

DEPARTMENT OF THE INTERIOR

FINAL
MASTER PLAN
MOUNT RAINIER NATIONAL PARK, WASHINGTON

PREPARED BY
PACIFIC NORTHWEST REGION
AND THE
DENVER SERVICE CENTER
NATIONAL PARK SERVICE
DEPARTMENT OF THE INTERIOR

June 11, 1984
DATE


REGIONAL DIRECTOR
PACIFIC NORTHWEST REGION

MASTER PLAN

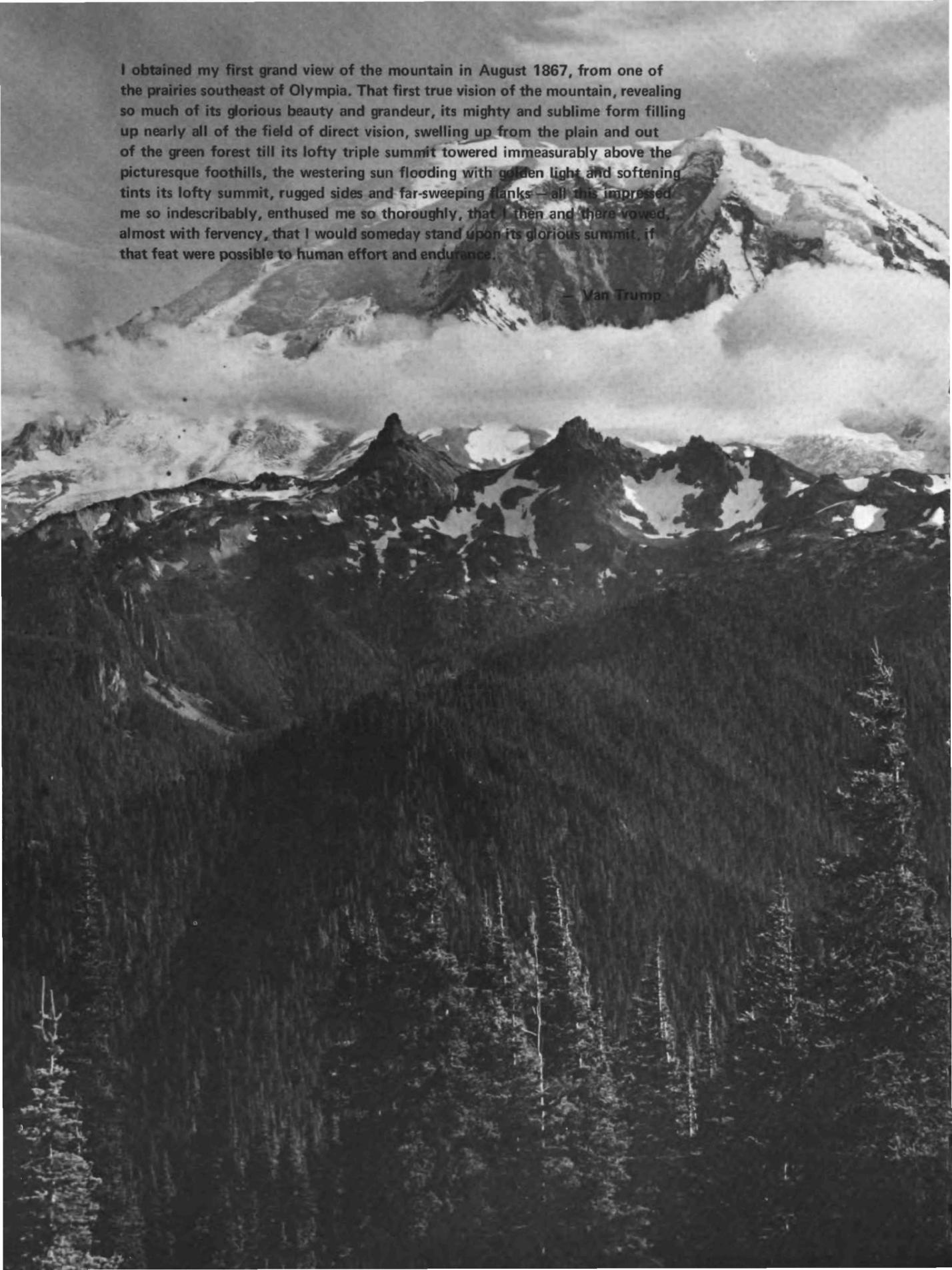
MOUNT RAINIER

NATIONAL PARK / WASHINGTON

UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

I obtained my first grand view of the mountain in August 1867, from one of the prairies southeast of Olympia. That first true vision of the mountain, revealing so much of its glorious beauty and grandeur, its mighty and sublime form filling up nearly all of the field of direct vision, swelling up from the plain and out of the green forest till its lofty triple summit towered immeasurably above the picturesque foothills, the westering sun flooding with golden light and softening tints its lofty summit, rugged sides and far-sweeping flanks—all this impressed me so indescribably, enthused me so thoroughly, that I then and there vowed, almost with fervency, that I would someday stand upon its glorious summit, if that feat were possible to human effort and endurance.

— Van Trump





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PREFACE

Over its 75-year history, Mount Rainier National Park has evolved into a day-use park, drawing a large majority of its two million visitors each year from the metropolitan Puget Sound area. As population, availability of leisure time, and interest in the "natural" world continue to increase, so does the significance of Mount Rainier and other natural areas.

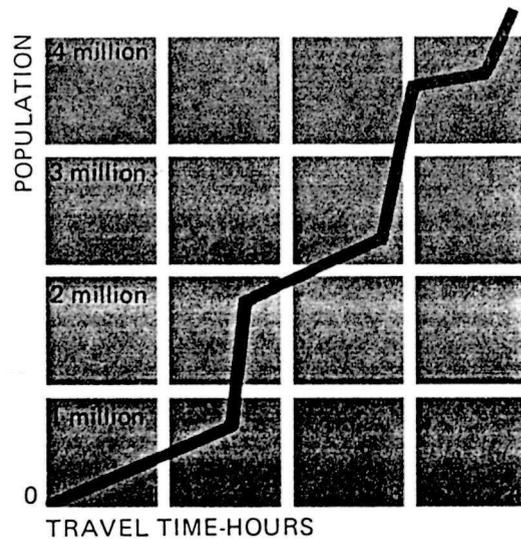
This plan proposes to facilitate the interaction between visitors and nature, on nature's terms, and according to the ability of park resources to sustain visitor use. In order to accomplish this, certain uses that degrade the resource must be discontinued or relocated to places where their adverse effects on the resource can be ameliorated. Also necessary is the expansion of the visitor service program so that it offers the broadest possible diversity of park experiences responsive to the widely varying physical abilities, ages, backgrounds, and interests of individual park visitors.

THE REGION

Mount Rainier is the most prominent peak of the Cascade Range of western Washington. This range, created by massive uplifting and volcanic activity over the last 60 million years, extends from the Fraser River in British Columbia, south beyond Oregon. It is punctuated by many volcanic peaks mantled with numerous glaciers and snowfields. Its many rivers flow through gentle subalpine meadows and one of the richest forest preserves on the earth.

Between this range and the Pacific Ocean lie the fertile valleys of Puget Sound and the Willamette River. The abundant natural resources and favorable climate attracted thousands of pioneers across the Oregon Trail to settle in this region. Modest beginnings of water-borne trade and wilderness farming expanded rapidly, and 120 years of agricultural and industrial development generated a population expansion to the point where the Puget Sound area is now the home of over two million persons – nearly 60 percent of the population of the State of Washington. Within a half-day's drive of Mount Rainier, four million people reside.

Though an established commercial center, the region has a youngness about it, a feeling that it is still perhaps a semi-frontier. Youth is reflected in its people as well. Over one-fifth of the population is between the ages of 15 and 24. During the 1960's, the number of people in this



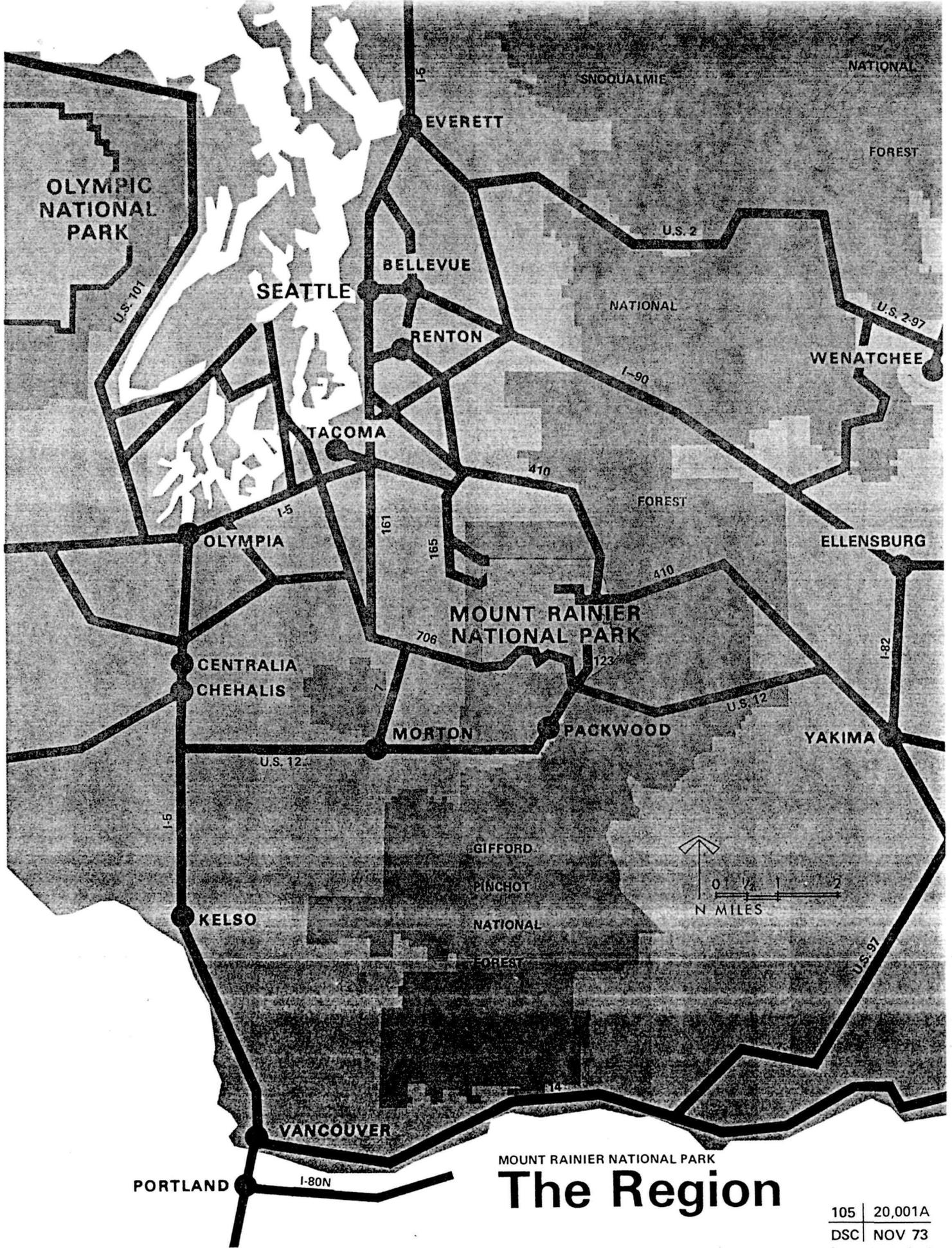
age group increased 56 percent, while the overall population increased 28 percent.

Industrial, commercial, and governmental organizations have responded to the increased interest in enhancing the quality of life in and around the urban areas. Support from all levels of government is leading to regional planning to correct present deficiencies and direct future growth in harmony with the social and natural environment. Provision of diverse opportunities for the utilization of leisure time is an integral part of this planning effort.

The area is fortunate in having not only well-developed facilities, but also considerable opportunities to provide facilities for the future. Public lands available in western Washington include six national forests, three national parks, an excellent State park system, and large tracts of other State, Federal, and local lands open to public use. The many rivers and abundant water areas of Puget Sound provide for a wide variety of water recreation activities. The abundance of snow upon nearby mountain slopes attracts skiers and other winter sport enthusiasts.

Federal and provincial parks in nearby British Columbia provide additional recreational opportunities for the residents of the Puget Sound area.

While the tremendous diversity of recreational resources in the Pacific Northwest would seem to disperse visitation and impact over a wide area, such is not the case with Mount Rainier, for there is but *one* Mount Rainier. "The Mountain" occupies a special place in the hearts of the people of Washington, the country, and indeed the world. While the entire Northwest provides a strong attraction for travelers, a trip to the region is not complete without a visit to Mount Rainier.



