

# Autumn at Mount Rainier

**W**inds blow cooler now, and twilight comes earlier. The sky is a deep lustrous blue. The sun has moved southward and the seasons are changing. During autumn, elk bugle while other animals and plants busily prepare for the coming winter. Small animals store the last of the seeds and nuts, and pack on layers of fat. They will need the fat to survive the winter deep beneath the many feet of snow that will blanket the meadows of Paradise and Sunrise. Migrating birds will launch their travel plans to spend winter in a warmer place, hundreds of miles to the south. Plants will complete the process of preparing for winter by releasing seeds for the next generation of flowers and trees.

Although summer officially gives way to autumn during the autumnal equinox on September 22, for most of us it begins when we see green leaves changing to shades of red, yellow, orange, bronze, purple or brown. In the forests that surround Mount Rainier, a variety of trees and shrubs produce beautiful fall colors, brightening hillsides and river valleys with dazzling intensity.

Predicting exactly where and when fall color will begin to peak is difficult since there are both internal and external factors to consider. Some trees and shrubs, such as cottonwoods, simply produce more yellow pigment (carotenoid) in their leaves, while others such as blueberries produce more brown pigment (tannin), and still others such as vine maples produce more red pigment (anthocyanin). Pigmentation differences are examples of internal factors that influence the colors leaves turn during autumn. When nights begin to lengthen in September, the production of

chlorophyll (the dominant green pigment related to photosynthesis) diminishes and eventually ceases. The cessation of chlorophyll production allows the other pigments in leaves to appear.

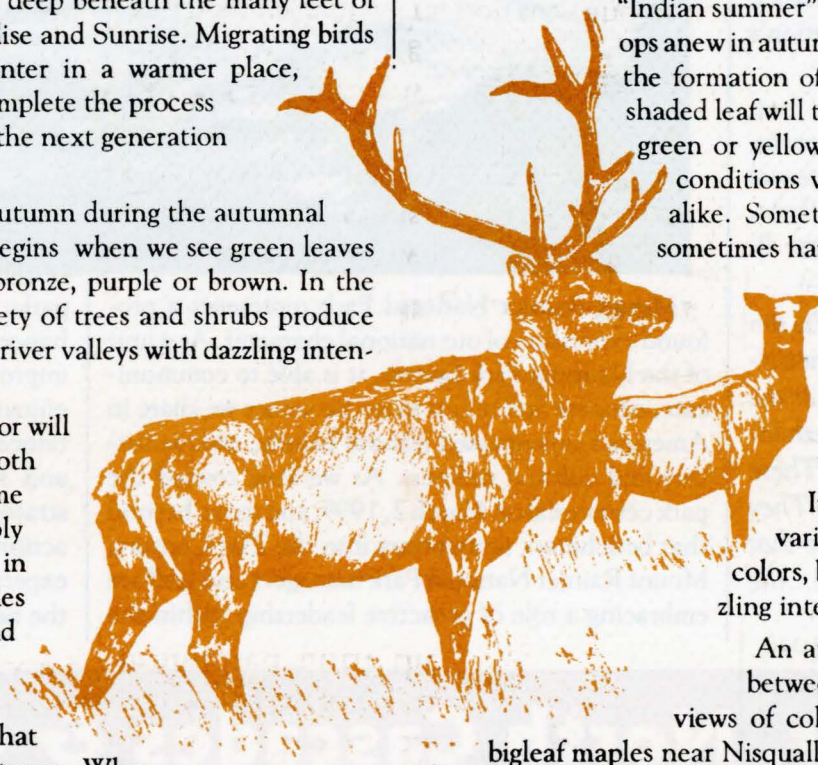
Weather and soil moisture are external factors which affect the leaves' color-producing pigments. For example, the cool nights and warm days typical of an "Indian summer" favor production of anthocyanin, which develops anew in autumn leaves. Direct sunlight sometimes stimulates the formation of this red pigment so powerfully that a partly shaded leaf will turn bright red on its sunlit portions but remain green or yellow on its shaded parts. Since weather and soil conditions vary year to year, no two autumns are exactly alike. Sometimes fall colors come early, sometimes late, sometimes hardly at all.

When the days of autumn shorten sufficiently, a chemical change takes place in the cells at the base of each leaf stalk where it joins the twig. The substance binding cells breaks down and the leaf eventually falls to the ground or is carried off on a gust of wind.

In the forests that surround Mount Rainier, a variety of trees and shrubs produce beautiful fall colors, brightening hillsides and river valleys with dazzling intensity.

An autumn drive along the Stevens Canyon Road between Ohanapecosh and Paradise offers excellent views of colorful vine maple - covered slopes. Look for

bigleaf maples near Nisqually, Ohanapecosh and Carbon River entrances. Sitka mountain-ash and blueberry bushes provide color to the meadows around Paradise, Tipsoo Lake and Chinook Pass.



## As Seasons Change - Keep In Mind

### Protect Natural Resources

- Collecting ferns and other plant materials, such as beargrass, is prohibited.
- Collecting fungi (including mushrooms) is restricted. Contact a park ranger for details. **Commercial collecting is prohibited.**
- Collecting of berries for personal consumption is allowed in very small quantities (one liter per day). **Commercial collecting is prohibited.**
- Mount Rainier is famous for its **wildflowers -- do not pick them.** Leave them for everyone to enjoy.

- Natural features (such as rocks or pine cones) are to be left where they are, for future generations to enjoy.

### Skiers, Snowboarders and Sliders

Early season skiers and snowboarders should ski/shred in areas where they don't cause damage to vegetation. Snow sliding is prohibited until the



constructed runs at Paradise open - usually in early December.

### Early Winter Campers

Snow campers must wait until two feet of snow covers vegetation (five feet at Paradise) before they set up camp. Contact a park ranger for winter camping details. See pages 3 & 5 for how to obtain your permit.

### Hunting Is Prohibited

Hunting of any kind is **NOT** allowed in the park. Firearms may be transported through the park in vehicles, but must be unloaded, broken down and cased. Weapons are prohibited in the backcountry.

## Changing Weather Conditions - Road Closures

**R**apidly changing weather conditions require hikers, climbers and drivers to be prepared for early closures, and/or slippery trails and icy roadways.

### Hikers, Backpackers & Climbers

Sudden, severe storms punctuate the transition from fall to early winter. Backpackers and climbers must be prepared to survive winter conditions in any season. Besides intermittent winter storms, the upper mountain is icier and more heavily crevassed, making it difficult to climb as well as more hazardous.

### Winter Driving Conditions

The arrival of snow on mountain roads heralds a warning to drivers: watch for reduced traction, uncertain braking and poor visibility. Traction tires and/or tire chains may be required at any time.



### Road Closures

- Highways 410 and 123 over Cayuse and Chinook passes, the Stevens Canyon Road and the Paradise Valley Road will close for the season at the first heavy snowfall.

- The road between Longmire and Paradise will close nightly after mid-October when weather conditions dictate, reopening each morning when the roadway is safe for travel.
- The Sunrise and White River Road will remain open daily as weather permits. As of September 11, the gate at the junction with the White River Campground Road will be locked nightly, re-opening each morning as conditions permit. Check with staff before leaving your vehicle at Sunrise overnight. The entire White River Road from Highway 410 will close for the season on October 16, or earlier as conditions dictate.



