weather naturally, except certain trailhead signs that may be painted when necessary to conform with frontcountry standards.

Trailhead signs will list only primary destinations and important intermediate points such as trail junctions and passes. Distance will be shown where appropriate.

Whenever possible signs will be engraved with symbols rather than with words to delineate camp sites, camp facilities, and restrictions. Symbols will be engraved on bevelled posts with a branding iron or router and the grooves will be charred or stained black with indelible material. A red diagonal groove will be superimposed on appropriate symbols to restrict certain use. Symbols will be those selected and agreed upon by managers of the Pasayten and Glacier Peak Wilderness areas and North Cascades National Park Service Complex. Amendments or additions will not be made without the concurrence of managers of all three areas.

APPENDIX D

## REVEGETATION MANAGEMENT PLAN

The revegetation program encompasses the entire National Park Complex.

All sites will be prioritized before any revegetation work occurs. Subalpine areas along designated trails will be the highest priority, followed by heavily used subalpine crosscountry areas, and forested areas will be the lowest priority. A plan describing the goals, the work to be done and how it will be accomplished must be submitted to, and approved by, the Resource Management Ranger.

Data will be collected on all revegetation, crosscountry, and wilderness campsites. Revegetation sites will be monitored at 2-3-year intervals, crosscountry sites at 3-4-year intervals, and wilderness camps at 5-year intervals. Monitoring techniques are described in the Comprehensive Revegetation Methods Plan.

Data will be stored and analyzed in the Wilderness District Office computer revegetation programs developed at the Park level.

An array of methods will be used to revegetate sites, depending on the degree of impact and type of site. Methods include planting greenhouse-grown plants, transplanting, preparing the soil and seeding, laying down excelsior matting, and closing the site with signs.

Local gene pools will be preserved throughout the Park complex. Greenhouse plants will be planted where the parent stock originated, and transplanting will be done within local areas. Only native species will be used.

Standardized methods will be used to close certain areas to visitors. "Foot stakes" will be used to close off unwanted social trails, and the descriptive revegetation signs will be used to close sites.

Educating the public will be an on-going priority; revegetation brochures will be available for Park visitors, and there will be an educational out-reach program for the general public.

APPENDIX EMINIMUM IMPACT STANDARDS FOR NORTH CASCADES

The following standards are guidelines for park management and recommendations for park visitors. The park and its personnel should set the example and make every effort to reduce visual, aural, and physical impacts. Visitors are encouraged to adopt these standards through education and by staff example.

**Equipment:** All backpacking equipment and camp gear will be of color and type of material to blend in with surrounding terrain and vegetation. Earth colors such as dark browns, greens, blues or grays should be first choice for tents, packs, tarps and bivy sacks. The material should have a dull finish.

**Clothing:** Clothing should be picked for safety requirements and comfort first and then minimum impact colors. Earth colors should be the first choice for rain gear and outer wear.

**Stoves:** Fires are permitted only in established camps with fire grates. It is recommended that stoves be used even where fires are permitted to preserve valuable resources.

**Water:** Every effort should be made to protect water from human pollution and to protect humans from water pollution. All water for drinking should be boiled or chemically purified. Carry large collapsible containers to reduce the number of trips for water.

**Sanitation:** Human waste should be disposed of in latrines where provided. In areas of high use and no latrines, dig a shallow hole well away from any water source (200+ feet) and cover when finished. In crosscountry areas where there is little use, deposit waste on soil surface well away from water source (200+ feet). Use natural material (snow, moss or leaves). Washing dishes, clothing and your body should be done 100+ feet from any surface water. Soap is not recommended and therefore should be used only sparingly. Collect water in a large container and carry it to wash site. Most camping trips are short enough that full baths are not necessary.

**Litter:** All garbage packed in will be packed out. While working or on patrol, staff will pick up and pack out all garbage, no matter how small. Camps and trails will be kept meticulously clean.

**Food Storage:** Visitors and park personnel are encouraged to hang food from a bear pole where provided or between two trees as shown on the back of the Main Trails & Wilderness Camp Areas map. All food cooked should be eaten. Dishes should be washed as soon

as the meal is complete. Store food stuffs in odor-proof containers.

Footwear: While hiking or climbing, good, sturdy foot gear is advised. While in camp, use light footwear.

Impacts on Others: While traveling or in camp, noise levels should be kept down. Portable radio volume will be kept low. Heavy, loud construction or helicopter use should be confined to midweek, before the 4th of July and after Labor Day. Visitors should be notified of an area where they may encounter construction projects.



