Welcome to the North Cascades

We are happy that you have included the North Cascades in your recreation and travel plans. The peaks, rivers, forests, and wildlife of these mountains make them an especially beautiful and interesting part of your public lands. We appreciate the role that each of you plays in caring for this place by what you do both here and at home. The publication of this newspaper by two agencies managing adjacent lands is one small example of a growing recognition that natural processes happen without regard to boundaries. Even distant activities such as the generation of airborne pollution affect wild places. Public land-managing agencies are working together to protect the North Cascades. You, too, have a role to play in preserving your heritage in the National Forests and Parks. We hope you have a safe and rewarding visit!

William F. Paleck
Superintendent
North Cascades National Park

If you have comments, suggestions or questions about the management of the National Park or the National Forest, please write us at: 2105 State Route 20, Sedro Woolley, WA 98284.

The Mt. Baker District of the Mt. Baker-Snoqualmie National Forest includes over 530,000 acres in northwestern Washington. The District encompasses the:

- Skagit Wild & Scenic River System
- Mt. Baker National Recreation Area
- Heather Meadows
- Mt. Baker Scenic Byway
- Sections of Glacier Peak Wilderness
- Noisy-Diobsud Wilderness
- Mt. Baker Wilderness

The North Cascades National Park Service Complex includes three areas of the National Park System totaling 684,000 acres, including North Cascades National Park, and Lake Chelan and Ross Lake National Recreation Areas. Ninety-three percent of the Complex has been designated by Congress as the Stephen Mather Wilderness. These areas embrace the crest of the North Cascades Mountains and are bounded on the west by the Mt. Baker-Snoqualmie National Forest.

1995 marks the 25th Anniversary of Earth Day, reminding us that National Parks and Forests are not islands but part of a larger whole. This edition of the Challenger highlights issues and happenings that affect the Park and Forest from beyond their boundaries. More than ever, public land managers are paying heed to this larger picture. Our everyday actions can contribute to preserving the heritage we have in these public lands.

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What to See and Do

Drive

The North Cascades Highway loop (SR 20, 153, 97, 2) across the Cascades Mountains. See pages 8-9 for State Route 20 guide to points of interest; see back cover for detailed map of the loop. Be alert when pulling on or off a highway, and use caution on Forest access roads. Protect valuables by keeping them with you when leaving your vehicle.

Walk

Short Self-Guided Trails:
- Baker Lake: Shadow of the Sentinels, barrier-free loop trail through old growth forest
- Newhalem: To Know a Tree, Trail of the Cedars and Visitor Center trails
- Colonial Creek Campground: Thunder Woods Nature trail
- Ross Lake Trail (100yds east): Happy Creek Forest Walk, barrier-free nature trail
- Rainy Pass: Rainy Lake Trail, paved one mile barrier-free route to Rainy Lake
- Hozomeen: Trail of the Obelisk
- Stehekin: Imus Creek, McKellar Cabin and Rainbow Mist trails

Hike & Climb

Many trails lead into wilderness. Overnight backpacking trips into North Cascades National Park require a free permit, but day hikes do not. Climbers should choose experienced partners or licensed guides. Obtain the most complete climbing information on conditions and hazards at Marblemount, Voluntary Climbing Registers are available at the Wilderness District Office, Sedro Woolley and Glacier. Refer to page 5 for trail safety information.

Bike

Many people tour the North Cascades Highway by bicycle. The remote beauty of the route offers a unique and challenging experience. Be well supplied with water, food and warm, waterproof clothing. Travel single file on the right edge of the road, use reflectors and bright clothing. Hiking trails are closed to motorbikes and bicycles. Most side roads are rugged enough for the most avid mountain biker.

Pets

Pets are allowed in developed recreation areas within the National Forest and National Recreation Areas. Pets are prohibited within the National Park except on the Pacific Crest Scenic Trail, where they must be on a leash. In the Mt. Baker Ranger District they are prohibited on the Picture Lake Path and the Table Mt. Trail, both at Heather Meadows.

Boat

Much of the recreation in the North Cascades is water-oriented. Travel to Stehekin by cruising up 55-mile long Lake Chelan. The Lake Chelan Boat Company operates Lady of the Lake and Lady Express daily in summer. Get specific information in advance including schedules and a list of Accommodations and Services from a Ranger Station.

River floating is an adventure worth planning. Experienced boaters run the Skagit, Nooksack and Stehekin Rivers. Rafting with a licensed outfitter may be a better option. For lake recreation, boat ramps are available at Baker, Gorge, and Diablo Lakes, and the north end of Ross Lake at Hozomeen. Boat rentals are offered at Baker, Chelan, and Ross Lakes. Carry and use Coast Guard approved safety devices and life jackets. Be aware of weather and wind patterns.