# Your National Park

**M**ount Rainier is the highest mountain in Washington and boasts the largest glacial system in the 48 contiguous states. On its slopes are spectacular meadows of subalpine flowers and a skirt of old-growth douglas-fir forest found in few other places. Mount Rainier is the majestic center of our nation's fifth oldest national park.

National parks are fundamentally different from other recreation areas including city and state parks, WA Dept. Of Natural Resources lands, or national forests. In his book, *Battling for the National Parks*, former National Park Service Director George B. Hartzog, Jr. wrote that national parks provide...

*"...a sense of place in which to discover 'Who am I?'; a place that is as constant as love, as never-changing as the cycle of the seasons, as joyous as the shriek of a child on Christmas morning, as exhilarating and re-creating as freedom itself...These parklands are more than physical resources. They are the delicate strands of nature and culture that bond generation to generation. They are...the benchmarks of our heritage..."*



Mount Rainier National Park represents a profound expression of our national character. As a unit of the National Park System, it is able to communicate, educate and renew in us the values we share in America's unsurpassed natural beauty, unique history and cultural richness. As we look toward the park centennial on March 2, 1999, and move beyond that benchmark anniversary into the 21st Century, Mount Rainier National Park managers and staff are embracing a role of proactive leadership within the

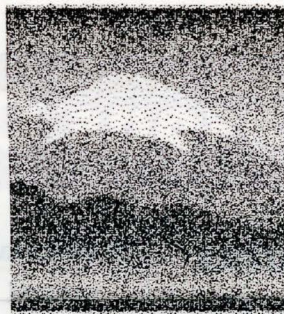
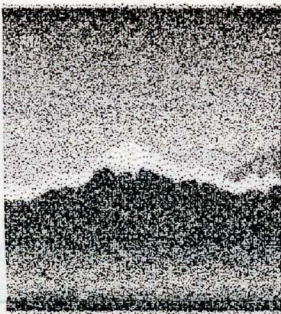
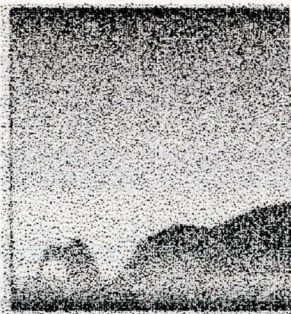
park. Strategic plans have been developed to enhance protection and stewardship of park resources, improve access for a diverse public, increase user enjoyment through education, and develop sustained and integrated programs of natural, cultural and social science resource management. These strategic management plans are now being put into action. Building on over 90 years of park history and experience, we are ready to meet the challenges of the next millennium.

## Mount Rainier, North Cascades & Olympic Fund

**A**lmost a century ago, citizens nationwide recognized the spectacular beauty of the Puget Sound region, and later established Mount Rainier, North Cascades and Olympic National Parks. The goal was to permanently protect these extraordinary lands and their world-renowned ecosystems.

Today, these precious parks are in jeopardy. In just the past five years, park attendance has increased dramatically. In 1995 alone, more than five million people will visit the three parks.

At the same time, federal allocations to the parks have failed to keep pace with inflation. If the magnificence and diversity of Mount Rainier, North Cascades and Olympic National Parks are to endure, we must aggressively work for their restoration and protection today.



The Mount Rainier, North Cascades & Olympic Fund is a private, independent, not-for-profit organization established to support and enhance these three national parks. The fund works with individuals like you - as well as businesses, foundations and allied organizations - to undertake specific projects to improve the parks.

Your participation will make a difference. Please join the Mount Rainier, North Cascades & Olympic Fund today.

For detailed information about how you can help, contact: Kim M. Evans, Executive Director, The Mount Rainier, North Cascades & Olympic Fund, 1221 Second Ave., Suite 350, Seattle, WA, 98101, or call (206) 621-6565. Look for donation boxes and envelopes at all park visitor centers and at the National Park Inn.

## Northwest Interpretive Association

**B**ooks and maps are available for sale at all park visitor centers as well as the Hiker Information Centers and Longmire Museum. The selection includes handbooks that will prove valuable in your outdoor explorations, books about park history and climbing, and maps that will enhance your enjoyment of the park from road and trail.

These outlets are operated by the Mount Rainier Branch of the Northwest Interpretive Association, a



non-profit organization benefitting naturalist programs in the national parks and forests of the Pacific Northwest. This "Tahoma" newspaper is an example of these benefits. We invite you to become a member of the association. For a catalog of publications and to learn about the advantages of membership, inquire at any visitor center; or write to the Northwest Interpretive Association, 909 First Avenue, Suite 630, Seattle, WA, 98104-1060; or phone (206) 220-4140.

## Volunteers

**I**f you would like to make a contribution to assure that your national parks will continue to be enjoyed by future generations, then consider becoming a VIP (Volunteer In the Park) for the National Park Service.

To receive more information on becoming a volunteer at Mount Rainier National Park contact a park ranger at any visitor center or ranger station; or write: Clay & Dixie Gatchel, Lead VIP Coordinators, P.O. Box 1344, Renton, WA 98057-1344.

## Accessibility at Mount Rainier

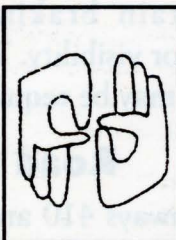


Most **COMFORT STATIONS** and **BUILDINGS** are accessible or accessible with assistance.

Accessible **OVERNIGHT ACCOMMODATIONS** are available at the Longmire National Park Inn and the Paradise Inn. Phone (360) 569-2275 for reservations.

**PICNIC AREAS** and **CAMPGROUNDS** (except Sunshine Point) in the park have accessible sites and toilets.

The first half of the Trail of the Shadows, around Longmire Meadow, is **WHEELCHAIR ACCESSIBLE** to the Longmire cabin on a compacted dirt trail. A short, **ACCESSIBLE BOARDWALK** at Kautz Creek leads to an overlook of the 1947 debris flow and a view of the mountain.



**WRITTEN INFORMATION** and **EXHIBITS** are available at Longmire Museum and Hiker Information Center, Henry M. Jackson Memorial Visitor Center at Paradise, Ohanapecosh Visitor Center and the White River Hiker Information Center. **Ask for LARGE PRINT SCRIPTS** of audio/visual programs presented at the Jackson Visitor Center at Paradise and Ohanapecosh Visitor Center.

For TDD service, phone (360) 569-2177.

For more information or assistance, contact a park ranger at any visitor center or phone (360) 569-2211.



# Facilities & Services

## Visitor Centers

**LONGMIRE MUSEUM:** 9AM - 5PM~daily, through September 24 ♦ then 9AM-4:15PM~Monday-Friday, 9AM - 5PM~ Saturday and Sunday, through winter.

**PARADISE:** Henry M. Jackson Memorial Visitor Center: 9AM - 7PM~daily, through September 24 ♦ then 9:30 AM - 6PM~daily, September 25- October 9 ♦ then 10AM - 5PM~Saturday, Sunday and holidays, October 14, through winter.

**OHANAPECOSH VISITOR CENTER:** 9AM - 5PM~ Monday -Thursday ♦ 9AM-6PM ~Friday - Sunday through October 1 ♦ then 9AM-5PM~Friday, Saturday, Sunday and holiday through October 15.