MOUNT RAINIER NATIONAL PARK

The Region

THE PARK

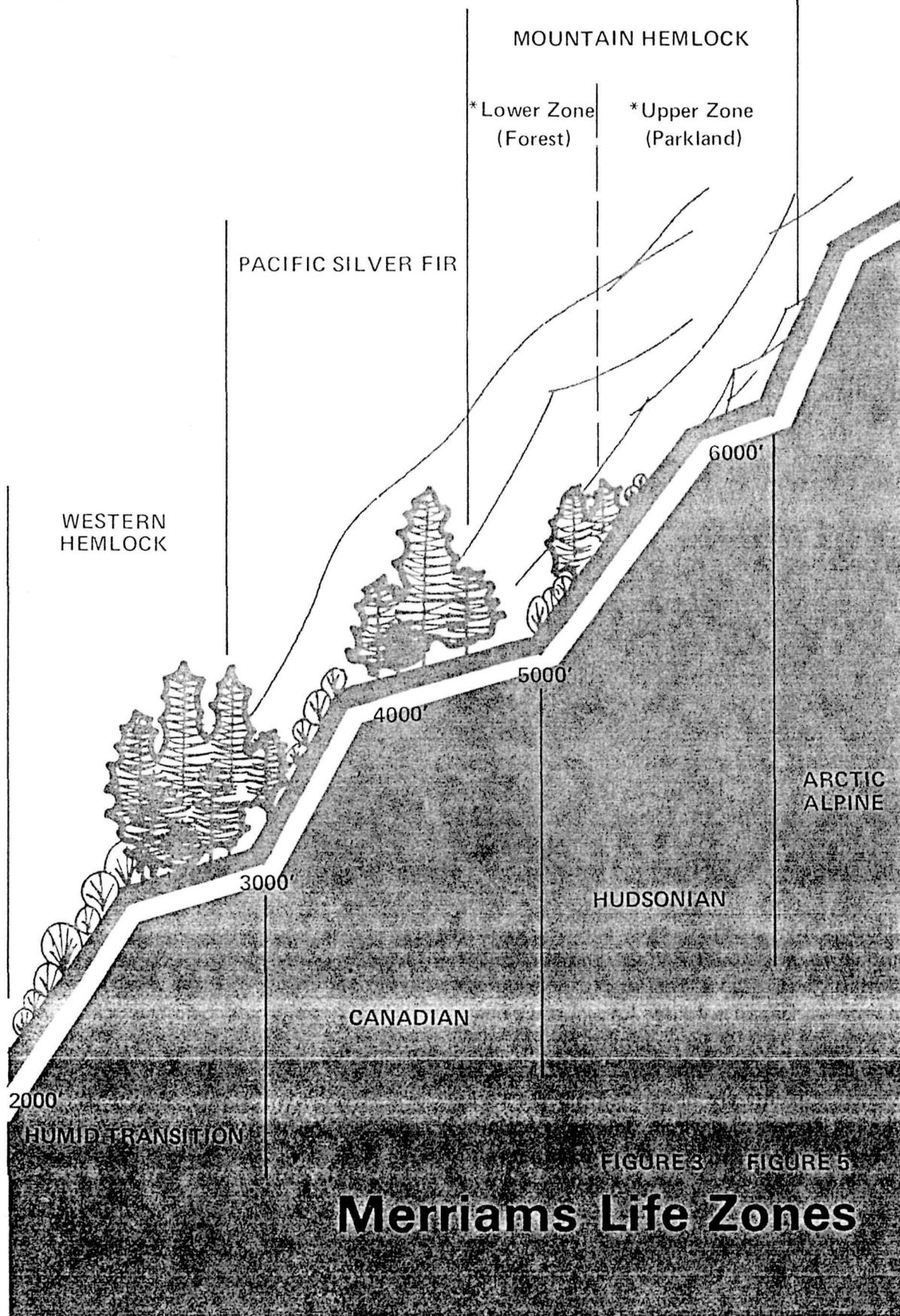
NATURAL FEATURES

Mount Rainier, the mountain itself, formed by natural forces of unimaginable magnitude, is the prime resource. Visible from Puget Sound on clear days, the mountain dominates the skyline, rising more than 7,000 feet above a rugged Cascade foundation in solitary splendor. Aptly described as "an arctic island in a temperate zone," Mount Rainier is the fifth highest peak and supports the greatest single peak glacial system in the contiguous United States, covering 34 square miles of mountain slope. The mountain is a superlative example of the "composite" type of volcano, which consists of alternating layers of lava flows and volcanic ash and cinders.

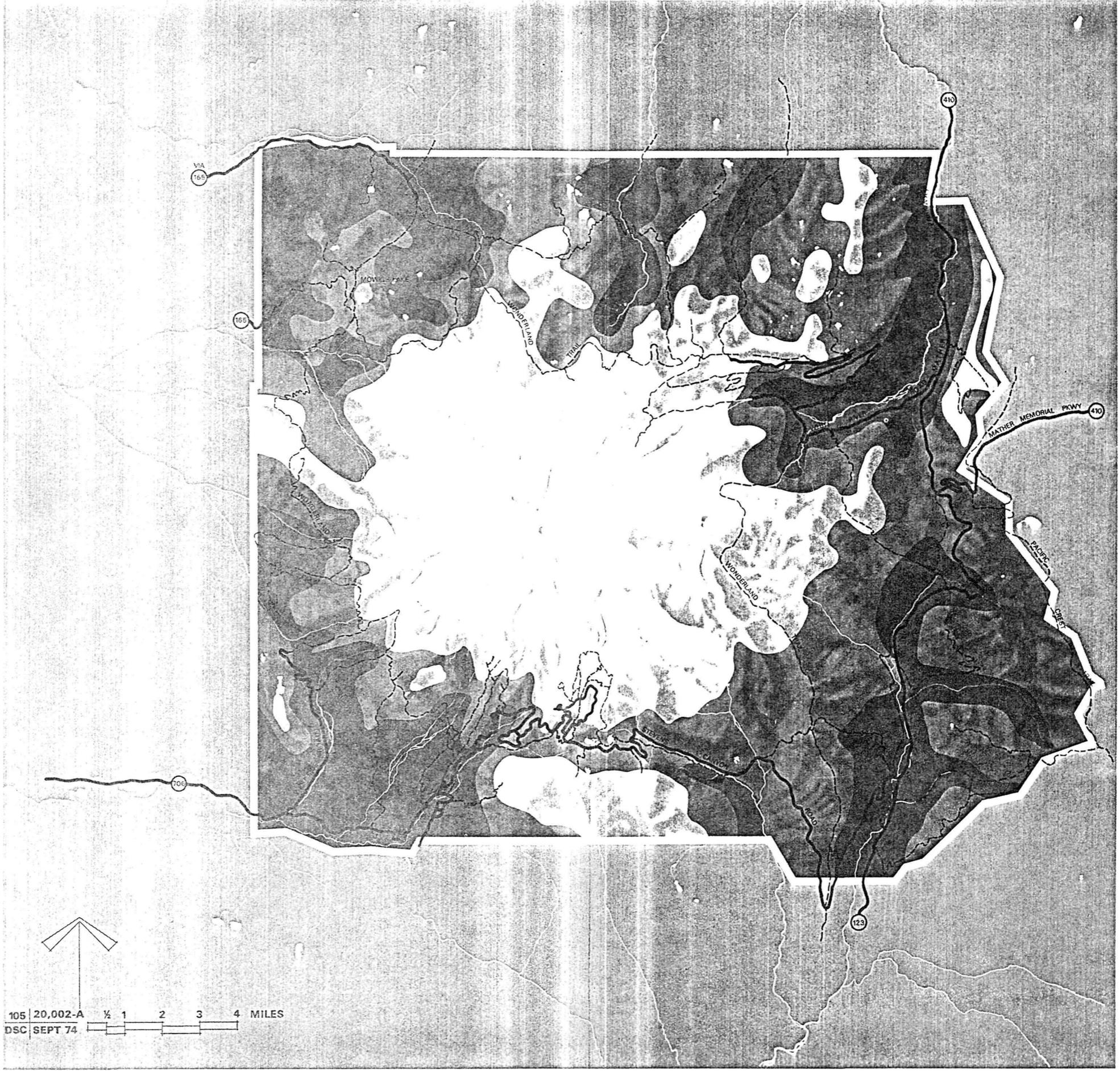
In the geologic scale of time, Mount Rainier appeared on the scene recently, within the last half-million years. The last major eruption period occurred about 2,000 years ago. The dynamic forces of volcanism and erosion are evident today, most recently demonstrated by eruptions between 1820 and 1854, the Kautz Creek mudflow of 1947, the Little Tahoma rockfall of 1963, and the South Tahoma glacial outburst floods of 1967 and 1971.

Climatic, topographic, and soil conditions combine to give Mount Rainier the richest plant growth of the Cascades. This vegetation supports a diverse variety of wildlife. An elevation range of 1,560 to 14,410 feet permits no less than four major life zones to occur. Over 700 species of vascular plants are present within the park, including spectacular virgin forests containing nearly 40 percent of the kinds of trees native to the region.

Vegetation Zones



* Approximately 1000 feet higher in the Sunrise Ridge area.



Cathedral-like forest giants of Douglas-fir, western redcedar, and western hemlock occur primarily in the humid transition zone, while Pacific silver fir, Alaska cedar, noble fir, and western white pine appear in the Canadian zone. Spectacular subalpine flower fields laced by stands of mountain hemlock and subalpine fir dominate the Hudsonian zone. The harsh arctic alpine zone supports hardy alpine plants, including mosses and lichens, in areas free from ice and snow. The climax forests of western hemlock, Pacific silver fir, and mountain hemlock; the Carbon River rain forest; and the arctic tundra of Burroughs Mountain are examples of prime resource areas within the park. Outstanding scenic features include Silver Falls, Commet Falls, and Narada Falls, Nisqually Vista trail, Box Canyon of the Cowlitz, historic Longmire Meadow, the magnificent Tatoosh Range, and the Grove of the Patriarchs.

Spectacular subalpine meadows and flower fields have contributed to Rainier's world-wide reputation. Generally occurring between 5,000 and 6,500 feet, the panoramas of mountain flowers combine to make this region of the park the most popular. Because it is also the most fragile, maintaining a balance between its interpretation and its preservation has become extremely difficult.

Wildlife adds to the special attraction of Mount Rainier. Black-tailed deer,

Wildlife adds to the special attraction of Mount Rainier. Black-tailed deer, black bear, and mountain goat are popular natives numerous enough to permit frequent sightings by park visitors. Rocky Mountain elk were introduced into areas east of the park in 1912, and have subsequently increased their range to include many sections of the park. Cougar and coyote are also present in smaller numbers, while marmots and pikas are fascinating inhabitants of several life zones, including the harsh arctic alpine zone.

Weather reigns supreme at Mount Rainier, and produces abundant precipitation in the midst of wide ranges in temperatures and wind velocities. Rain or snowfall occur on a majority of days. At Paradise during the winter of 1971-72, a world's record of 1,122 inches of snow fell. Frequently the mountain is concealed by a shroud of clouds that may persist for weeks or can quickly dissipate, leaving the lofty peak bathed in sunlight. Climbers attempting to reach the summit are often turned back by severe winds and freezing temperatures. These factors have proven fatal to inexperienced hikers in the arctic alpine zone.

The park receives frequent and prolonged storms, particularly in the fall and extending into the late spring. During late fall or early winter, heavy rains often follow a period of heavy snowfall below elevations of 7,000 feet. Rapid melting of the snow and flooding in the lower river valleys frequently causes extensive damage to trails, roads, bridges, powerlines, and buildings.

The rugged topography and geologic hazards leave little area within the park that is adaptable for large-scale development without being exposed to potentially dangerous natural occurrences or requiring major alterations of the landscape.

During the last 12,000 years most volcanic eruptions have been relatively small in scale, but studies (see appendix E) have shown a potential for volcanic hazards, which must be considered in future planning.

HISTORICAL BACKGROUND

Local Indians inhabiting the area surrounding Mount Rainier made annual hunting and berry-picking pilgrimages into what is now the

park, and Indian legends about "The Mountain" contribute a colorful introduction to the human history of Mount Rainier. It is generally accepted that there were no permanent Indian villages within the park area, probably due to severe climatic conditions and religious feelings engendered by the massive peak.

Beginning with the botanical expedition of a British doctor, W. D. Tolmie, to the Mount Pleasant area in 1833 and continuing for more than 50 years, friendly Indian guides assisted the Europeans in exploring the mountain and its environs. In 1857, the Nisqually Indian Wapowety guided the Kautz expedition to 14,000 feet. In 1870, Sluiskin, a Yakima Indian, guided P. B. Van Trump and General Hazard Stevens to the mountain, where they accomplished the first recorded ascent to the summit. "Indian Henry," a Klickitat, assisted George Bayley, Van Trump, and James Longmire in ascending the mountain in 1883, and his farm on the Yelm prairie became a favorite stop for those possessed of the "mountain fever."