Fish

The Skagit River (Washington’s second largest after the Columbia) and its impounded lakes are home to many species of trout and salmon. In order to protect spawning fish populations, it is necessary to comply with special regulations including closures, seasons, bag limits, and gear restrictions. These are listed in the Washington Department of Fish & Wildlife game fish regulations and in the Fishing in the North Cascades brochure.

Lake Chelan has fresh water cod and salmon. The Stehekin River gives anglers a good chance at rainbow and cutthroat trout. Bait shops and local anglers are the best sources of information and advice. Fishing in Washington, including in this area’s National Parks and Forests requires a valid Washington State fishing license.

Stay

Campground options are listed in the campground along with the North Cascades Highway Map. Other accommodations include resorts within the Park Complex: Ross Lake Resort, Rockport, WA 98283, (206) 386-4437 and North Cascades Stehekin Lodge, Box 457, Stehekin, WA 98816, (509) 682-4494. The Baker Lake Resort (360) 873-4835 operates by Forest Service special use permit at Baker Lake. Many other private accommodations are available. Check visitor information or Chamber of Commerce offices for details.

Plan ahead for weekend trips by calling for reservations.

Backcountry Camp

National Forest wilderness camping does not require a permit. Camping at designated or existing sites is encouraged.

Party size is limited to 12 and campfires are discouraged in subalpine areas.

Over 200 backcountry campsites are available for hikers and stock users at North Cascades National Park Service Complex. Permits are required for all overnight stays in the Park Complex’s backcountry. These are available on a first-come, first-served basis from Ranger Stations at Marblemount, Sedro Woolley, Hozomeen, Glacier or on the eastside at Chelan, Stehekin, Twisp, Winthrop and Early Winters. For permit information contact: Wilderness District Office North Cascades National Park Marblemount, WA 98267 Phone: (360) 873-4500

Weather can change quickly. Be aware of the danger of hypothermia, caused by exposure to cold and aggravated by wet, wind, and exhaustion.

Visit

North Cascades Visitor Center near Newhalem conveys a sense of the North Cascades wilderness through exhibits & theater programs. Models, photographs, drawings, and video dramatize the great variety of plants and animals living here. Maps on the walls of the visitor center place the North Cascades wilderness into its larger context. This year a relief model will be added to highlight geology and vegetation.

Naturalist programs are held daily during the summer. These include short talks out on the patio, talks to the vista point and Junior Ranger programs for children. Current schedules and announcements are posted at the center. Additional programs on the natural and cultural history of the North Cascades are held at campgrounds.

The Mt. Baker Ranger District’s Heather Meadows Visitor Center offers a glimpse into the rich natural and cultural history of the Mt. Baker area. See page 7 for more details about Heather Meadows.

Golden West Visitor Center in Stehekin has a variety of programs this year. See page 4 for details.

Naturalist Evening Talks (Summer)
- Colonial Creek Amphitheater, Nightly
- Newhalem Creek Amphitheater, Weekends
- Golden West Visitor Center, Nightly

-Check bulletin boards for details-
Earth Day Twenty-five

In Yosemite Valley in 1868, writer-naturalist John Muir described the unspoiled natural beauty and the renewal of spring which surrounded him. Twenty years later Muir lamented the loss of flowering Sierra meadows to “hoofed locusts” and the cuttin g of ancient redwood groves with little regard to their past or future. Muir dedicated the rest of his years rallying support for wild lands and natural processes.

In 1970, Senator Gaylord Nelson challenged students from across the land to come together in a great cause - to save our planet. April 22 was proclaimed “Earth Day,” a time to celebrate the earth. Through education and action, Earth Day hopes to rally a new direction in human relationships with the earth.

1995 marks a quarter century of Earth Days. This movement has spawned awareness and action around the world. It is much more than preserving natural landscapes. It is about our homes and resources, and how we interact with life processes in concert with all species. But have these efforts been enough? While we seek ways to save our planet, we incur massive losses of resources around the globe.

Magnificent Mountain Cycles

Mountain chains parallel the Pacific coast­line of the United States and British Columbia, extending southward from the Aleutian Islands of Alaska to the coastal ranges of California. In Washington State, the North Cascades Range is a portion of this coastal chain and provides a rugged wilderness and climatic conditions that are unique to this region.

What do these mountains mean to visitors? To some they might be a place to “get away”, a place to photograph an ice carved peak, to angle for rainbow trout, or to traverse a gla­cier. To others they might be a distant place to admire from the Space Needle of downtown Seattle. Still others might view these mountains as the product of complex geologic activity or a primary control of our environmental condi­tions. How did these mountains form? How do they affect our lives?