**SUNRISE VISITOR CENTER:** Closed for the season.

**CARBON RIVER ENTRANCE STATION:** Issues backcountry permits. Closes November 13.

## Hiker Information Centers (Permits)

**LONGMIRE:** 8AM - 4:30PM~Sunday - Friday, 7:30AM - 6PM~Saturday through September 30. Permits available for overnight trips. The Center is located in the lobby of the large log and stone building behind the flagpole. Obtain permits at Longmire Museum beginning October 1.

**WHITE RIVER:** 8AM - 4:30PM~daily through September 29, when it closes for the season. Obtain permits for overnight trips and hiking information in the ranger station at the White River Entrance.

## Food & Lodging

**LONGMIRE NATIONAL PARK INN:** Lodging desk 7AM - 10PM~daily. Dining room hours 7AM - 7PM~ Sunday-Thursday, 7AM - 8PM~Friday, Saturday and holidays. For reservations call: Mount Rainier Guest Services at (360) 569-2275.

**LONGMIRE GENERAL STORE:** Open 10AM - 5PM~daily. Longer hours when ski touring equipment is available here in December. Located on west side of the National Park Inn.

**PARADISE:** Jackson Grill in the Henry M. Jackson Memorial Visitor Center: Open 10AM - 6PM~daily, September 11 - October 9 ♦ then 11AM - 4:45PM~Saturday, Sunday and holidays, October 14, through winter.

**PARADISE INN:** Lodging & Restaurant: Hotel front desk open 24 hours, daily through October 1. Dining room open for breakfast 7AM - 9AM through October 2, for lunch 12noon - 2PM through October 1, for dinner 5:30PM - 8PM through October 1 ♦ Sunday Brunch: 11AM - 2:30PM, through September 24 ♦ Glacier Lounge open 12noon - 11PM~daily through October 1 ♦ Snack Bar open 9AM - 6PM~daily through September 24 ♦ Gift Shop (in lobby) 8AM-8PM~daily through October 1. For reservations call Mount Rainier Guest Services (360) 569-2275. The Paradise Inn closes for the season after serving breakfast on October 2.

**SUNRISE LODGE:** Closed for the season.

## Showers

**PARADISE:** Henry M. Jackson Memorial Visitor Center: Lower level. Available 10AM - 6PM~daily through October 9 ♦ then 11AM - 4:45PM~Saturday, Sunday and holidays, October 14 through winter.

## Gasoline

Gasoline is NOT AVAILABLE in the park. Service stations are located in the nearby communities of Ashford, Elbe, Packwood, Greenwater and American River. Be prepared -check your gauge.

## Firewood

**COUGAR ROCK CAMPGROUND:** 4PM - 9PM~Friday, Saturday and Sunday only, September 5-17.

**LONGMIRE GENERAL STORE:** 10AM - 5PM~daily, September 5-17.

**OHANAPECOSH CAMPGROUND:** Friday and Saturday evenings only, through October 14.

## Campgrounds

**SUNSHINE POINT:** Open year round. 18 sites. Located 6 miles west of Longmire and .25 mile east of the Nisqually Entrance. Site fee is \$6 per night on a first-come, first-served basis. No group sites available.

**COUGAR ROCK:** 200 campsites for tents and trailers, 5 group sites. Located 2.5 miles from Longmire on the Paradise Road. Site fee is \$8 per night on a first-come, first-served basis. Only group sites can be reserved and cost \$3 per night, per person. Cougar Rock Campground closes October 17 or earlier as conditions dictate.

**OHANAPECOSH:** 205 sites, no group sites. Site fee is \$10 per night on a first-come, first-served basis. The Ohanapecosh Campground closes October 17.

**WHITE RIVER:** 117 sites, no group sites. Site fee is \$8 per night; on a first-come, first-served basis. Campground closes September 26, or earlier as conditions dictate.

**IPSUT CREEK:** 29 sites, 2 group sites. Located at the end of the Carbon River Road. Site fee is \$6 per night, on a first-come, first-served basis. Group sites can be reserved for \$3 per person per night. Closes September 26.

## Picnic Areas

**SUNSHINE POINT:** Located 6 miles west of Longmire and .25 mile east of the Nisqually Entrance.

**COUGAR ROCK:** Located across the road from Cougar Rock Campground. The picnic area closes October 17 or earlier as conditions dictate.

**PARADISE:** Located .25 mile below the Jackson Visitor Center. Picnicking is NOT allowed on the fragile meadows at Paradise. Closes October 23 or earlier as conditions dictate.

**OHANAPECOSH:** Located across from the Ohanapecosh Visitor Center in Loop A of the Campground.

**TIPSOO LAKE:** Located near Chinook Pass on Highway 410, 17 miles north of Ohanapecosh, and 11 miles south of the White River Entrance arch. No water.

**BOX CANYON:** Located between Ohanapecosh & Paradise on Stevens Canyon Road. Closes September 26.

**CARBON RIVER:** Located at Falls Creek, 2 miles from the entrance, and in Ipsut Creek Campground. No water.

## Climbing

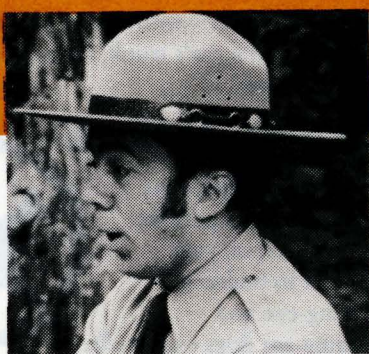
**THE GUIDE HOUSE AT PARADISE:** 9 AM - 5 PM~daily through September 30. Guided summit climbs, climbing instruction, and equipment rentals are available. For those not experienced on a glaciated peak, RMI offers a 3-day package: 1-day climbing seminars, combined with a 2-day summit climb. Last snow school September 21 and last summit climb September 22. For more information call (360) 569-2227, through September 30, then call (206) 627-6242.

**INDEPENDENT CLIMBERS:** Everyone climbing above 10,000 feet is required to pay a user fee of \$15/person/climb or a \$25/person/annual fee. Please see page 5 for more information on the mountaineering cost recovery program.

## Post Offices

**PARADISE:** Open 8:30AM - 5PM~Monday - Friday, 8:30AM - 12noon~Saturday. Closes October 1.

**LONGMIRE:** Open 8:30 AM - 5 PM~ Monday - Friday, 8:30 AM-12 noon~ Saturday.



## Walks

10 AM  
Saturday  
& Sunday  
through  
9/24

**Carter Falls:** 2 hours, 2 miles. Experience the lowland forest along the Paradise River enroute to Carter Falls. Meet at the bulletin board by the Ranger Station at Cougar Rock Campground.

10 AM  
Sunday  
through  
9/24

**Paradise Alta Vista:** 2 hours, 1.5 miles. Explore subalpine meadow life on this hike to a knoll overlooking Paradise. Meet at the Jackson Visitor Center Flagpole.

10 AM  
Saturday  
through  
9/16

**Silver Falls:** 2 hours, 2.5 miles. Explore the lowland forest enroute to this breathtaking waterfall. Meet at the Ohanapecosh Visitor Center flagpole.

10 AM  
Sunday  
through  
10/1

**Ancient Forest:** 1.5 hours, 1.5 miles. Enjoy a quiet walk along the Ohanapecosh River to the Grove of the Patriarchs. Meet at the Grove of the Patriarchs Trailhead on Stevens Canyon Road.