In that same year, two prominent stockholders in the Northern Pacific Railroad visited an area that is now part of the park, and they suggested that Mount Rainier be set aside as a national park.

In the years following, interest in a Mount Rainier National Park gained support. Included in those seeking such a goal was John Muir, who ascended the mountain in 1888 with Van Trump. Efforts of individuals, scientific groups, outing clubs, special committees, universities, and congressional representatives secured passage of a national park bill after considerable difficulty. President McKinley signed the bill into law on March 2, 1899, to make Mount Rainier the world's fifth national park.

THE PLAN

VISITOR USE AND DEVELOPMENT

Planning Approach

Since the park's establishment in 1899, the type and intensity of visitor use has changed dramatically. From a remote spa-like resort, attracting a select group of people from a much smaller population, it has changed to a heavily-used scenic area within easy access of a large metropolitan area.

Development within the park reflects these changing and increasing use patterns. Today, with two million people visiting the park annually, there are demands being made upon visitor-use facilities that are beyond their existing capacities. Inevitably these demands will become even greater in the future.

Space to provide additional development inside the park is severely limited by terrain and environmental conditions. In a few instances, existing development, mainly roads and parking areas, has had unwelcome effects upon both the resource and the visitor experience.

This plan proposes a redirection of use and its associated development according to the ability of the resource to absorb its impact. Of primary importance is the removal of development and activities that serve nonessential visitor and management needs from prime resource areas of the park. These activities and facilities should be located at more appropriate places within existing developed areas or, if possible, outside the park. No new developed areas are proposed.

PURPOSE

THE PURPOSE OF MOUNT RAINIER NATIONAL PARK IS TO PROTECT, PRESERVE, AND INTERPRET THE NATURAL, SCENIC, AND HISTORICAL RESOURCES OF THE PARK FOR THE BENEFIT AND APPRECIATION OF THE PEOPLE.

MANAGEMENT CATEGORY

THE PARK WILL BE MANAGED ACCORDING TO THE ADMINISTRATIVE POLICIES FOR NATURAL AREAS OF THE NATIONAL PARK SYSTEM.

Unfettered with extraneous uses and activities, each developed area will be able to provide a richer resource-related experience to more visitors.

When development is required to replace that which becomes obsolete or to accept relocated activities, efforts should be made to concentrate it within the smallest possible space consistent with enhancing the natural, esthetic, and social aspects of the environment.

OBJECTIVES:

OPERATE THE PARK ON A YEAR-ROUND BASIS, PROVIDING VISITOR SERVICES AT A LEVEL COMMENSURATE WITH SEASONAL DEMAND AND AT PLACES WHERE CLIMATIC CONDITIONS ALLOW.

PROVIDE FOR VISITOR USE BASED ON RESOURCE APPRECIATION VALUES AND SOCIAL FACTORS, WHILE ENSURING MAINTENANCE OF A QUALITY ENVIRONMENT.

CONTINUE WINTER RECREATION USE AT PARADISE AND PROVIDE FOR OTHER WINTER USE WHERE ECOLOGICALLY AND ESTHETICALLY COMPATIBLE.

The restructuring of use and development as proposed in this plan will be a continuing process, subject to continuous review and amendment. In an effort to provide the best possible experience to the broadest possible spectrum of people, management will become aware of changing trends in visitor needs and uses. As a result of research and observation, management will become aware of improvement or degradation of the natural, esthetic, and social values in the various areas of the park. These trends will determine a rearrangement of priorities, and restructuring of specific areas will vary accordingly.

The following changes are recommended:

Paradise

The brilliant wild flower displays during the summer and the spectacular view of Mount Rainier and mountain ranges have historically attracted large numbers of people to Paradise. It

will undoubtedly remain a strong attraction in the years to come. Opportunities exist here to introduce large numbers of people to the forces of nature in and around Paradise. It is possible to concentrate interpretive and resource management efforts to ensure a quality experience.

Although it is possible to let a large number of people use the area, it is not possible to accommodate the large volume of automobiles that are virtually the only means of access to Paradise. Parking lot size is simply too small to serve present needs on busy weekends. Increasing visitation will compound existing deficiencies. It is not practical to increase parking lot size, as the capacity of park roads serving it would soon be exceeded. Furthermore, increasing the parking area size and increasing road capacity would have unacceptable impact upon the resource and the visitor experience.

Alternate methods of getting people to Paradise and Sunrise should be considered. A transportation study is required to determine the exact methods required to satisfy present and future needs. Caution is necessary in determining alternate transportation methods. Visitor acceptance and resource preservation must be considered. As an interim solution, this plan proposes a bus system between Longmire and Paradise to be operated on peak-use days during the summer. Hopefully, a long-term solution to transportation can be found for supplementing the use of private vehicles and reducing congestion throughout the park.

The campground should be removed. The small amount of use it receives due to the short snow-free season does not justify the intrusion it imposes upon the natural environment and upon the visitor experience. The land should be restored to meadow.

REMOVE CAMPGROUNDS FROM HIGHER, MORE FRAGILE AREAS OF THE PARK.

**DESIGN ALL FACILITIES
TO COMPLEMENT NATURAL
LANDFORMS AND VEGETATIVE
COVER.**

Overnight accommodations at Paradise should be allowed to expand within the space presently occupied by Paradise Lodge and its immediate vicinity.

Park Service administrative facilities and housing and concessioner housing, not essential for serving the visitor, should be relocated. Circulation within the Paradise area will be limited to paved trails. Picnicking will be restricted and concentrated to minimize degradation of the fragile higher scenic meadowlands. Winter recreation activity will continue, with emphasis upon ski and snowshoe touring.

Sunrise

Increased emphasis should be placed upon visitor use at Sunrise. Here, as at Paradise, concentrated visitor use in the fragile Hudsonian zone is continuing. It is hoped that interpretive presentations will convey to the visitor the delicate character of the area and the importance of confining foot travel to existing trails.

The possibility of expanding viewing and interpretive facilities will be studied. All existing interpretive structures will be maintained.

Expansion of the parking area at Sunrise is not planned. The existing road, pulloffs, and parking areas will be maintained for visitors traveling in their private vehicles.

The drive-in campground at Sunrise will be converted to a walk-in campground.

Should visitation increase, causing congestion in the Sunrise parking areas, a plan for optional

shuttle bus service could be implemented. Visitors who would prefer an informative bus ride to Sunrise could leave their vehicles in a designated parking area near the White River entrance and join an interpretive specialist on the bus for the scenic drive. The supplemental transportation might relieve the congestion at the Sunrise Ridge overlook and the Sunrise parking areas.

Longmire

Longmire, located in the lower forested area of the park, has historically been the administrative center of the park and a stopping place for visitors. With the development of visitor-use facilities in the other areas of the park, this area has evolved to serve primarily as an administrative center. This trend is now being reversed. Park administrative offices, maintenance shops, and housing will be located outside the park at Ashford. Only those facilities necessary for onsite operation will remain at Longmire. Facilities and activities relocated from Paradise will be accommodated at Longmire. Longmire can also serve as a transit terminal for the interim bus transit system to Paradise.

Carbon River-Ipsut Creek

This unique resource area of the park is particularly appropriate for the immediate implementation of a visitor circulation system using vehicles other than automobiles. Unlike the loop road accesses to the heavily visited areas of the park, access to this area is by dead-end road.

Foot, bicycle, and possibly a mini-bus will provide access through the Carbon River rain forest, and to the Ipsut Creek area, from a parking area at the park boundary. In other respects this area will function as at present.

Mowich Lake

Removal of the automobile from the vicinity of this highly scenic area will greatly increase the quality of the visitor experience, and will eliminate the impacts on the environment associated with vehicular travel. The road will end inside the park boundary, where parking space will be provided. Portions of the road beyond the parking lot will be converted to a trail providing access to the lake.

Camp Muir

Camp Muir has historically served as the overnight staging area for those who climb the mountain. Within the last decade, attempts to climb Mount Rainier have increased three-fold, a trend that will no doubt continue. This use has put heavy demands upon facilities. Present facilities are rugged and consistent with the landform and with the experience sought by those who reach the 10,000-foot-high south slope camp.

The backcountry management plan will limit and regulate the use capacity at Camp Muir. As in all high rocky areas, sanitation and disposal of wastes is difficult. Effort should continue to keep solid wastes to a minimum and to find more efficient methods for disposal of all wastes. Logistics should be as dependent as possible upon the climbers and less dependent on the helicopter.

Ohanapecosh

The campground and other visitor-use facilities here provide excellent opportunity to experience the successional Douglas-fir forest of the humid transition vegetative zone. Development and the use it generates are compatible with resource values.

Cougar Rock

The picnic area and campground at Cougar Rock also provide opportunity to experience the lower forested areas of Mount Rainier.

White River

The campground is located within the upper fringes of the forested area of the park, and trails from here lead immediately into the meadow areas of the Hudsonian zone. It will remain as the most remote of the park's established vehicle campgrounds.

The ranger station and entrance station area is in need of rehabilitation. A new facility serving present functions should be provided in a location that will better serve the visitor.

Roads and Trails

Two-lane State highways, through agricultural and timber lands and small towns, lead from urban areas and interstate highways to the park. Scenic park roads, augmented with a through-State road, offer a loop trip through the park and adjacent national forest lands, and provide primary access to major developed areas. Orientation to the opportunities available within the park is offered at entrance stations on park roads.

In order to provide for greater visitor enjoyment of the park, changes in the present road system are proposed. The West Side Road should be closed to vehicular traffic at Round Pass. This would enable a large portion of the west side of the park to be enjoyed by the increasing number

of hikers and backcountry users without the intrusion of the automobile. Parking space would be provided at the new road terminus and the abandoned portion of the road would be converted to trail status.

Parking space would also be provided at park boundaries along access roads to Carbon River-Ipsut Creek and Mowich Lake. Portions of the present road to Mowich Lake will be converted to a trail.

PROVIDE TRAIL IMPROVEMENTS
AT ALPINE FLOWER FIELDS TO
PREVENT RESOURCE
DEGRADATION.

Implementation of supplemental shuttle busing to Sunrise will require that a visitor parking area be established near the White River entrance. Strong emphasis must be placed upon selecting a transportation system and a parking terminal site that will have the least possible impact on the environment.

PROVIDE ADDITIONAL TRAILS
AT LOWER ELEVATIONS FOR
VISITOR DISPERSAL.

In the future, it may be feasible to use interpretive buses in other heavily visited areas of the park. However, busing to Sunrise would be carefully evaluated before planning the expansion of the public transportation system.

PROVIDE FOR VARIOUS
LEVELS OF VISITOR-
USE CONCENTRATION IN
THE BACKCOUNTRY,
ACCORDING TO VISITOR
RESOURCE APPRECIATION
VALUES AND SUITABILITY.

Over 300 miles of foot trails provide access through virtually all the ecosystems of the park. These trails offer a variety of experiences, degree of difficulty, and time requirements. Additional trails should be provided within the lower forested areas of the park in response to existing and proposed visitor use of those areas.

Additions, deletions, and improvements in the trail system will be required from time to time to promote proper visitor dispersal and to protect resource values. The present policy of confining visitors to paved trails at Paradise may require the initiation of visitor educational measures or even outright physical barriers to prevent foot traffic through meadows.

Hiking and backpack camping in the high country and in other primitive areas of the park are increasing rapidly. The carrying capacity in these areas of the park should be given further evaluation. The present permit system for use allows proper dispersal and is being used as a tool to limit use.

RESOURCE MANAGEMENT AND USE

General

Restructuring of development will have the effect of familiarizing people with the prime physical resources of the park, which will in turn result in less damage to the prime resources. A need exists to repair damage done in the past and to ensure perpetuation of those physical resources that have historically given Mount Rainier its significance.

The activities of modern man, particularly land-use practices outside the park, have had an effect upon park ecosystems. The extent of this effect should be determined. Research and general observation give some knowledge about how ecosystems may be restored to ensure their viability; however, much additional study is needed. Some of the most critical resource management needs are discussed below.

Meadows

The subalpine wild flower fields and meadows of the Hudsonian zone are being invaded by subalpine fir. "In and around Paradise, where most visitor use of this zone occurs, efforts must be made to restore and preserve the historic distribution of plants in order to provide interpretation of this ecosystem as part of the visitor experience. Other areas of this zone will be managed to minimize the influences of man, and under this policy, the invasion of subalpine fir will be permitted to proceed naturally.

CONTINUE RESEARCH TO IDENTIFY AND MONITOR ENVIRONMENTAL QUALITY BENCHMARKS.