## APPENDIX F

Wilderness Camps, North Cascades 3/20/89

TRAIL..... DRAINAGE STAND

Camp	Code #	Standard Y/N
BEAR CREEK	714	No
BEAVER PASS HIKER	731	No
BENCH CREEK	243	No
BIG BEAVER HORSE	417	Yes
BOUNDARY	701	No
BOWEN (BOWMAN ON SHE	244	No
BUCKNER	272	No
COPPER CREEK HIKER	711	No
COPPER CREEK HORSE	500	No
COPPER LAKE	704	No
COSHO	770	No
DAGGER LAKE	269	No
DAGGER LAKE HORSE	556	No
DANS HIKER CAMP	247	No
DEERLICK	751	Yes
DEERLICK HORSE	513	No
DESOLATION PEAK	757	Yes
DEVIL'S CREEK HIKER	744	Yes
DEVIL'S CREEK HORSE	510	No
EGG LAKE	703	Yes
FIREWEED HIKER CAMP	266	No
FIREWEED HORSE CAMP	555	No
FISHER	771	Yes
FIVE MILE HORSE	560	No
FOURTH OF JULY	781	Yes
FRISCO	267	No
GREYBEAL HIKER	716	No
GREYBEAL HORSE	502	No
GRIZZLY CREEK HIKER	257	No
GRIZZLY CREEK HORSE	559	No
HALFWAY CAMP	251	No
HEATON CAMP	274	No
HIDDEN HAND	742	No
HIDDEN LAKE	784	No
HIDE-A-WAY	263	No
HIGH CAMP (#252ondat	250	No
HOZOMEEN LAKE	755	No
INDIAN CREEK	713	No
JACK MOUNTAIN	747	No
JOHANNESBURG	785	No
JOHANNESBURG	785	No
JUANITA LAKE	235	No
JUANITA LAKE HIKER	235	Yes
JUNCTION	765	No
JUNCTION HORSE	516	Yes
LIGHTNING CREEK BOAT	404	No
LIGHTNING CREEK HORS	511	No
LITTLE CHILLIWACK	715	No

## Wilderness Camps, North Cascades 3/20/89

TRAIL..... DRAINAGE STAND

Camp	Code #	Standard Y/N
LUNA	732	No
LUNA HORSE CAMP	505	Yes
MAY CREEK HORSE	509	No
MCALLISTER HORSE	515	Yes
MONOGRAM LAKE	783	No
McALESTER LAKE HIKER	252	No
McALESTER LAKE HORSE	554	No
McALLISTER	763	No
NEVE	762	No
NEWHALEM CREEK (HIKE	776	Yes
NIGHTMARE HIKER	752	No
NIGHTMARE HORSE	514	No
NO HORSES BEYOND THI	0	No
NORTH FORK 1&2 (255?	254	No
PANTHER	782	No
PARK CREEK	216	No
PELTON BASIN	786	No
PIERCE MOUNTAIN	775	Yes
PUMPKIN MOUNTAIN	735	Yes
RAINBOW BRIDGE CAMP	241	No
RAINBOW FORD	242	No
RAINBOW LAKE	245	No
RAINBOW MEADOWS HIKE	246	No
RAINBOW MEADOWS HORS	246	No
REYNOLDS	233	No
ROLAND CREEK HIKER	743	No
RUBY CREEK	741	No
RUBY PASTURE	508	No
SILESIA	702	Yes
SIX MILE HIKER	261	No
SKAGIT QUEEN	768	Yes
SOURDOUGH	774	No
SOUTH FORK HIKER	262	No
SOUTH FORK HORSE CAM	557	No
STILLWELL	722	No
SULPHIDE CREEK	772	No
TAPTO	718	No
THIRTYNINE MILE HIKE	733	Yes
THIRTYNINE MILE HORS	506	Yes
THORNTON LAKE	773	Yes
THUNDER	761	No
THUNDER BASIN	769	No
TRAPPER LAKE INLET	275	No
TRAPPER LAKE OULET	276	No
TRICOUNI	764	Yes
TWIN ROCKS HIKER	721	No
TWIN ROCKS HORSE	503	No
TWO MILE	271	No

## Wilderness Camps, North Cascades 3/20/89

TRAIL..... DRAINAGE STAND

Camp	Code #	Standard Y/N
U.S. CABIN HIKER	712	No
U.S. CABIN HORSE	501	No
WALKER HORSE & HIKER	256	No
WHATCOM	717	Yes
WILLOW LAKE	753	Yes