3 PM  
Saturday  
& Sunday  
through  
9/24

**Paradise Nisqually Vista:** 1.5 hours, 1.25 miles. Discover the geology and glaciers of Mount Rainier on this easy walk to an excellent view of the Nisqually Glacier. Meet at the Jackson Visitor Center flagpole.

## Evening Programs

8 PM  
Friday &  
Saturday  
through  
9/23

**Cougar Rock Campground Amphitheater:** 45 minutes. Enjoy Mount Rainier through a slide program presented each evening by a park naturalist. Program titles are posted on the campground bulletin board.

8 PM  
Friday &  
Saturday  
through  
9/30

**Ohanapecosh Campground Amphitheater:** 45 minutes. Explore Mount Rainier through a slide program presented by a park naturalist. Program titles are posted on area bulletin boards.

9 PM  
Friday &  
Saturday  
through  
9/23

**Paradise Inn Lobby:** 1 hour. Illustrated programs explore a variety of subjects on Mount Rainier. Titles are posted in the Jackson Visitor Center and the Paradise Inn.



# Stay On The Trail

It was the spectacular wildflower displays which color the meadows during summer that first prompted early settlers and explorers to visit Paradise in the late 1800s. Now, one hundred years later, the wildflower display is still spectacular. Summer visitation to the Paradise meadows has grown from a few hundred people into millions and a closer inspection of the area reveals bareground tracts where vegetation has been trampled and killed, where soils have been compacted and where erosion gullies scar the landscape.

Some of this damage is the result of activities that are no longer permitted at Paradise such as tent camping, horseback riding, golfing and downhill skiing. Unfortunately though, some meadow damage still occurs today. For instance, many people don't realize the impact they have on the meadows when walking off the constructed trails. Each and every off-trail step compacts soil and destroys delicate vegetation.

In 1986, Mount Rainier National Park initiated a large scale restoration program to document and repair human-caused damage in the Paradise meadows. Over the last several years all meadow damage has been documented and prioritized for restoration, a Paradise Meadow Resource Management Plan has



been completed, and a restoration program has been implemented.

Even though the National Park Service actively attempts to rehabilitate areas damaged by concentrated use and off-trail trampling of fragile vegeta-

tion, our ability to repair such damage is limited. To a tremendous extent, the meadows must repair themselves. They need protection from further damage and they need time to stabilize soil in eroded areas and restore plant diversity to the extent of that present in undisturbed areas.

For these reasons, the National Park Service requires all visitors hiking at Paradise, Sunrise and Tipsoo Lake to stay on constructed trails. Show support by staying on the trail. Let

others know about meadow protection by wearing a "Don't Be A Meadow Stomper" button. Buttons are available for a 50 cent donation in the Henry M. Jackson Memorial Visitor Center at Paradise.



## Meadow Alert

Every year, many of the 2+ million people who visit Mount Rainier hike the meadow trails. Imagine the problems created when one person, multiplied by a thousand, leaves the constructed trail. The best possible solution is for all of us to prevent damage from occurring by staying on the constructed trails.

## Hiking At Rainier

### Self-guiding Trails

**Longmire ♦ Historic District Tour:** 1 hour ~ 1.25 miles. Witness firsthand some of the park's most architecturally significant structures. Tour maps available at Longmire Museum.

**Longmire ♦ Trail of the Shadows:** 30 minutes ~ .7 mile. Experience the natural environment and see the former site of the Longmire Medical Springs Resort on this walk around Longmire meadow.

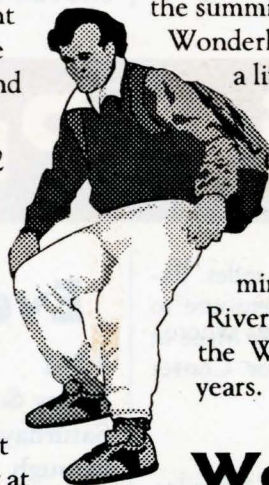
**Paradise ♦ Nisqually Vista:** 1 hour ~ 1.2 miles. Walk where the clouds go and see how weather shapes the landscape, plants, and animals of these high country meadows. Excellent views of Mount Rainier and the Nisqually Glacier may be enjoyed on this easy walk.

**Ohanapeosh ♦ Life Systems:** 30 minutes ~ .5 mile. Explore the forest and hot springs of Ohanapeosh on this walk. Start at the visitor center.

**Ohanapeosh ♦ Grove of the Patriarchs:** 1.5 hours ~ 2 miles. Walk among 1,000 year old tree giants of the old-growth forest. See these ancient trees on an island in the Ohanapeosh River.

**Sunrise ♦ Sourdough Ridge:** 1 hour ~ .5 mile. A moderate walk through flower fields rich in color to a panoramic viewpoint of four volcanic peaks.

**Carbon River ♦ Rain Forest:** 20 minutes ~ .3 mile. Rain forests seldom occur far from coastal areas, so the forest that grows in this valley is special. Explore the only true inland rain forest at Mount Rainier.



### Wonderland Trail

The 93-mile Wonderland Trail completely encircles Mount Rainier, passing through all the major life zones in the park, from lowland forests through subalpine meadows to views of glaciers. Hikers can find both company and solitude along the way. As the summit of Mount Rainier is to a climber, so the Wonderland Trail is to a hiker - the experience of a lifetime. You should allow about 10 days to 2 weeks to enjoy the trail. Camping along the trail is allowed only at designated campsites, by permit only. For more detailed information on hiking the Wonderland Trail, inquire at the Longmire Hiker Information Center or the White River Hiker Information Center. Snow covers the Wonderland Trail by late October, most years.

### Westside Road

You may drive 3 miles up the road to the parking area at Dry Creek. From there, travel into the scenic west side of the park is accomplished by hiking or bicycling. Bicycles must remain on the roadway and may not be taken on any trail. Hikers may explore the many miles of trail branching off the old roadway into the wilderness. Be sure to obtain your wilderness permit if planning to stay overnight. **Caution:** parts of the roadway and surrounding area are subject to sudden, unpredictable flooding. Use caution when hiking in this area; Tahoma Creek is now flowing down the middle of the roadway beyond Dry Creek.

### Hikers, Watch Your Step!

Tripping and falling are common accidents on park walkways and trails, especially in slippery and icy conditions.



Rock climbing and scrambling continue to be leading causes of injury and death to the unprepared and inexperienced. Routes are often more difficult than they appear and even a short fall can cause serious injury or death. Before you scramble or climb on Mount Rainier's rocks or glaciers, provide yourself with proper equipment and training.



Beware of rocks and debris falling on trails and rolling onto roadways. Refrain from throwing rocks over cliffs. Don't let gravity spoil your or someone else's vacation!



Stay back from streams and riverbanks and avoid "rock hopping." Rocks near the waters' edge can be dangerously slippery and have caused fatal accidents.

### Protect Your Valuables

Keep all valuables with you or lock everything of value in the car's trunk. Also, lock all doors and windows.

### No Pets on Trails

Please remember, that dogs and other pets are not allowed on park trails, or in buildings (seeing-eye and hearing-ear dogs excepted). Pets must be caged or on a leash.



### Bicycles

Bicycles are allowed only on roadways. They are prohibited on all trails.

### Hunting is Prohibited

Hunting of any kind is NOT allowed in the park. Firearms may be transported through the park in vehicles, but must be unloaded, broken down and cased. Weapons are prohibited in the backcountry.