MAINTAIN SUBALPINE WILD FLOWER FIELDS AND MEADOWS THROUGH LANDSCAPE MANAGEMENT; CLEAR VISTAS TO MOUNT RAINIER AND RELATED SCENERY WHEN NECESSARY FOR VISITOR APPRECIATION; AND ALSO PREVENT RESOURCE DEGRADATION CAUSED BY ADVERSE VISITOR USE.

developed area

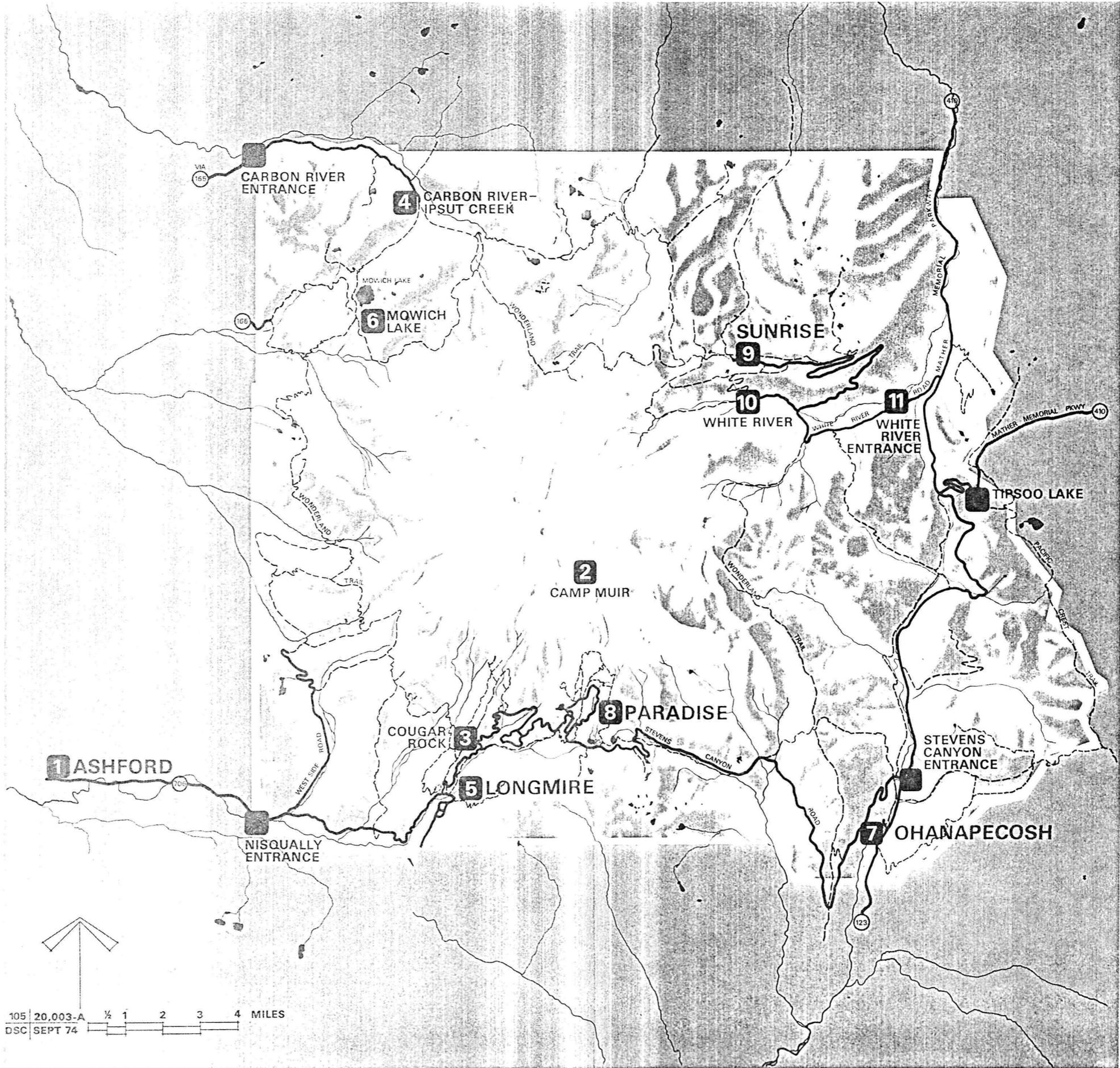
facility

	INFORMATION	INTERPRETATION	VISITOR CENTER	CAMPGROUND	PICNIC AREA	AMPHITHEATER	TRAILS	RANGER STATION	LODGING	MEALS	STORE	FUEL	PARK ADMIN. OFF.	NPS HOUSING	CONCESS. HOUSING	NPS MAINT./STOR.	CONCESS. MAINT./STOR.	GUIDES	BASE CAMP	SHUTTLE BUS DESTINATION/STAGING AREA	
1 ASHFORD	■											■	■	■	■						
2 CAMP MUIR	■		1																■	■	
3 COUGAR ROCK	■	■	■	■	■	■							1								■
4 CARBON RIVER-IPSUT CREEK	■	■	■	■		■	■						1								
5 LONGMIRE	■	■	■	■		■	■	■	■	1	3	1	■	■	■						■
6 MOWICH LAKE			2			■	■						1								
7 OHANAPECOSH	■	■	■		■								■		■						
8 PARADISE	■	■	3	■		■	■	■					1	1					■		■
9 SUNRISE	■	■	2	■		■	■	1		3			1	1	1	1					■
10 WHITE RIVER CAMPGROUND	■		■	■		■	■						1								■
11 WHITE RIVER ENTRANCE	■					■	■						■		■	■					■

legend / notes

- EXISTING
- PROPOSED
- RENOVATION, REPLACEMENT, OR EXPANSION
- 1 MINIMAL FACILITY – MINIMUM REQUIRED FOR OPERATION
- 2 CHANGE TO WALK-IN
- 3 REMOVE

MOUNT RAMBLER NATIONAL PARK
General Development



Lower Forested Areas

The forest mosaic within these areas is determined by dynamic successional processes. The predominance of Douglas-fir, a subclimax species within the transitional zone, has been the result of periodic opening of the forest canopy by blowdowns, mudflows, insect attacks, slides, and especially fire. The present policy of immediate suppression of all fires in these areas is mandated by the catastrophic potential of fire to destroy prime resource areas that have existed within the park for decades and its potential to cause severe economic hardship should it escape to land outside the park. Man-caused fires and wildfires do open the forest canopy somewhat before suppression, even under present policy. Continuing research is needed to determine if this policy is detrimental to the overall forest mosaic, and if it is, to determine other methods to ensure perpetuation of plant community viability.

Insects and Disease

In all natural ecosystems, insects and disease exert their influence. They should be allowed to continue this influence without interference by man. Artificial controls should be used only in the event that an epidemic attack threatens an entire ecosystem within the park, or when an infestation from within the park presents a potential damaging effect to outside forests.

**EMPHASIZE RESEARCH TO
DETERMINE NATURAL
PHENOMENA THAT AFFECT
PLANT SUCCESSION.**

Fish and Wildlife

The lakes within the park and the streams above natural barriers were probably naturally barren of fish. The low level of nutrients does not permit healthy propagation. Fish planting in these lakes will be discontinued, and they will be allowed to revert to their natural state.

To the extent possible, the indigenous species of wildlife and their habitat will be maintained in their natural condition. Natural predation will be allowed to control the populations. Special efforts should be made to allow visitors an opportunity to observe native species of wildlife in a natural environment.

DETERMINE SEASONAL RANGES AND MIGRATION PATTERNS OF ELK; DETERMINE HERDS' HEALTH AND SIZE; DETERMINE AREAS SUBJECT TO OVER-BROWSE; AND INITIATE MEASURES TO AMELIORATE ANY RESOURCE DAMAGE.

If populations of migratory ungulates build up due to conditions outside the park, control measures will be taken to reduce their numbers to a level that will not adversely affect park vegetation and soil, or habits of other species of wildlife. In the case of elk, present research will be continued to determine the best means of controlling the elk population that uses the park for summer range. Controls will be carried out in cooperation with the Washington State Department of Game and the Forest Service.

Exotic Plants

Plants not indigenous to the park should be eliminated, or if this is impossible, kept to a minimum.

ELIMINATE EXOTICS WHEN THEY POSE A THREAT TO INTRINSIC RESOURCE VALUES.

Much of the park is particularly appropriate for study by visitors, management, and educational and scientific institutions. Some of the most apparent areas for study include Burrough's Mountain arctic tundra area; the Carbon River rain forest; and outstanding examples of the

dynamic processes of volcanism, glaciation, and erosion. Other areas, including climax forests and unique plant communities, also offer exciting possibilities for both cursory and detailed studies.

Efforts should continue to make the results of these studies relevant to apparent needs.

Environmental study areas for use of local and regional school systems might be established, utilizing regular visitor-use areas and attendant facilities. Coordination with other State and Federal natural resource agencies and academic institutions would be valuable in mapping out the scope of such a program.

Historical Resources

Evidence of prehistoric occupation of the area that is now the park has not been found. It is known that the mountain itself held religious significance for many of the tribes occupying land around the park; however, their use was probably confined to hunting and food gathering.

Man's use is evident in those structures still standing that served the needs of early non-Indian explorers and conservationists, and of the Government stewardship since the park was established. The Longmire Cabin is presently being preserved and interpreted to visitors. Other structures, including some of those at Longmire and Paradise, and the superintendent's old office at the Nisqually entrance, warrant study to determine their significance and to direct preservation and future use.

LAND CLASSIFICATION

Classification of park land is based on National Park Service policy, landscape features, and existing and proposed uses.

Class II, General Outdoor Recreation Areas

The major park-use areas and primary road system fall into this classification. The area included in this classification is sufficiently large to accommodate projected use.

Class III, Natural Environment Areas

Minor roads, secondary-use areas, utility systems, buffer zones between Class II and Classes IV and V, and a 1/8-mile management zone along the park boundary where required are included in this classification.

Class IV, Outstanding Natural Areas

This classification, embracing most of the park, includes the magnificent glacial system, alpine flower fields, and lush forests for which the park was established.

Class V, Primitive Areas

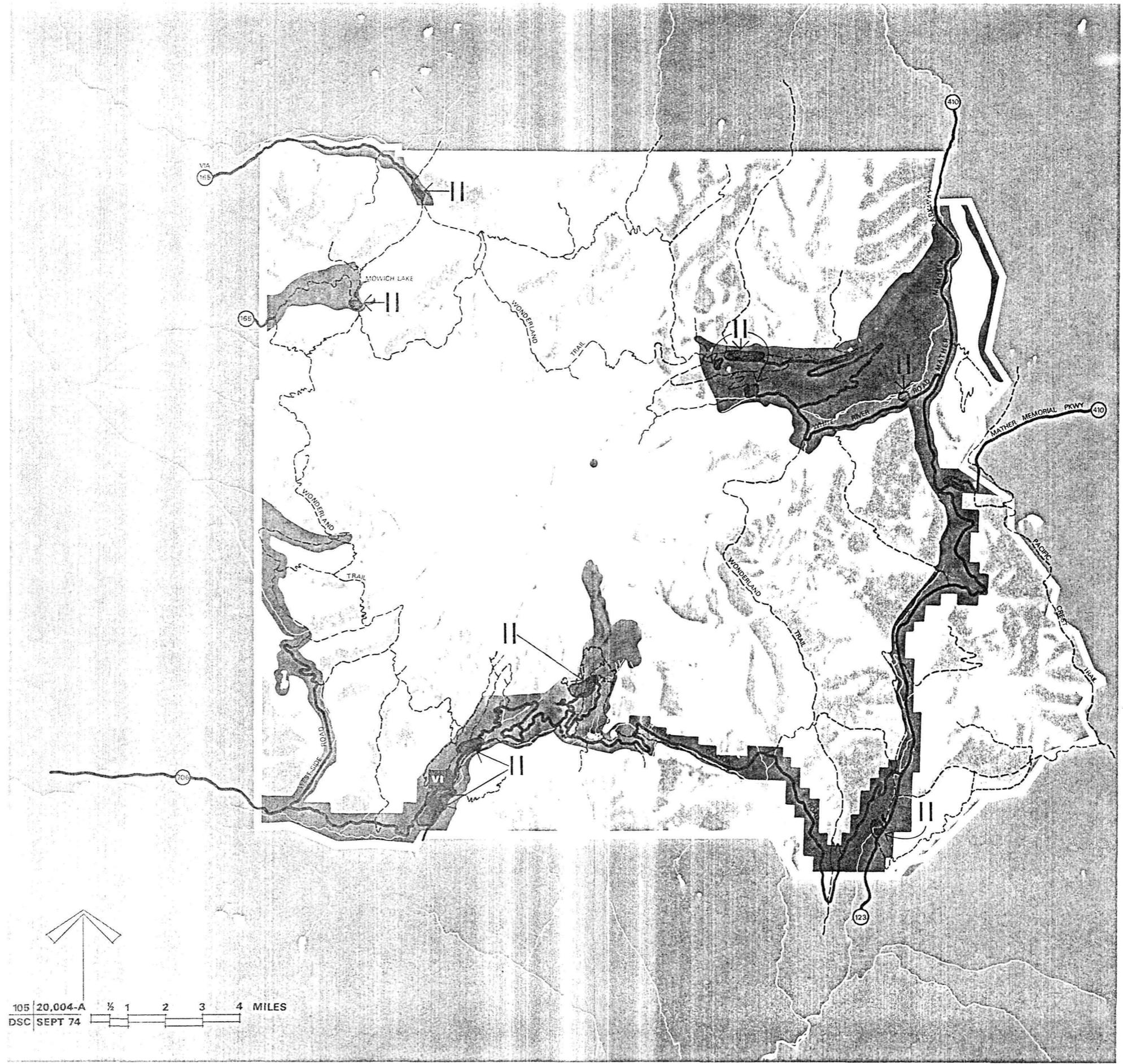
All roadless and natural areas suitable for wilderness designation are included in this classification.

Class VI, Historic and Cultural Sites

Only Longmire Meadow is included in this classification.

Land Classification

- III
 - IV
 - V
 - VI
- all roads class II



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INTERPRETATION

The interpretive program should introduce visitors to the resources and encourage them to learn about and appreciate natural features and processes. The program should encourage visitors to go into the park to study and to see the beauty of the many components that are Mount Rainier. Visitors will be urged to observe how parts of natural systems are interdependent on all other parts, and that man is one of these parts.

The main interpretive themes throughout the park are geology and ecology. Evidences of the dynamic geological forces that create and shape the land are starkly obvious everywhere. The different aspects of geology and climate – such as volcanism, soil formation, erosion, glaciation, and outburst floods – will be interpreted at those places where the visitor can best appreciate each aspect. Likewise, ecosystems within various vegetative zones will be put in context with each other and then interpreted

INTRODUCE VISITORS TO THE RESOURCES OF THE PARK; ENCOURAGE THEM TO STUDY AND UNDERSTAND LIFE PROCESSES/NATURAL SYSTEMS, SO THAT THEY MAY BETTER APPRECIATE THE NATURAL WORLD OF WHICH THEY ARE A PART.

specifically. Climatic and other environmental factors that affect species domination should be explained, so that by learning about different life zones, visitors will be able to appreciate those factors that encourage differences.

Main interpretive efforts will be made at major developed areas and will stress introductory experiences. Interpretation inside the prime resource area should provide experiences of greater depth.

At Paradise and Sunrise, efforts should be made to tie all aspects of geology and ecology together. Some visitors will be encouraged to learn about resources in greater detail; others, who are familiar with the park, will be able to draw conclusions.

In addition to the other interpretive duties assigned to Paradise, efforts should be made to assist visitors in gaining mental and physical skills that will enable them to deal with nature on nature's terms – to climb the mountain – to experience the backcountry.

At Sunrise, visitors are afforded spectacular views of Mount Rainier and Emmons Glacier, and expansive views of the landscape over ridges and river valleys. Interpretive opportunities are exceptional here. From Sunrise, visitors should be encouraged to use trails and experience a feeling of discovery. Implementation of optional shuttle busing would provide visitors with an interpretive trip through different life zones, adding even more to the rewards of a visit here.

At Longmire, human history will be an interpretive subtheme. The main thrust here should be natural history, as it will be at other developed areas in the lower forested portions of the park.

The program's strength will continue to be in the personal services performed by the park staff – orientation, guided hikes and walks, talks, daytime and evening programs, and informal interpretation. These will be supported by audiovisual programs, self-guided trails, wayside exhibits, radio broadcasts, interpretive broadcasts, and other interpretive aids. Provision should be made to vary the program content of these support devices as much as possible in order to provide diversity for repeat visitors. In developing all interpretive programs and devices, the involvement of the visitor should be encouraged to the greatest extent possible.

LAND

A few patented mining claims remain in private ownership. All are located in a group on the upper reaches of the Inter Fork of the White River. The possibility of mining becoming an untenable adverse use requires that the right to these claims be acquired.

A recommendation made in 1965 in the *North Cascades Study Report* is that the boundary of Mount Rainier National Park be extended to include the southern portion of the Tatoosh Range. The present boundary line extends through this mountain range, with the northern portion in the park and the southern portion in the Gifford Pinchot National Forest. This magnificent range, highly significant geologically and scenically, has a close relationship to Mount Rainier. The inclusion of the whole range in the park is a logical objective.

It is proposed that a boundary adjustment be developed jointly with the Forest Service to satisfy the above objective. The addition would bring into the park the remaining portion of the

ACQUIRE SUFFICIENT INTERESTS
IN INHOLDINGS AND ADJOIN-
ING LANDS, NECESSARY TO
PROTECT PARK RESOURCES
AND PERMIT OPTIMUM
VISITOR USE.

Tatoosh Range as well as that portion of the Stevens Canyon Road on Backbone Ridge now located outside of the park.

Along the west and north boundaries, the primary objectives are the implementation of preservation zones and realization of greater control over visitor use, especially within the subalpine meadows. Land subject to use agreement along these boundaries is totally within the Snoqualmie National Forest.

REGIONAL COOPERATION

ACTIVELY PARTICIPATE IN REGIONAL PLANNING EFFORTS IN ORDER TO IDENTIFY THE PARK'S ROLE IN SATISFYING REGIONAL REQUIREMENTS.

Mount Rainier is a part of the network of public and private parks, forests, and open space, flanking and interspersed among the urban areas of western Washington. The Puget Sound Government Conference guides development and growth for the most populous of these urban areas. The close interaction between the people in these cities and Mount Rainier makes it imperative that the Park Service expand its participation in a truly regional planning effort. Land-use planning and zoning, highway and mass transit planning, and many other aspects of regional planning should, at the formative stage, use input from management. Then, development and program planning can take guidance from completed regional plans.

Finally, coordination among owners and managers of public and private recreation and open-space lands within the region is necessary if the development of programs for each are to complement one another. Certain timber cutting and reforestation practices and recreational programs on neighboring Forest Service land and land owned by the St. Regis Paper Company are critical both from an ecological and an esthetic standpoint to the future of the park.

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APPENDIX A: MOUNT RAINIER NATIONAL PARK MANAGEMENT STATEMENT

The following statement by the superintendent of Mount Rainier National Park reflects park management's needs and goals relative to this master plan.

[copy]

PURPOSE

Congress established Mount Rainier National Park by Act of March 2, 1899 (30 Stat. 993) as a "...public park... for the benefit and enjoyment of the people..." Enlargements to the park boundaries were made on May 28, 1926 (44 Stat. 668), and January 31, 1931 (46 Stat. 1047). An additional 210 acres was purchased on January 13, 1946, for the Ashford Administrative site.

The purpose of the park is to protect, preserve, and interpret the natural, scenic, and historical resources in Mount Rainier National Park. These include Mount Rainier, a classic example of a composite dormant volcano, with the largest single peak glacial system in the contiguous United States. The park also contains outstanding examples of the native flora and fauna of the Cascade Mountains.

In 1893, committees were appointed by the Geological Society of America, the National Geographic Society, the American Association for the Advancement of Science, the Sierra Club, and the Appalachian Mountain Club to make recommendations to Congress for the establishment of a national park in Washington to include Mount Rainier (then called Mount Tacoma).

These committees submitted a combined recommendation which was the basis for the bill establishing the park. Contained in the recommendation were the following statements:

"The combination of ice scenery with woodland scenery of the grandest type is to be found nowhere in the Old World, unless it be in the Himalayas; and, so far as we know, nowhere else on the American continent."

"Mount Tacoma is singular not merely because it is superbly majestic; it is an arctic island in a temperate zone."

"Therefore, for the preservation of the property of the United States, for the protection from floods of the people of Washington in the Yakima, Cowlitz, Nisqually, Puyallup, and White River valleys, and for the pleasure and education

of the nation, your memorialists pray that the area above described be declared a national park forever.”

“For the National Geographic Society, G. Gardiner Hubbard
For the American Association for the Advancement of Science, J. W. Powell
For the Geological Society of America, Bailey Willis
For the Sierra Club, John Muir
For the Appalachian Mountain Club, John Ritchie, Jr.
Washington, D.C., June 27, 1894”

MANAGEMENT CATEGORY

Mount Rainier National Park is a natural area and shall be managed in accordance with the approved policies for such areas.

BASIC DATA

Resource Description

The topography of the park is rugged and precipitous, consisting mainly of peaks and valleys. The Cascade Range on the east, the Tatoosh Range on the south, and mountains on all sides tower from 2,000 to 4,000 feet above the valleys. They are spectacular mountains but are dwarfed by the mass of Mount Rainier.

From the 2,000-foot elevation at the park boundaries to 4,000 feet, dense forests of Douglas-fir, Western redcedar, and Western hemlock clothe the valleys and hillsides. Between 4,000 feet and 6,500 feet, Western hemlock, Alaska cedar, and subalpine fir grow in increasingly open stands. Above 7,000 feet, rock, snow, and ice prevail.

The slopes of Mount Rainier provide suitable habitat for approximately 130 species of birds and 50 species of mammals. Some animals, such as deer and elk, make seasonal migrations, following receding snows up the mountain in spring and descending at the approach of winter. The elk present a potential resource management problem. Beginning in 1913, there have been six elk transplants close to Mount Rainier National Park. These animals have prospered and they are extending their range within the park. Evidence is available that overbrowsing and competition for forage occurs in some areas.

Weather is a highly significant factor in the existence of glaciers, forests, and other natural features. As moisture-laden westerly winds move inland, the first barrier they meet is Mount Rainier and the Cascade Range. Here moisture falls as rain

and snow. There is a significant variation in climatic conditions within the park. For example, Paradise (5,400 feet) receives an average of 106 inches per year, and Longmire (2,700 feet) receives an average of 81 inches. Longmire has twenty percent less precipitation, one-fourth as much snow, and nearly twice as long a snow-free season as Paradise.

Some warm, clear weather may be expected in July and August and again in late winter, although clouds and fog often obscure the mountain. There is an average of 110 cloudless days each year. The snowpack of 10-30 feet at the 5,000-foot level usually disappears in early July, only to begin to accumulate again in October.

The hydrology of the park is complicated by several factors. Glacial streams change their channels rapidly and constantly, resulting in damage to roads and trails. Fall floods resulting from warm winds and rain melting early snowpacks also wipe out trails and bridges and at times other facilities. Debris flows may accompany the fall floods, or may result from glacier outburst floods, generally in late summer. These too have been extremely destructive. The snowpack that stores over half of each year's precipitation prevents the use of some of the most scenic trails and roads until July.

Resource Use

Approximately 70 percent of the park visitors come during June, July, August, and September, and only 8 percent come during December, January, February, and March. Regardless of the time of year, 54 percent of all visitation occurs on weekends. Mount Rainier is primarily a summer and weekend use area. About 90 percent of the park visitation is on a day-use basis. Most visitors view the features from within or near their automobiles.

Overnight use in the campgrounds and lodges comprises less than 10 percent of the total visitation. There is a strong local feeling that Mount Rainier belongs to Tacoma and Seattle, since over 50 percent of the visitors are from these cities. The people of the Puget Sound area were instrumental in the park's establishment. They have influenced its development over the years and continue to be the major users.

Less than 10 percent of the visitors to Mount Rainier camp, but they number about 135,000 each year. While campers come from many walks of life, this is one activity that is within the financial means of all segments of society. In this sense, it is one of the most democratic aspects of park use.

More than 200,000 people use the park trails each year. This is slightly more than 10 percent of the total park visitation. There are presently less than 500 horse users per year, due in part to steep terrain and lack of facilities.

Climbing Mount Rainier has increased over 400 percent in 10 years. Both guided parties and independent parties have been on the rise. The rate of increase is accelerating.

Fishing, boating, and swimming activity is very limited, due mainly to cold water in high-elevation lakes and glacial streams. Less than 200 boats are used in the park each year.

An average of 16,000 skiers use the park each winter. Other snow play use, however, amounted to more than twice that figure. Snowmobile use is almost nil. Only 50-60 vehicles are recorded annually.

There has been very little, if any, activity on the mining claim properties in the past five years. There is no grazing permitted in the park except that incidental to saddle horse trips.

In their 10-year forecast, made in 1968, the Branch of Statistical Analysis estimated that Mount Rainier will receive 1,938,700 visitors by 1977. This is a very modest increase.

Presently, there are some 8-12 days each season (Saturdays and Sundays) when portions of the park road system, parking areas, campgrounds, and picnic areas are inadequate. However, considering a 90-day summer season, present capacity is adequate. Under the section "Visitor Use," increases in picnic sites are mentioned. This involves deletions as well as increases. Several minor revisions in parking facilities are proposed.