# Camping & Climbing Permits

## Permits for Overnights & Climbing

If you are planning a backpacking trip, be sure to stop at the Hiker Center at Longmire. Located in the log and stone building beside the flagpole, the Center features a relief map of Mount Rainier and information on minimum impact camping.

Rangers on duty will be happy to answer your questions, assist with trip planning, and issue free backcountry permits. The main purpose of the permits is to control the number of people in one place



at one time and thereby limit the impact from litter, human waste, and trampling of the ground.

A second Hiker Information Center offering similar services is located at the White River Entrance Station. Carbon River Ranger Station issues permits and offers information on the northwest section of the Park.

White River Hiker Center closes 9/29 and the Longmire Hiker Center closes 9/30. Then Longmire Museum offers hiker information and permits, October 1 through winter.

Camping at all trailside camps as well as Camps Muir and Schurman is available on a first-come, first-served basis.

Anyone intending to go above the high camps at

Camp Muir or Camp Schurman, or to travel on the glaciers, must obtain a climbing card in lieu of a wilderness permit.

For additional information, write: Backcountry Desk, Mount Rainier National Park, Tahoma Woods, Star Route, Ashford, WA 98304, or call (360) 569-2211, extension 3317.



Camping is not allowed along any park road. Campgrounds are located at Sunshine Point, Cougar Rock, Ohanapecosh, White River and Ipsut Creek (see page 3).



Make fires only in a fire grill at the picnic areas and the campgrounds. Use a portable stove in the backcountry.

## Mountaineering Cost Recovery Program

On July 16 the park initiated a "Mountaineering Cost Recovery Program." This program requires climbers climbing above 10,000 feet or on glaciers to pay a "user fee." The fee is \$15/per-

son/climb or a \$25/person annual fee. These fees must be paid when climbers register for a climb.

The fees are used exclusively to support the mountaineering program at Mount Rainier National Park. The fees support:

**SAFETY AND EDUCATION**

**HUMAN WASTE REMOVAL**

**PROGRAM ADMINISTRATION**



Recreational climbs at high elevations have increased at a rate of about 3% annually for the last several years. The park's budget has not increased proportionately, causing park managers to take resources from other park programs to support the mountaineering program.

This cost recovery program will insure users a QUALITY "high elevation" climbing experience now and in years to come.

# Don't Feed The Wildlife

Seeing wild animals is an important part of a visit to Mount Rainier National Park. As national parks are preserved for their natural values and processes we ask that you observe but do not feed the wildlife. Both birds and mammals are affected in many ways by well-meant handouts. Birds are sensitive to the availability of food because they must eat about the equivalent of their body weight each day.

Small mammals such as chipmunks and golden-mantled ground squirrels all pass the winter hibernating. These animals require specific foods to fatten themselves for their long sleep. Our food does not supply the right fats and protein for these animals. Rodents do bite and may carry rabies and bubonic plague.

Bears quickly learn to associate people with food when offered handouts. Leaving food out or intentionally feeding bears can lead them to damaging tents and vehicles, and injuring people.

The animals in the park are wild and should remain that way. We must be content to observe and appreciate them, rather than trying to intrude in their natural lives.



## High Altitude Waste Hazards

In 1994, 9,220 climbers started out for the summit of Mount Rainier with 4,711 of them finally standing on the crater rim. Thousands more people day-hiked to Camp Muir at 10,000 feet elevation.

Probably every one of these people used toilets on the upper mountain. Human waste left on the glaciers and Muir Snowfield not only spoils the aesthetic climbing experience, but also poses a serious health hazard for climbers who melt snow for drinking water. Virtually none of this waste will decompose since extreme cold temperatures and strong sunlight combine to discourage microbial action. Putting waste in crevasses or burying it in the snow does not solve

the problem, but only leaves it for others. If you plan to hike to Camp Muir or climb higher on the mountain, check with rangers to be sure you know where pit toilets and "Glacier Toilets" are located and how to use blue bags for waste removal.

Upper mountain users also need to carry out all the trash they generate while climbing. Putting trash in toilets hinders toilet operation and makes removal of trash and waste much more expensive.

There is no ideal solution to the problem of human waste and trash removal from the upper mountain, but if everyone does their part we will be able to continue to offer the best possible climbing experience for all.



## Drink Treated Water Only

Please drink water only from treated, piped water systems. In the backcountry, boil your water or use an adequate filtration system.



## WILDERNESS

National parks have been called "the best idea America ever had." The idea of preserving special natural and cultural places in public ownership ran contrary to the prevailing national mood during the 19th century, when most Americans saw nature as something to be subdued and history as what happened in the Old World. But as the wilderness receded and remnants of ancient civilization and revolutionary landmarks were lost, some saw the need to protect outstanding examples of the nation's heritage.

When Mount Rainier and other early national parks were set aside as outstanding examples of our country's natural landscape they were mostly wilderness. The intent in establishing these parks was clear: to permanently preserve their natural features and

to provide for public use and enjoyment. Since that time it has become evident that the parks' wilderness was more vulnerable than early managers thought. Recreational demands, visitation patterns, and pollution have taken their toll in many areas.

To further protect these natural landscapes, on November 16, 1988, 228,400 acres (97%) of Mount Rainier National Park became the "Mount Rainier Wilderness." It is now one of 30 wilderness areas in the state of Washington. Excluded are Camps Schurman and Muir, portions of the water supplies, road systems and roadside developments.

The Mount Rainier Wilderness is managed by the National Park Service. Use of the area is governed according to the goals of the Wilderness Act of 1964. Management techniques include mandatory camp-

ing permits, minimum impact education, designated campsites, limits on party size and numbers of parties, and an impact monitoring and restoration program supported by a native plant nursery and a cadre of dedicated volunteers.

The National Park Service invites you to not only experience one of the world's most beautiful places, but also to

help care for this magnificent wilderness so that it will provide the same benefits to your children and grandchildren as those you enjoy. As you commune with your own natural reality at Mount Rainier, take the concept of Wilderness to heart.

For more information on the Mount Rainier Wilderness, contact the staff at any hiker information center, ranger station, or visitor center in the park.

*Looking for a few tips on your next hiking, backcountry, or climbing trip? Check out our new multi-media CD-ROM Wilderness Education program. This entertaining and interactive touch-screen program is located in the Longmire Hiker Center through September 30 and offers you an audio-visual wilderness planning experience. Take the wilderness challenge!*

## ANCIENT FORESTS

The forests surrounding the base of Mount Rainier become more valuable each year. Sixty percent of Mount Rainier National Park is covered by forest, much of it in the old-growth Douglas-fir community. This forest community is found on the west side of the Cascade Mountains in Washington, Oregon, and Northern California.

The term "old-growth Douglas-fir forest" identifies a stand of trees that is at least 250 years old. The lowland forest of Mount Rainier National Park contains some of the last "old-growth" in the Pacific Northwest. Here Douglas-fir, western hemlock and western redcedar are 500 to over 1,000 years in age. These trees were old when ships reached the North Pacific coast and wagon trains brought settlers into Puget Sound.

Over ten years of scientific study of the forests of Mount Rainier have identified forest community types, determined the age of the forest, and listed the plants and animals associated with the Douglas-firs. Scientists found differences in temperature, moisture and associated species between old-growth for-

ests in Northern Washington and Northern California.

Many visitors remark on the great size of the trees in the old-growth forest and then begin to note the relative abundance of seemingly dead material in the forest. This characteristic leads to the distinctive features of an old-growth forest: (1) large, live old-growth trees, (2) large standing dead trees (snags), (3) large logs on land, and (4) large logs in streams.