Sanitation facilities are not adequate at high elevations on the mountain at present. Such facilities will have to be improved in both quality and quantity as the number of climbers increases.

The Rainier National Park Company is now rehabilitating existing rooms at the Paradise Inn. This is essential to bring them to an acceptable standard. There is need to replace the entire concessioner facility at Longmire to adequately serve present as well as future visitors.

REGIONAL DESCRIPTION

The region is rich in all types of recreational opportunities. The park is surrounded by national forests and timber company lands offering big game hunting (deer, elk, goat, and bear) in addition to fishing, hiking, camping, and similar activities. More opportunities exist for development of campgrounds outside the park than within, due to lower elevations, better topography, and longer season of use. There are presently 120 campgrounds and picnic areas within a 65-mile radius of Mount Rainier, and room for development of many more.

There are eight other National Park Service areas in the State – two national parks, three historic sites, and three recreation areas – with a total acreage of 1,910,000 acres. The Forest Service administers nine national forests in Washington, including approximately 9.1 million acres receiving visitation totaling 10.4 million visitor-days annually. Two national forests, the Snoqualmie and Gifford Pinchot National Forests, almost completely surround Mount Rainier National Park. Sprinkled across the State are 13 national wildlife refuges and 2.5 million acres of Indian lands. The Bureau of Reclamation and the Corps of Engineers offer numerous recreational opportunities in the Columbia Basin Project. The State of Washington operates a park system embracing 77,949 acres, consisting of 94 State parks, 36 marine parks, and 43 historical and geological sites. Other recreational lands in the State include over 375,000 acres, providing access to more than 250 lakes, under the State Department of Game; two million acres of forest land; and two million acres of aquatic lands managed by the State Department of Natural Resources.

In the Pacific Northwest, tourism is the fourth largest and probably the fastest growing basic industry. Only the food, defense, and forest products industries, in that order, account for greater employment. Visitors to Mount Rainier National Park during 1968 spent \$12.6 million in the State of Washington (Department of the Interior, National Park Service 1970).

There are four metropolitan areas located within a 65-mile radius of the park: Seattle, population 590,000; Tacoma, 188,000; Yakima, 46,000; and Olympia, 21,000. The major portion of visitation to Mount Rainier comes from these urban areas.

Yearly visitation origins are as follows:

Washington State	72%	Other States	27%
King County	48%	Foreign	1%
Pierce County	31%		
Thurston County	12%		

There are six access roads into the park. The State Highway Commission has furnished estimates for 1990 based upon trends during the past four years. Generally, their estimates run from three to four times the present average daily volume.

MANAGEMENT OBJECTIVES

General Management

Operate the park on a year-round basis, providing visitor services commensurate with seasonal demand.

Complete Park Headquarters development at Ashford site to include administrative offices, employee housing, and maintenance facilities.

Provide two management districts within the park.

Provide ranger stations, visitor centers, self-guiding interpretive facilities, maintenance facilities, and employee housing at six developed areas: Longmire, Paradise, Ohanapecosh, White River, Sunrise, and Carbon River.

Collect entrance fees at Nisqually, White River, Carbon River, and Stevens Canyon entrances daily during June, July, August, and part of September. Otherwise these stations will be operated on weekends and holidays only, or until closed by snow.

Increase the park staffing level to make possible an operation at a program standard commensurate with protection and visitor needs in the foreseeable future.

Concession facilities and services will be provided as follows:

- a. Longmire: Hotel, food service, service station, curio shop, and camper supplies.
- b. Paradise: Hotel, food service, curio shop, guide service, and winter snow play facilities.
- c. Sunrise: Food service, curio shop, and camper supplies.

Acquire the remaining 165 acres of inholdings in fee simple.

Acquire lands on the southeastern end of the Tatoosh Range and Backbone Ridge as suggested in the *North Cascades Study Report*.

Obtain scenic easements from private landowners and cooperative agreements with the Forest Service along the north, south, and west boundaries to protect the natural scenic integrity of the park.

Maintain an architectural theme on all future developments, utilizing native stone and wood.

Utilize commercial power for all government and concession facilities.

Resource Management

Clear vistas at selected points to provide and retain outstanding views of Mount Rainier and related scenery.

Manage the areas at and adjacent to Paradise through manipulation of vegetative cover to retain the subalpine wild flower fields. The system of surfaced trails will be expanded to reduce human impact on the delicate soil structure, which is susceptible to severe erosion.

Manage the Longmire meadow through manipulation of vegetation to restore and retain the historic scene.

Manage other subalpine meadows such as Sunrise, Indian Henrys Hunting Ground, Klapatche Park, Spray Park, Summerland, and Van Trump Park to retain the historic and ecological scene. This will entail progressive constraints on human use of the areas for camping. This is a very long-term objective designed to preclude damage of the kind which has occurred at Paradise. Some vegetative manipulation may be necessary based on thorough ecological research of the areas.

Control plant exotics such as the foxglove, bull thistle, Canada thistle, Scotch broom, and Klamath weed by an annual program of eradication.

Continue research on the numbers and migration patterns of elk, and on damage and threats they cause to native vegetation. Initiate control measures as necessary.

Emphasize research on deer and elk populations, glaciation and volcanism, and fire as agents affecting plant succession.

Visitor Use

Provide Class A campgrounds at elevations below 4,500 feet. Eliminate all camping from Paradise. Class A campgrounds will provide sites for either tent or trailer camping, but without utility hookups. Presently, there are approximately 900 automobile campsites within the park. Class A campgrounds will not exceed this level. Work with public land managers and private landowners on the perimeter of Mount Rainier National Park to ensure that camping opportunity is planned on a regional basis and to encourage the private sector to provide public camping facilities.

Provide increased picnicking facilities throughout the park. The total number of sites will be based on a thorough analysis of the natural and scientific values of the visitor-use areas involved.

Extend the trail system to provide better user distribution and to increase the number of lowland trails. Remove social trails and restore to natural conditions. Pave, or otherwise stabilize, selected trails in the highly used subalpine meadows at Paradise and Sunrise.

Provide for horse use within Mount Rainier National Park to the extent that such use does not impair ecological values. Historic practices of loose grazing will be reduced and ultimately eliminated. Use of concentrated horse foods makes this feasible. Those trails which cannot be maintained without undue erosion will be closed to horse use. A horse concession will not be provided.

Provide recreational fishing in the lakes and streams where this activity will not unduly disrupt the maintenance of the natural aquatic or shoreline environments. The introduction of hatchery-reared trout into the natural ecosystem will be phased out in order to improve quality angling for native fish.

Provide primitive campgrounds in the backcountry. Limit all backcountry development to areas most suitable for supporting concentrated use.

Provide snow recreation opportunity at Paradise, with attendant visitor services. Provide for snowmobile use on selected roads that are closed by snow and are away from visitor concentrations.

Provide a comprehensive and intensive climber safety program. Maintain a high camp with public shelter and sanitation facilities at Camp Muir and an emergency shelter at Camp Schurman.

Interpretation

The interpretive theme is: "An arctic island in a temperate zone." The "arctic island" will be interpreted as a whole, inseparably related, though set apart by elevation from its surrounding "temperate zone."

Provide the following facilities needed to interpret the park:

- a. At Longmire, an all-year information and orientation station, including simple exhibits that briefly state the significance of the park.
- b. At Paradise, all-year information and interpretation with programs and exhibits that relate the significant features of the mountain to visitors.
- c. At Sunrise, a new seasonally operated visitor center with exhibits that pertain primarily to the alpine zone and the geology of Mount Rainier.
- d. A series of new and revised wayside signs and exhibits to interpret specific roadside and trailside features, such as Nisqually Glacier, the Tatoosh Range, Narada Falls, Carbon Glacier, Emmons Glacier, and Little Tahoma Rockfalls.
- e. Several new or revised self-guiding trails at Kautz Creek, Longmire Meadow, Nisqually Vista, Trail of the Patriarchs, June Creek, and other suitable areas.
- f. Provide for environmental education programs geared to school children. Broaden the basic visitor interpretive program to emphasize environmental relationships.

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APPENDIX B: RECOMMENDATION*

Recommendation VIII.

There should be effective coordination and management between Mount Rainier National Park and surrounding National Forest lands executed through inter-bureau arrangements or cooperative agreements.

A start has been made in this direction. The superintendent of the Mount Rainier National Park and the concerned National Forest supervisors have collaborated in initiating coordinated planning to care effectively for the large number of expected visitors to the National Park. National Forest lands and facilities bordering the park will need to be used in a manner that is coordinated with park administration. The study team commends the "Coordinated Planning Report for Mount Rainier National Park and Snoqualmie and Gifford Pinchot National Forests, January, 1965" that the two agencies have initiated and recommends that this be continued and made an effective management instrument by both agencies. Master planning for the National Park should be carried forward aggressively.

The two agencies have a common management problem in their need to not destroy the fragile wilderness conditions of certain areas under their administration while at the same time making these areas available for the use and enjoyment of people. These problems involve the natural fragility of Wilderness areas, problems of sanitation, abuse of terrain, and utilization of pack stock. The two agencies should coordinate their expertise in the management of Wilderness areas.

* Excerpt from *North Cascades Study Report*, U.S. Department of the Interior, National Park Service, 1965, pp. 110-111.

APPENDIX C: LEGISLATIVE BRIEF

An Act To set aside a portion of certain lands in the State of Washington, now known as the "Pacific Forest Reserve," as a public park to be known as "Mount Rainier National Park," approved March 2, 1899 (30 Stat. 993).

Act of Legislature of Washington, approved March 16, 1901, ceding to the United States exclusive jurisdiction over Mount Rainier National Park in the State of Washington (Laws of Washington, 1901, p. 192).

An Act To accept the cession by the State of Washington of exclusive jurisdiction over the lands embraced within the Mount Rainier National Park, and for other purposes, approved June 30, 1916 (39 Stat. 243).

Excerpt from "An Act Making appropriations for sundry civil expenses of the Government for the fiscal year ending June 30, 1909, and for other purposes," approved May 27, 1908 (35 Stat. 365). (Amends Sec. 5, 30 Stat. 993.)

Excerpt from "An Act Making appropriations for sundry civil expenses of the Government for the fiscal year ending June 30, 1918, and for other purposes," approved June 12, 1917 (40 Stat. 152).

An Act To revise the boundary of the Mount Rainier National Park in the State of Washington, and for other purposes, approved May 28, 1926 (44 Stat. 668).

Excerpt from "An Act To provide for uniform administration of the national parks by the United States Department of the Interior, and for other purposes," approved January 26, 1931 (46 Stat. 1044).

An Act To extend the south and east boundaries of the Mount Rainier National Park, in the State of Washington, and for other purposes, approved January 31, 1931 (46 Stat. 1047).

An Act Authorizing the Secretary of the Interior to acquire on behalf of the United States Government all property and facilities of the Rainier National Park Company, approved September 21, 1950 (64 Stat. 895).

An Act To authorize the Secretary of the Interior to provide a headquarters site for Mount Rainier National Park in the general vicinity of Ashford, Washington, and for other purposes, approved June 27, 1960 (74 Stat. 219).

APPENDIX D: LEGISLATION

5. Mount Rainier National Park

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An Act To set aside a portion of certain lands in the State of Washington, now known as the "Pacific Forest Reserve," as a public park to be known as "Mount Rainier National Park," approved March 2, 1899 (30 Stat. 993)

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That all those certain tracts, pieces, or parcels of land lying and being in the State of Washington, and within the boundaries particularly described as follows, to wit: Beginning at a point three miles east of the northeast corner of township numbered seventeen north, of range six east of the Willamette meridian; thence south through the central parts of townships numbered seventeen, sixteen, and fifteen north, of range seven east of the Willamette meridian, eighteen miles more or less, subject to the proper easterly or westerly offsets, to a point three miles east of the northeast corner of township numbered fourteen north, of range six east of the Willamette meridian; thence east on the township line between townships numbered fourteen and fifteen north, eighteen miles more or less to a point three miles west of the northeast corner of township fourteen north, of range ten east of the Willamette meridian; thence northerly, subject to the proper easterly or westerly offsets, eighteen miles more or less, to a point three miles west of the northeast corner of township numbered seventeen north, of range ten east of the Willamette meridian (but in locating said easterly boundary, wherever the summit of the Cascade Mountains is sharply and well defined, the

Mount Rainier National Park, Wash., established.

Location.

Vol. 27, p. 1063.

Secretary of the Interior to make regulations, etc.

Leases; disposition of funds. (Amended by 89 Stat. 535, as amended. See pp. 9-12.)

Rights of way to park granted through Pacific Forest Reserve.

Protection of fish and game. Trespassers.

said line shall follow the said summit, where the said summit line bears west of the easterly line as herein determined); thence westerly along the township line between said townships numbered seventeen and eighteen to the place of beginning, the same being a portion of the lands which were reserved from entry or settlement and set aside as a public reservation by proclamation of the President on the twentieth day of February, in the year of our Lord eighteen hundred and ninety-three, and of the Independence of the United States the one hundred and seventeenth, are hereby dedicated and set apart as a public park, to be known and designated as the "Mount Rainier National Park," for the benefit and enjoyment of the people; and all persons who shall locate or settle upon or occupy the same, or any part thereof, except as hereafter provided, shall be considered trespassers and be removed therefrom. (U.S.C., title 16, sec. 91.)

SEC. 2. That said public park shall be under the exclusive control of the Secretary of the Interior, whose duty it shall be to make and publish, as soon as practicable, such rules and regulations as he may deem necessary or proper for the care and management of the same. Such regulations shall provide for the preservation from injury or spoliation of all timber, mineral deposits, natural curiosities, or wonders within said park, and their retention in their natural condition. The Secretary may, in his discretion, grant parcels of ground at such places in said park as shall require the erection of buildings for the accommodation of visitors; all of the proceeds of said leases, and all other revenues that may be derived from any source connected with said park, to be expended under his direction in the management of the same and the construction of roads and bridle paths therein. And through the lands of the Pacific Forest Reserve adjoining said park rights of way are hereby granted, under such restrictions and regulations as the Secretary of the Interior may establish, to any railway or tramway company or companies, through the lands of said Pacific Forest Reserve, and also into said park hereby created, for the purpose of building, constructing, and operating a railway, constructing and operating a railway or tramway line or lines, through said lands, also into said park.¹ He shall provide against the wanton destruction of the fish and game found within said park, and against their capture or destruction for the purposes of merchandise or profit. He shall also cause all persons trespassing upon the same after the passage of this act to be removed therefrom, and generally shall be authorized to take all such measures as shall be necessary to fully carry out the objects and purposes of this act. (U.S.C., title 16, sec. 92.)

¹ Repealed, so far as relates to lands within Mount Rainier National park, by 46 Stat. 1044. See p. 109.

SEC. 3. That upon execution and filing with the Secretary of the Interior, by the Northern Pacific Railroad Company, of proper deed releasing and conveying to the United States the lands in the reservation hereby created, also the lands in the Pacific Forest Reserve which have been heretofore granted by the United States to said company, whether surveyed or unsurveyed, and which lie opposite said company's constructed road, said company is hereby authorized to select an equal quantity of non-mineral public lands, so classified as nonmineral at the time of actual Government survey, which has been or shall be made, of the United States not reserved and to which no adverse right or claim shall have attached or have been initiated at the time of the making of such selection, lying within any State into or through which the railroad of said Northern Pacific Railroad Company runs, to the extent of the lands so relinquished and released to the United States: *Provided*, That any settlers on lands in said national park may relinquish their rights thereto and take other public lands in lieu thereof, to the same extent and under the same limitations and conditions as are provided by law for forest reserves and national parks. (U.S.C., title 16, sec. 93.)

Grant of land to Northern Pacific railroad in exchange for land relinquished.

Provido.
Lieu lands to settlers.

SEC. 4. That upon the filing by the said railroad company at the local land office of the land district in which any tract of land selected and the payment of the fees prescribed by law in analogous cases, and the approval of the Secretary of the Interior, he shall cause to be executed, in due form of law, and deliver to said company a patent of the United States conveying to it the lands so selected. In case the tract so selected shall at the time of selection be unsurveyed, the list filed by the company at the local land office shall describe such tract in such manner as to designate the same with a reasonable degree of certainty; and within the period of three months after the lands including such tract shall have been surveyed and the plats thereof filed by said local land office, a new selection list shall be filed by said company, describing such tract according to such survey; and in case such tract, as originally selected and described in the list filed in the local land office, shall not precisely conform with the lines of the official survey, the said company shall be permitted to describe such tract anew, so as to secure such conformity.

Patent.

Description in selection list of unsurveyed land, etc.

SEC. 5. That the mineral-land laws of the United States are hereby extended to the lands lying within the said reserve and said park.

Mineral land laws extended to park. (Amended by S5 Stat. 365. See p. 107.)

Act of Legislature of Washington, approved March 16, 1901, ceding to the United States exclusive jurisdiction over Mount Rainier National Park in the State of Washington. (Laws of Washington, 1901, p. 192)

Exclusive jurisdiction shall be, and the same is hereby, ceded to the United States over and within all the terri-

tory which is now or may hereafter be included in that tract of land in the State of Washington set aside for the purposes of a national park and known as "Rainier National Park," saving, however, to the said State the right to serve civil or criminal process within the limits of the aforesaid park in suits or prosecutions for or on account of rights acquired, obligations incurred, or crimes committed in said State, but outside of said park, and saving further to the said State the right to tax persons and corporations, their franchises and property, on the lands included in said park: *Provided, however,* That jurisdiction shall not vest until the United States, through the proper officer, notifies the governor of this State that they assume police or military jurisdiction over said park.

An Act To accept the cession by the State of Washington of exclusive jurisdiction over the lands embraced within the Mount Rainier National Park, and for other purposes, approved June 30, 1916 (39 Stat. 243)

Mount Rainier National Park, Wash. Sole jurisdiction over, ceded by Washington to United States, State process, etc.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the provisions of the act of the legislature of the State of Washington, approved March sixteenth, nineteen hundred and one, ceding to the United States exclusive jurisdiction over the territory embraced within the Mount Rainier National Park, are hereby accepted and sole and exclusive jurisdiction is hereby assumed by the United States over such territory, saving, however, to the said State the right to serve civil or criminal process within the limits of the aforesaid park in suits or prosecution for or on account of rights acquired, obligations incurred, or crimes committed in said State but outside of said park, and saving further to the said State the right to tax persons and corporations, their franchises and property, on the lands included in said park. All the laws applicable to places under the sole and exclusive jurisdiction of the United States shall have force and effect in said park. All fugitives from justice taking refuge in said park shall be subject to the same laws as refugees from justice found in the State of Washington. (U.S.C., title 16, sec. 95.)

Jurisdiction of Washington western district.

SEC. 2. That said park shall constitute a part of the United States judicial district for the western district of Washington, and the district court of the United States in and for said district shall have jurisdiction of all offenses committed within said boundaries. (U.S.C., title 16, sec. 96.)

Punishment under Washington laws.

SEC. 3. That if any offense shall be committed in the Mount Rainier National Park, which offense is not prohibited or the punishment for which is not specifically provided for by any law of the United States, the offender shall be subject to the same punishment as the laws of the State of Washington in force at the time of the commission of the offense may provide for a like

offense in said State; and no subsequent repeal of any such law of the State of Washington shall affect any prosecution for said offense committed within said park. (U.S.C., title 16, sec. 97.)

SEC. 4. That all hunting or the killing, wounding, or capturing at any time of any wild bird or animal, except dangerous animals when it is necessary to prevent them from destroying human lives or inflicting personal injury, is prohibited within the limits of said park; nor shall any fish be taken out of the waters of the park in any other way than by hook and line, and then only at such seasons and in such times and manner as may be directed by the Secretary of the Interior. That the Secretary of the Interior shall make and publish such rules and regulations as he may deem necessary and proper for the management and care of the park and for the protection of the property therein, especially for the preservation from injury or spoliation of all timber, mineral deposits other than those legally located prior to the passage of the Act of May twenty-seventh, nineteen hundred and eight (Thirty-fifth Statutes, page three hundred and sixty-five), natural curiosities, or wonderful objects within said park, and for the protection of the animals and birds in the park from capture or destruction, and to prevent their being frightened or driven from the park; and he shall make rules and regulations governing the taking of fish from the streams or lakes in the park. Possession within said park of the dead bodies, or any part thereof, of any wild bird or animal shall be prima facie evidence that the person or persons having the same are guilty of violating this Act. Any person or persons, or stage or express company, or railway company, who knows or has reason to believe that they were taken or killed contrary to the provisions of this Act and who receives for transportation any of said animals, birds, or fish so killed, caught, or taken, or who shall violate any of the other provisions of this Act or any rule or regulation that may be promulgated by the Secretary of the Interior with reference to the management and care of the park or for the protection of the property therein, for the preservation from injury or spoliation of timber, mineral deposits other than those legally located prior to the passage of the Act of May twenty-seventh, nineteen hundred and eight (Thirty-fifth Statutes, page three hundred and sixty-five), natural curiosities, or wonderful objects within said park, or for the protection of the animals, birds, or fish in the park, or who shall within said park commit any damage, injury, or spoliation to or upon any building, fence, hedge, gate, guidepost, tree, wood, underwood, timber, garden, crops, vegetables, plants, land, springs, mineral deposits other than those legally located prior to the passage of the Act of May twenty-seventh, nineteen hundred and eight (Thirty-fifth Stat-

Hunting, fishing,
etc., prohibited.

Regulations, etc.

Vol. 35, p. 365.
See p. 107.

Evidence of
violations.

Punishment for
violations.

Vol. 35, p. 365.
See p. 107.

utes, page three hundred and sixty-five), natural curiosities, or other matter or thing growing or being thereon or situated therein, shall be deemed guilty of a misdemeanor and shall be subject to a fine of not more than \$500 or imprisonment not exceeding six months, or both, and be adjudged to pay all costs of the proceedings. (U.S.C., title 16, sec. 98.)

Forfeiture of
guns, traps, etc.

SEC. 5. That all guns, traps, teams, horses, or means of transportation of every nature or description used by any person or persons within said park limits when engaged in killing, trapping, ensnaring, or capturing such wild beasts, birds, or animals shall be forfeited to the United States and may be seized by the officers in said park and held pending the prosecution of any person or persons arrested under charge of violating the provisions of this Act, and upon conviction under this Act of such person or persons using said guns, traps, teams, horses, or other means of transportation, such forfeiture shall be adjudicated as a penalty in addition to the other punishment provided in this Act. Such forfeited property shall be disposed of and accounted for by and under the authority of the Secretary of the Interior. (U.S.C., title 16, sec. 99.)

Commissioner.
Appointment,
authority, etc.

SEC. 6. That the United States District Court for the Western District of Washington shall appoint a commissioner who shall reside in the park and who shall have jurisdiction to hear and act upon all complaints made of any violations of law or of the rules and regulations made by the Secretary of the Interior for the government of the park and for the protection of the animals, birds, and fish, and objects of interest therein, and for other purposes authorized by this Act.

Judicial powers
in violations of
rules, etc

Such commissioner shall have power, upon sworn information, to issue process in the name of the United States for the arrest of any person charged with the commission of any misdemeanor, or charged with a violation of the rules and regulations, or with a violation of any of the provisions of this Act prescribed for the government of said park and for the protection of the animals, birds, and fish in said park, and to try the person so charged, and, if found guilty, to impose punishment and to adjudge the forfeiture prescribed.

Appeals.

In all cases of conviction an appeal shall lie from the judgment of said commissioner to the United States District Court for the Western District of Washington, and the United States district court in said district shall prescribe the rules of procedure and practice for said commissioner in the trial of cases and for appeal to said United States district court. (U.S.C., title 16, sec. 100.)

Procedure in
criminal cases.

SEC. 7. That any such commissioner shall also have power to issue process as hereinbefore provided for the arrest of any person charged with the commission within said boundaries of any criminal offense not covered by

the provisions of section four of this Act to hear the evidence introduced, and if he is of opinion that probable cause is shown for holding the person so charged for trial shall cause such person to be safely conveyed to a secure place of confinement within the jurisdiction of the United States District Court for the Western District of Washington, and certify a transcript of the record of his proceedings and the testimony in the case to said court, which court shall have jurisdiction of the case: *Provided*, That the said commissioner shall grant bail in all cases bailable under the laws of the United States or of said State. (U.S.C., title 16, sec. 101.)

Proviso.
Bail.

SEC. 8. That all process issued by the commissioner shall be directed to the marshal of the United States for the western district of Washington, but nothing herein contained shall be so construed as to prevent the arrest by any officer or employee of the Government or any person employed by the United States in the policing of said reservation within said boundaries without process of any person taken in the act of violating the law or this Act or the regulations prescribed by said Secretary as aforesaid. (U.S.C., title 16, sec. 102.)

Service of process.

SEC. 9. That the commissioner provided for in this Act shall be paid an annual salary of \$1,500, payable quarterly: *Provided*, That the said commissioner shall reside within the exterior boundaries of said Mount Rainer National Park, at a place to be designated by the court making such appointment: *And provided further*, That all fees, costs, and expenses collected by the commissioner shall be disposed of as provided in section eleven of this Act. (U.S.C., title 16, sec. 103.)

*Salary.**

Proviso.
Residence.

Disposal of fees.