Large, old-growth Douglas-firs are ideal habitats for specialized vertebrates, such as the red tree vole, northern spotted owl and northern flying squirrel, as well as nitrogen-fixing lichens. Large snags provide valuable nesting sites and food sources for a variety of vertebrates and invertebrates and are a future source of logs.

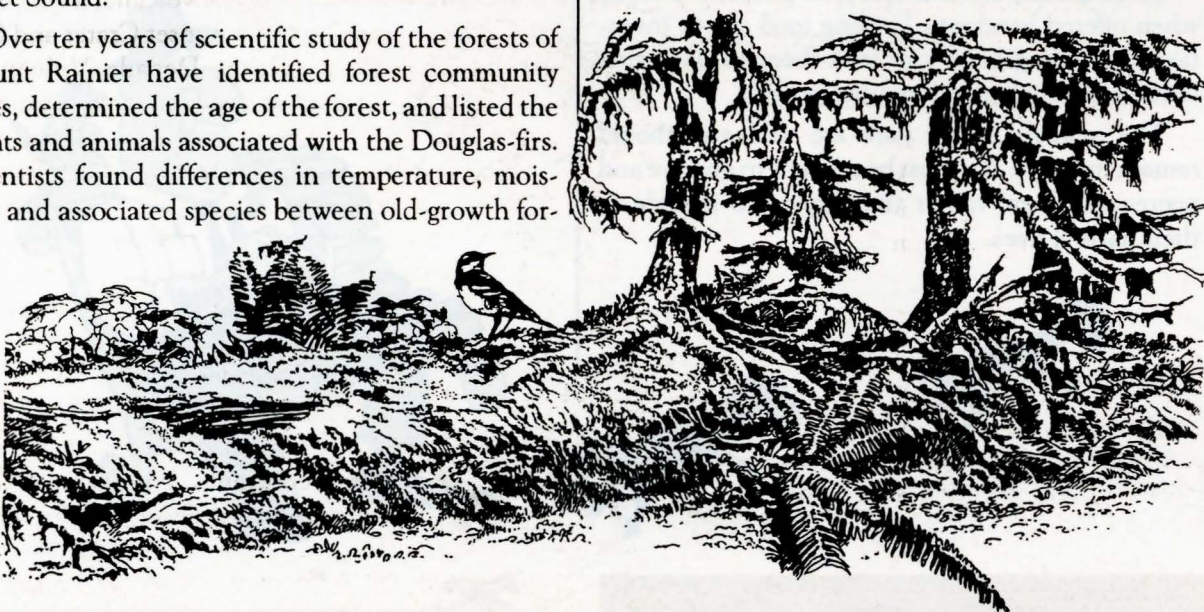
Logs on the forest floor are important habitats for small mammals, including the western red-backed vole and northern flying squirrel, that spread the

spores of mycorrhiza-forming fungi. Mycorrhize (root - fungus association) aid trees by gathering and transferring water and nutrients into the tree's roots. Logs also are sites for bacterial nitrogen fixation, water and nutrient storage, and provide seed beds for new generations of trees and shrubs. Logs are critical to maintenance of physical & biological stability in headwater streams as they provide a range of habitats for stream organisms.

As scientists began to study the forests they found the northern spotted owl most commonly in the older Douglas-fir forests. Some scientists suggest that the northern spotted owl lives only in old-growth forests, while others say that the owls can live in younger forests.

Most species found in the old-growth Douglas-fir forest are also found elsewhere but many species find optimum habitats in old-growth forests. The forest's value should be measured not only by what is found there, but also by the longevity of its forest ecosystem. The management of the old-growth Douglas-fir forest of the park is as important today as preserving the glaciers and snow capped peak of Mount Rainier.

There are many places in the park where you can experience the old-growth Douglas-fir forest. The Grove of the Patriarchs nature trail, near Ohanape-cosh, is an easy 1.5 mile round trip. Several places along the road between Nisqually Entrance and Longmire offer short walks into the old-growth forest. The Carbon River road in the northwest corner of the park provides a leisurely drive among the old-growth giants and the Carbon River Rainforest nature trail features the species that inhabit this special place. For more information on the forests of Mount Rainier National Park inquire at any park visitor center.



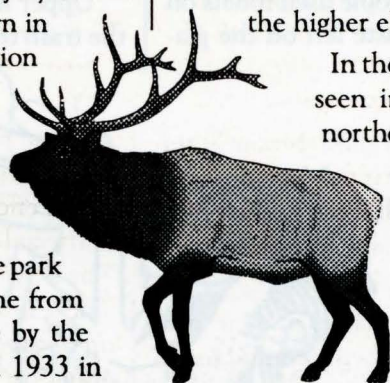
## ELK

Elk (*Cervis canadensis*) is the largest animal found in Mount Rainier National Park. Males are larger than females and can weigh up to 800 pounds (350 kg). Elk have coarse, tan colored fur with a contrasting dark mane and light tan colored rump with a short tail. Adult males have large antlers with several points which arise from the main branch of each antler. Yearling males usually have just spikes without any points. Females do not have antlers. Antlers are grown on a yearly cycle. Antlers start as bony outgrowths from the head of the animal in the late winter. The antlers grow throughout the summer and are covered in "velvet". At the end of the summer the mating season nears and the antlers harden. The velvet becomes loose and the males rub the antlers against trees to clean them. The hardened antlers are used to challenge other males during the rut. The antlers remain with the animals until early winter when they become loose at the base and fall off.

Old females are apparently the leaders of the summer herds which consist of mostly cows, calves and young bulls. The older bulls are not associated with the cow herds and remain by themselves during the summer. Mating occurs in the fall when the older bulls enter the cow herds and gather harems of females. In the fall the bulls advertise their presence with a "bugle", a loud musical call. The bulls fight over the harems which can result in injury or the death of the participants. Calves are born in the spring (usually June) after a gestation period of nine months. New calves are covered with white spots which disappear by the end of their first summer. Very early travelers to Mount Rainier did not record sighting elk within the park. The earliest recorded sighting in the park was made in 1903. Releases of elk, some from Yellowstone National Park, were made by the state of Washington between 1912 and 1933 in areas surrounding the park. The small herds of elk increased in numbers due to improved forage habitat outside the park because of timber harvest. The herds expanded their range to include Mount Rain-

ier National Park. The current elk population in the park is estimated to be about 1,500 animals. The elk population moves in and out of the park depending on the season. In the winter elk seek lower elevations where the snow pack is light enough to allow for foraging. As the snows melt in the spring, the elk herds reenter the park. They move progressively further up in elevation as the snow melts. The cycle is reversed in the autumn with the first snows fall in the higher elevations.

In the summer and early fall elk can be seen in many areas of the park. The northern section of the park, especially the Sunrise area, contains large numbers of elk. The area below Sunrise Point, near the Palisades, is a good area to view and hear elk "bugling" in the fall. The best times of day are at dawn and sunset. Hearing elk bugling in the subalpine meadows of Mount Rainier is an unforgettable experience and one of the highlights of an autumn visit to the park.





# VOLCANIC HAZARDS REQUIRE AWARENESS

A visit to Mount Rainier provides outstanding opportunities to observe evidence of past volcanic processes that are clues to geologic hazards of the future. During the past one million years Mount Rainier produced spectacular eruptions of lava, volcanic ash and hot ash flows that, by 6,000 years ago, had built a cone perhaps 16,000 feet in elevation. Lava flows filled its glacial valleys with hard, erosion-resistant rock that survives today as ridges radiating from the mountain like spokes on a wheel. Volcanic ash is visible amid the roots of meadow wildflowers as a colorful, granular, sandy soil. Hot ash flows seared the surface of the volcano and left thick deposits of heat-fused pumice. However, the extent to which these phenomena disturbed the landscape pales in comparison to the destructive effects of volcanic landslides.

During both eruptive and non-eruptive periods, giant landslides have transformed into debris flows that swept down river valleys radiating from the volcano. These destructive flows of churning boulders, rock debris, water and glacial ice buried everything in their path, including mature forests. Exposures of debris flow deposits and some buried forests are visible today in the valleys of the White, Puyallup and Nisqually Rivers.

Mount Rainier is susceptible to landslides because



(1) its layers of lava have been weakened by hot acid-rich ground water, (2) its cone stands 10,000 feet above the surrounding valleys, and (3) there are many new exposures of steep, unstable rock due to recent glacial recession.

The most recent large landslide on Mount Rainier occurred 500 years ago in the Puyallup River valley. Such events have a probability of happening on

average every 500 to 1,000 years - frequently enough to concern geologists and public officials about unrestricted growth and the placement of public structures in areas of potential inundation. Scientists at the U.S. Geological Survey are supplying land-use managers with information to help them reduce the risk from debris flows in the valleys around the base of the mountain.

## RAINIER: A Decade Volcano

Mount Rainier, which is the highest volcano in the Cascade Range, is designated as a Decade Volcano. This does not necessarily mean that the mountain will erupt soon, but rather that scientists will be watching the volcano very closely to help reduce the risk from geologic events when they do occur. In 1989, the International Association of Volcanology and Chemistry of the Earth's Interior established a task group for the International Decade for Natural Disaster Reduction. The task group selected Mount Rainier as one of several volcanoes for focused study during the 1990's.

Criteria for designating Mount Rainier for study include:

- ✓ the volcano represents a variety of hazards
- ✓ it exhibits recent geologic activity:
- ✓ it is located in a populated area:
- ✓ it is little researched:
- ✓ it is readily accessible and it is well exposed for study.

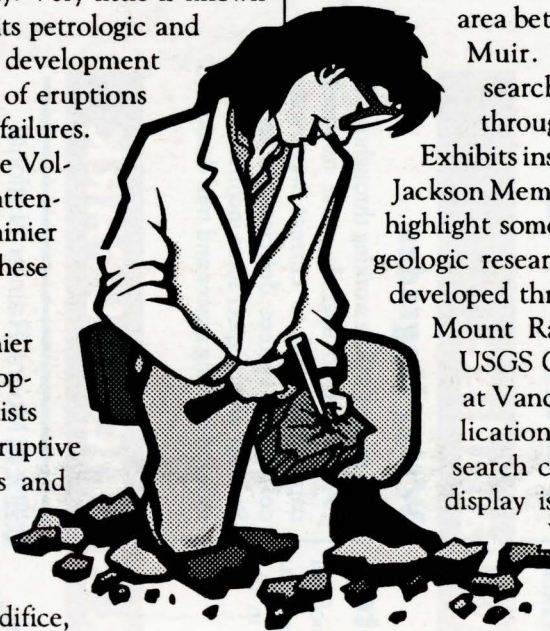
Mount Rainier is considered to be the most hazardous volcano in the Cascades in terms of its poten-

tial for magma-water interaction and sector collapse. Debris flows (in the absence of eruption), and even the potential for eruption, pose significant threats to the region.

In spite of the hazard it poses, Mount Rainier has received relatively little study. Very little is known of such important topics as its petrologic and geochemical character, its development over time, its recent history of eruptions and its susceptibility to major failures. With designation as a Decade Volcano, increased scientific attention is focusing on Mount Rainier to try to answer some of these questions.

The staff of Mount Rainier National Park is working cooperatively with USGS scientists on studies to determine the eruptive history, and eruptive styles and mechanisms for the volcano, as well as the chemical evolution of magma types, structure of the volcanic edifice,

and style and location of hydrothermal alteration of the volcano. One of the results of their work will be a revised geologic map of the volcano edifice. Tom Sisson and Dave Zimblemann are the principal investigators for the study. They are working on the south and west sectors of the volcano, mostly in the area between Sunset Crater and Camp Muir. Other Decade Volcano researchers will be here periodically throughout the next several years. Exhibits installed recently at the Henry M. Jackson Memorial Visitor Center at Paradise highlight some of the findings of this recent geologic research. These exhibits have been developed through a partnership of staffs at Mount Rainier National Park and the USGS Cascades Volcano Observatory at Vancouver, WA. Exhibits and publications will be forthcoming as research continues. For example: a new display is being developed for Sunrise Visitor Center which will feature the volcanic processes and hazards which Mount Rainier poses.



## RECYCLING

Mount Rainier is proud to offer a recycling program for visitors again this year. With a growing need to protect our natural resources while reducing energy consumption and pollution, your cooperation will help preserve all of our national parks.

After the first full year of operation, Mount Rainier recovered nearly 59 tons of recyclables. Because the park was still forced to landfill over 400 tons of waste, we are looking for ways to improve the recycling program.

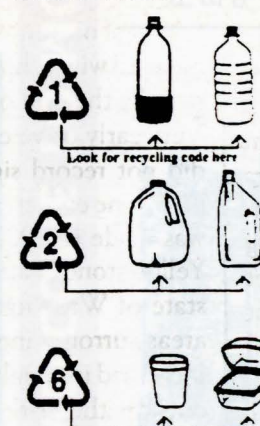
In order to collect more recyclables and cut program costs, experiments are now being conducted to test the success of source separation. As a result, some areas of the park have 3-5 separate containers for recyclables, instead of just one bin for all recyclables. Please help our program by sorting your waste into the proper bin.

We encourage you to continue recycling at home, in school, and at work. Of course the best way to reduce your waste is by purchasing re-usable products (and reusing them) that have minimal packaging. Also, try to buy recycled products to "close the loop."

Your participation here at Mount Rainier is part of a broad effort sponsored by the National Park Service and The Dow Chemical Company. The partnership has developed similar recycling programs in six other national parks.

### Use Park Recycling Bins For:

#### PLASTICS:



#### GLASS:



#### METAL CANS:



### Use Trash Cans For:

- Food
- Paper Items
- Bottle Caps
- Other Wastes



## Crews At Work

### State Route 410 (Mather Memorial Parkway)

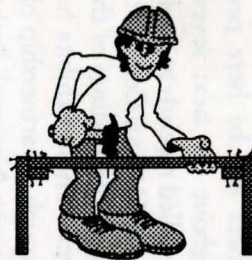
Road work located on SR410 north of the park boundary. Expect delays on this road reconstruction to be about 30 minutes.



### Kautz Creek Area Improvements

Work is scheduled to begin after Labor Day weekend for general improvements to the Kautz Creek Visitor Use area, located 3 miles east of the Nisqually Entrance. The project involves construction of fully accessible

vault toilets and a picnic area. The work is scheduled to be completed by late October, 1995. Expect some minor inconvenience in the work area.