SEC. 10. That all fees, costs, and expenses arising in cases under this Act and properly chargeable to the United States shall be certified, approved, and paid as are like fees, costs, and expenses in the courts of the United States. (U.S.C., title 16, sec. 105.)

United States fees, etc.

SEC. 11. That all fines and costs imposed and collected shall be deposited by said commissioner of the United States, or the marshal of the United States collecting the same, with the clerk of the United States District Court for the Western District of Washington. (U.S.C., title 16, sec. 104.)

Deposit of fines and costs.

SEC. 12. That the Secretary of the Interior shall notify, in writing, the governor of the State of Washington of the passage and approval of this Act.

Acceptance of cession.

Excerpt from "An Act Making appropriations for sundry civil expenses of the Government for the fiscal year ending June 30, 1909, and for other purposes," approved May 27, 1908 (35 Stat. 365)¹

The location of mining claims under the mineral land laws of the United States is prohibited within the area

Mount Rainier National Park, Wash.

¹ Salary of United States commissioner amended by current Appropriation Acts.

² Amends section 5, 30 Stat. 993. See p. 103.

Mining locations prohibited.
Proviso.
 Prior rights not affected.

of the Mount Rainier National Park, in the State of Washington: *Provided, however,* That this provision shall not affect existing rights heretofore acquired in good faith under the mineral land laws of the United States to any mining location or locations in said Mount Rainier National Park. (U.S.C., title 16, sec. 94.)

Mount Rainier National Park.
 Acceptance of donated lands, etc.
 (Repealed by 46 Stat. 1028, but subject matter covered by U.S.C., title 16, sec. 6, 41 Stat. 917. See p. 13.)

Excerpt from "An Act Making appropriations for sundry civil expenses of the Government for the fiscal year ending June 30, 1918, and for other purposes," approved June 12, 1917 (40 Stat. 152)

The Secretary of the Interior is authorized to accept patented lands or rights of way over patented lands in the Mount Rainier National Park that may be donated for park purposes. (U.S.C., title 16, sec. 106.)

An Act To revise the boundary of the Mount Rainier National Park in the State of Washington, and for other purposes, approved May 28, 1926 (44 Stat. 668)

Mount Rainier National Park, Wash.
 Boundary modified.
 Description.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the boundary of the Mount Rainier National Park is hereby changed so as to read as follows: Beginning at park boundary monument numbered 1, established on the east line of section 4, township 17 north, range 7 east, Willamette meridian, by a survey of the boundaries of Mount Rainier National Park, Washington, by the General Land Office, plat dated April 17, 1909; thence southerly along the present west park boundary line as established by said survey, being the midtownship line of range 7 east, to its intersection with the south bank of Nisqually River; thence easterly along said bank to its intersection with the present south park boundary line at a point east of park boundary monument numbered 28, as established by said survey, being the township line between townships 14 and 15 north; thence easterly along said south park boundary line to the southeast corner of the present park boundary; thence northerly along the present east park boundary line to park boundary monument numbered 59 as established by said survey, being the midtownship line of range 10 east; thence due north to the south bank of White River; thence northeasterly along said bank to a point due east of park boundary monument numbered 67; thence due west to said monument numbered 67; thence westerly along the present north park boundary line, as established by said survey, being the township line between townships 17 and 18 north, to its intersection with the north bank of Carbon River; thence westerly along said bank to a point due north of park boundary monument numbered 1; thence due south to place of beginning; and all of those lands lying within the boundary above described are hereby included in and made a part of the Mount Rainier National Park; and all of those

lands of the present Mount Rainier National Park excluded from the park are hereby included in and made a part of the Rainier National Forest, subject to all national forest laws and regulations. (U.S.C., 6th supp., title 16, sec. 107.)

Excluded lands added to Rainier National Forest.

SEC. 2. That the provisions of the Act of March 2, 1899, entitled, "An Act to set aside a portion of certain lands in the State of Washington, now known as the Pacific Forest Reserve," as a public park, to be known as the 'Mount Rainier National Park,' the Act of June 10, 1916, entitled "An Act to accept the cession by the State of Washington of exclusive jurisdiction over the lands embraced within the Mount Rainier National Park, and for other purposes," the Act of August 25, 1916, entitled "An Act to establish a national park service, and for other purposes," and all Acts supplementary to and amendatory of said Acts are made applicable to and extended over the lands hereby added to the park: *Provided*, That the provisions of the Act of June 10, 1920, entitled "An Act to create a Federal power commission; to provide for the improvement of navigation; the development of water power; the use of the public lands in relation thereto; and to repeal section 18 of the River and Harbor Appropriation Act, approved August 8, 1917, and for other purposes," shall not apply to or extend over such lands. (U.S.C., 6th supp., title 16, sec. 108.)

Laws extended to. Vol. 30, p. 993. Sec p. 101.

Vol. 39, p. 243. Sec p. 104.

Vol. 39, p. 535. Sec p. 9.

Proviso.

Federal Power Act not applicable. Vol. 41, p. 1063.

Excerpt from "An Act To provide for uniform administration of the national parks by the United States Department of the Interior, and for other purposes," approved January 26, 1931 (46 Stat. 1044)

The provisions of the Act of March 2, 1899 (30 Stat. 993), granting rights of way, under such restrictions and regulations as the Secretary of the Interior may establish, to any railway or tramway company or companies for the purpose of building, constructing, and operating a railway, constructing and operating a railway or tramway line or lines, so far as the same relate to lands within the Mount Rainier National Park, Washington, are hereby repealed: *Provided, however*, That nothing herein shall be construed so as to prohibit the Secretary of the Interior from authorizing the use of land in said park under contract, permit, lease, or otherwise, for the establishment and operation thereon of a tramway or cable line, or lines, for the accommodation or convenience of visitors and others. (U.S.C., 6th supp., title 16, sec. 92a.)

Grants of rights of way, repealed. Within Mount Rainier, Wash. Vol. 30, p. 993, repealed. See p. 101.

Proviso. Exception.

An Act To extend the south and east boundaries of the Mount Rainier National Park, in the State of Washington, and for other purposes, approved January 31, 1931 (46 Stat. 1047)

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the tract of land within the following-described boundaries be, and the same is hereby, excluded

Mount Rainier National Park, Wash. Lands added to.

from the Rainier National Forest and is hereby added to and made a part of the Mount Rainier National Park, in the State of Washington:

Description.

Beginning at a point on the present east boundary of Mount Rainier National Park one and one quarter miles southerly from the northeast corner of the said park as fixed by the Act of May 28, 1926 (44 Stat. 668); thence extending east to the summit of the hydrographic divide between Silver Creek and White River; thence along the summit of Crystal Mountain to the summit of the Cascade Mountains; thence southerly along the summit of the Cascade Mountains to a point in section 20, township 15 north, range 11 east, Willamette meridian, whence flow the waters of Bumping River to the east and Carlton and Cougar Creeks to the south and west; thence southwesterly along the summit of the divide between Carlton Creek and the waters flowing into the main fork of Ohanapecosh River to the quarter section line of section 9, township 14 north, range 10 east, Willamette meridian; thence westerly along the quarter section line of sections 9, 8, and 7 to the west boundary of said township; thence due west to the right or west bank of Muddy Fork of the Cowlitz River; thence northerly along the right bank of said Muddy Fork to a point exactly due east of post numbered 34 on the south boundary of Mount Rainier National Park as surveyed in 1908; thence due west to said post numbered 34; thence along the boundary of said park as surveyed in 1908 to post numbered 35; thence easterly along the south boundary of said national park as surveyed in 1908 to the southeast corner thereof; thence northerly along the east boundary of said national park as surveyed in 1908 to post numbered 59; thence along the east boundary of said park as revised by the Act of May 28, 1928, supra, northerly to the point of beginning. (U.S.C., 6th supp., title 16, sec. 109.)

Regulations applicable to additions.

SEC. 2. All laws applicable to and in force within the Mount Rainier National Park as of the date hereof, and all regulations issued pursuant thereto, are hereby made applicable to and extended over the land added to the said park by this Act: *Provided*, That no fee or charge shall be made by the United States for the use of any roads in said park built or maintained exclusively by the State of Washington. (U.S.C., 6th supp., title 16, sec. 110.)

Provided.
Free roadways.

17. Mount Rainier National Park

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Secretary of the Interior authorized to acquire the property and facilities of the Rainier National Park Company-----Act of September 21, 1950	151
Secretary of the Interior authorized to provide a headquarters site for park in general vicinity of Ashford, Washington-----Act of June 27, 1960	151

An Act Authorizing the Secretary of the Interior to acquire on behalf of the United States Government all property and facilities of the Rainier National Park Company, approved September 21, 1950 (64 Stat. 895)

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of the Interior is hereby authorized, in his discretion and under such terms and conditions as he may deem proper, to acquire on behalf of the United States, at a price considered by him to be reasonable, all of the property and facilities of the Rainier National Park Company within the Mount Rainier National Park used for the purpose of furnishing accommodations and conveniences to the public visiting said park, excluding, however, such facilities of the company as are used in furnishing transportation for the said park.

Rainier
National Park
Company.
Acquisition of
property by
Interior
Department.

SEC. 2. There is hereby authorized to be appropriated, out of any money in the Treasury not otherwise appropriated, such sum or sums as may be necessary to carry out the provisions of this Act.

Appropriation
authorized.

An Act To authorize the Secretary of the Interior to provide a headquarters site for Mount Rainier National Park in the general vicinity of Ashford, Washington, and for other purposes, approved June 27, 1960 (74 Stat. 219)

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That, in order to apply the present headquarters site in Mount Rainier National Park to public use for which it is more suitable and to provide a headquarters for the park, the Secretary of the Interior is authorized to provide a park headquarters in the general vicinity of Ashford, Washington, and for such purpose to acquire in this vicinity, by such means as he may deem to be in the public interest, not more than three hundred acres of land, or interest therein. (16 U.S.C. § 110a [Supp. II].)

Mount Rainier
National Park.
Headquarters
site.

SEC. 2. The headquarters site provided pursuant to this Act shall constitute a part of Mount Rainier National Park and be administered in accordance with the laws applicable thereto. (16 U.S.C. § 110b [Supp. II].)

APPENDIX E: GEOLOGICAL INFORMATION*

APPLICATION OF QUATERNARY STUDIES TO VOLCANIC-HAZARDS APPRAISALS IN THE CASCADE RANGE, WESTERN UNITED STATES

Crandell, Dwight R., U.S. Geological Survey, Denver, Colorado 80225

During the last 12,000 years there has been an average of at least one volcanic eruption in the Cascade Range per 75-100 years. Most eruptions have been on a relatively modest scale, but others have devastated the adjacent region. At least 5 volcanoes have been active within the last 150 years, but none has erupted often enough to establish a behavior pattern. Patterns are revealed, however, by studies of rocks and unconsolidated deposits that record events of the last 10,000-15,000 years; such a stratigraphic record generally is more complete adjacent to the volcano than on the cone itself. Stratigraphic relations reveal the sequence of events, geologic mapping shows extent of areas affected by volcanism, and relative and absolute dating indicates time and frequency of volcanism. Potential volcanic hazards can be forecast from such a study by assuming that future volcanism will be generally of the same type and scale. Studies in Washington, for example, have shown that lahars along valley floors are the most serious potential hazard from Mount Rainier. Potential hazards from Mount St. Helens include lahars, floods, and pyroclastic flows along valley floors and fall of tephra downwind from the volcano. The number of volcanic episodes recognized within the last 12,000 years includes three in the Lassen Peak-Chaos Crags area in northern California, 11 at Mount Rainier, and more than 30 at Mount St. Helens. This approach does not allow for an extraordinary volcanic event, whose remote possibility does not seem to warrant the excessive cost and drastic changes in land use that would be required to plan for it. It seems wiser to plan for the kinds of events which have occurred often in the recent past and should be expected in the future.

* Abstract of paper presented at the Annual Meetings of the Geological Society of America and Associated Societies, Dallas, Texas, November 1973.

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APPENDIX G: THE PLANNING TEAM

This plan was prepared during periods of time over the last three years and uses the ideas and results of studies made by many. Those most influential in the formulation of this plan, and periods of involvement, include:

- John F. Byrne, Civil Engineer
Denver Service Center, Team Captain, 1972
- Robert D. Chamberland, Landscape Architect
Denver Service Center, 1972
- Bonnie M. Campbell, Sociologist
Denver Service Center, 1972
- Lynn R. Wightman, Park Ranger
Denver Service Center, 1971-1972
- Philip S. Romigh, Architect
Denver Service Center, 1971
- Ronald H. Treabess, Landscape Architect
Western Regional Office, 1971
- Daniel J. Tobin, Jr., Superintendent
Mount Rainier, 1972
- John A. Townsley, Superintendent
Mount Rainier, 1971-1972
- James S. Rouse, Wilderness Coordinator
Pacific Northwest Regional Office, 1972-1974

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