## Projects At Paradise



### Henry M. Jackson Memorial Visitor Center

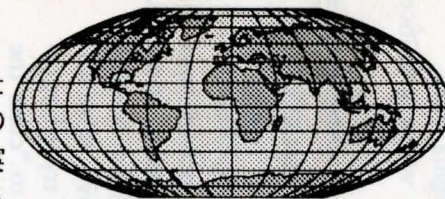
Rehabilitation of the visitor center roof will continue throughout the 1995 season. Expect some minor inconvenience in the building.

### Water Upgrades

Contractors will be working throughout the 1995 season to upgrade water treatment capabilities and to correct wastewater collection system deficiencies in the Paradise area. Expect some inconvenience, reduced parking spaces and trail detours.

## WELCOME TO MOUNT RAINIER NATIONAL PARK

マウント・レイニアー・ナショナル・パークによろこそ。日本語で書かれた公園設備、サービス、安全についての注意事項、公園内の見どころなどの案内書は入口ゲートと案内センターにあります。



歡迎光臨 Mount Rainier National Park (維尼亞山國家公園)!

入口亭和接待中心備有關於設施、服務、安全及公園景觀的中文資料。

마운트 레이니어 국립공원에 오신 것을 환영합니다.

한국어로 된 공원내의 각종 편의시설, 서비스, 안전수칙 및 자연경관등에 관한 안내서가 공원입구 초소와 방문객 센터에 비치되어 있습니다.

LE DAMOS UNA CORDIAL BIENVENIDA AL PARQUE NACIONAL MOUNT RAINIER. HAY INFORMACION DISPONIBLE EN ESPAÑOL SOBRE LAS INSTALACIONES, LOS SERVICIOS, LOS SISTEMAS DE SEGURIDAD Y LAS BELLEZAS NATURALES DEL PARQUE EN LAS CASITAS DE ENTRADA Y EN LOS CENTROS DE SERVICIOS AL VISITANTE (VISITOR CENTERS).

BIENVENUE AU PARC NATIONAL DE MOUNT RAINIER. VOUS TROUVEREZ DES INFORMATIONS EN FRANÇAIS RELATIVES AUX INSTALLATIONS, AUX SERVICES, À LA SÉCURITÉ ET AUX POINTS D'INTÉRÊT DU PARC, AUX POSTES D'ENTRÉE OU AUX CENTRES DES VISITEURS (VISITOR CENTERS).

CHAO MUNG QUI VI DEN CONG VIEN QUOC GIA MOUNT RAINIER. TIN TUC CO SAN BANG TIENG VIET NAM VE CO SO TIEN NGHI, DICH VU, AN TOAN VA CAC THANG CANH TRONG CONG VIEN TAI CAC TRAM KIEM LAM, TRAM DI VAO VA TRUNG TAM THAM VIENG.

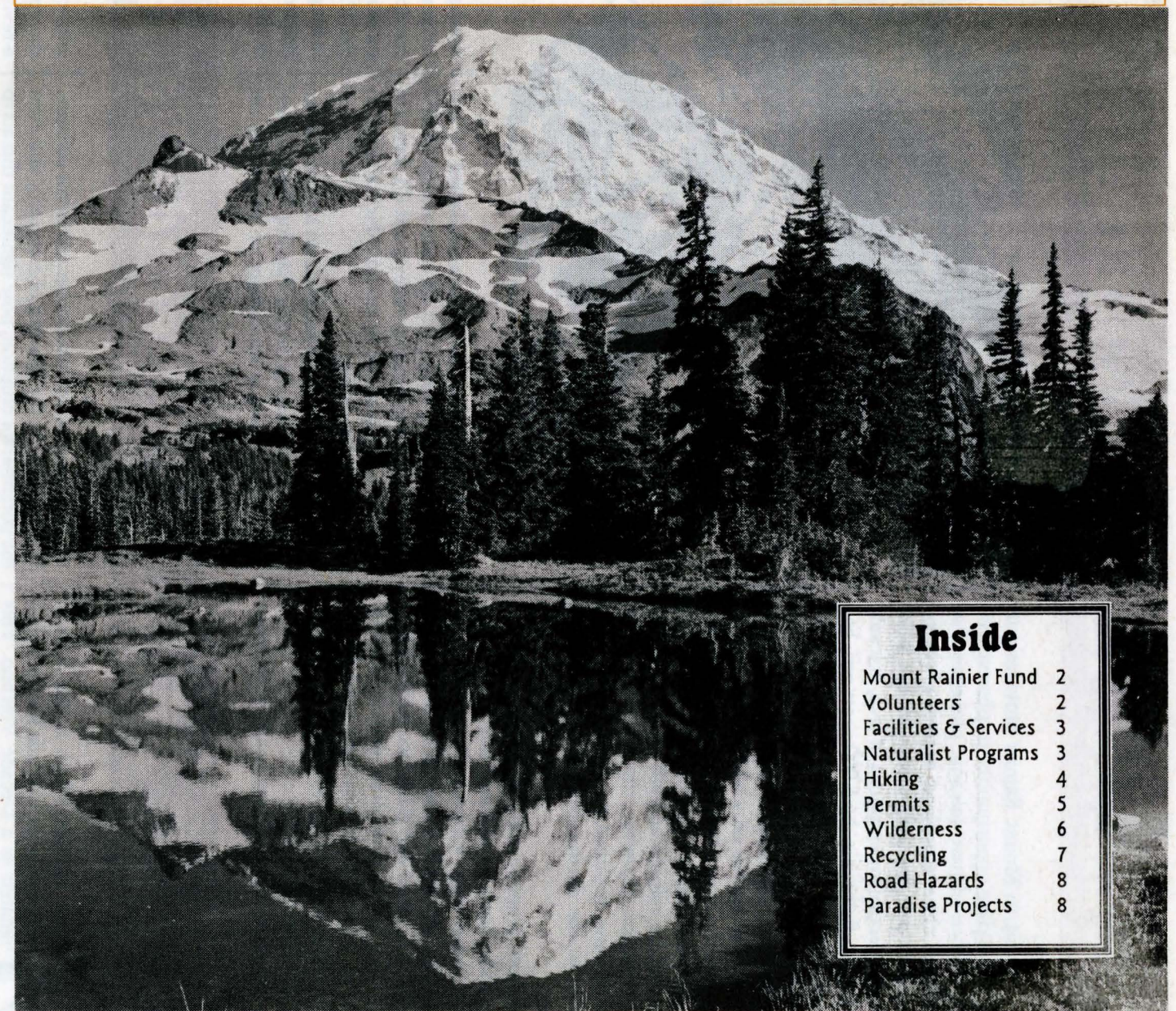
Добро пожаловать в Национальный парк горы Рэниер. Информацию на русском языке об удобствах, обслуживании, правилах безопасности и туристских местах парка вы можете получить на станциях смотрителей парка, у входа и в туристских центрах.

WILLKOMMEN IM MOUNT RAINIER NATIONAL PARK. INFORMATIONEN ÜBER EINRICHTUNGEN, SERVICELEISTUNGEN, SICHERHEITSMASSNAHMEN UND SEHENSWÜRDIGKEITEN DES PARKS SIND IN DEUTSCHER SPRACHE BEI DEN RANGERSTATIONEN AN DEN PARK-EINGÄNGEN UND IN DEN BESUCHERZENTREN (VISITOR CENTERS) ERHÄLTICH.



## Mount Rainier National Park

# TAHOMA



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