Imagine it’s the Eocene Epoch (54 million years ago, when mammals first gained domin­ion on earth), and you’re walking along the Washington coastline, located hundreds of miles east of its present site. Waves of the Pacific Ocean are breaking along the shelf, and as you look out at the horizon, an island seems to be approaching from the southwest. Assuming you would live another 50 million years, you might have observed what follows. Travel­ing at approximately the same rate at which a fingernail grows, this island approaches and collides with the coastline. The plate which carries the island continues its journey north­east, while ocean sediments and continental crust intensely deform and uplift. Strike-slip faults develop from the plate’s motion, displac­ing terranes along the coastline. To the west, oceanic crust continues to disappear, sub­ducted beneath the newly extended coastline. This action continues, thrusting oceanic and continental crust and sediments skyward, resulting in the modern Cascade Range.

In Anne and Paul Ehrlich’s scholarly work, Healing the Planet, their final words are: “It is an exciting time to be a human being, a member of a species playing the ultimate game of ‘chicken.’ By the time today’s children are parents, it should be reasonably clear whether humanity will turn aside in time or continue headlong toward civilization’s final collision. You can help make that decision.”

Let us celebrate this year, and each day, with renewed hope and vigor in healing our planet. We hope that human care and interaction with the wild lands of the North Cascades will foster inspiration for a global perspective. Henry David Thoreau wrote: “In Wildness is the preservation of the world.” Native Americans have known their physically and spiritually connected to all things. Perhaps here, in the North Cascades’ Parks and Forests, our physical and spiritual beings might come closer to joining that natural order which can save our earth.

-Jim Harris, NPS District Interpreter

My First Earth Day

The year was 1991, I was a freshman in college, out on my own for the first time. Going to college was a dream of mine, and I was finally there. But along with all of the magic came knowledge. I met Alicia through a mutual friend. She worked in the Environmental Center. Her tales of brutality toward animals and diminishing rainforests were difficult for me to listen to. I realized that I had lived in a world protected from some of the harsher realities of life. I began to ques­tion what I put in my mouth when it was dinner time. I started to go out of my way to buy recycled products. I took an environmental studies class. I began building an ethical foundation upon which to base my beliefs.

Then came Earth Day, I remember it well. It was a beautiful, sunny day in April. My friends and I were volunteering our time at the Environmental Center booth. Everyone gathered on the universi­ty campus to celebrate a common theme. I didn’t know it at the time, but there was something behind the fanfare, a kind of understanding and apprecia­tion. It was Earth Day, the first I had ever experienced. The excitement of the day and the people I met urged me to explore the intricacies of the environmental movement, to see if it had a place for me.

Now, four years later, I am about to graduate from Huxley College of Envi­ronmental Studies. I am more aware of the fragility of our planet, and the importance of such events as Earth Day to bring attention to its plight. When Gaylord Nelson, founder of Earth Day, spoke at Western he said that our envi­ronmental problems will only be solved through a change in ethics. But we don’t care unless we first understand. Earth Day helps us to appreciate our plight, but action needs to be taken. If you have a concern, tell your local congressman. Our problems will not be solved unless we show this concern.

When I look back to my days in public school, I can’t help but wonder why I wasn’t taught more about this national holiday. I feel cheated when I think of how my teachers ignored its significance. Why can’t Earth Day be as meaningful to schoolchildren as Valentine’s Day or Halloween?

Perhaps it took 25 years for our country to acknowledge its importance. Let’s not let another 25 years go by without increasing children’s awareness of Earth Day. The coming generations should know and understand what direction our planet is heading so that they may make sound decisions about its future.

-Barbara A. Borst
Diverse Options at Stehekin

Stehekin residents, the National Park Service (NPS), and North Cascades Stehekin Lodge are working together to provide more opportunities for visitors year-round. North Cascades Stehekin Lodge has expanded winter services to include lodging, meals, transportation to trailheads, and assistance with grooming ski trails. Valley residents also provide lodging and services. The NPS provides information, programs, and snowshoe walks.

As the snow melts, hundreds of miles of hiking trails open in the Stehekin vicinity. In summer, businesses in the valley offer horseback rides, raft trips, guided fishing, and special motor tours. The NPS expands its information services at the Golden West Visitor Center. Here you can find books, maps, and area orientation. Rangers present talks and other programs daily on cultural and natural history.

The NPS and Stehekin residents, under the auspices of the Arts and Humanities of Stehekin, offer three special programs: Golden West Gallery, workshops, and Travel Series programs.

Northwest artists exhibit a variety of works on a three-week revolving basis from May through October. Exhibitors programs interpret their form of artistic expression relating to the natural and human history of Stehekin. A variety of media is on display: paintings, photographs, batiks, quilts, jewelry, sculptures, wood carvings, and more.

Workshops at the Golden West Visitor Center offer varied experiences such as fishing, basket-weaving, culinary uses of plants, and home fire safety.

The Travel Series programs are presented by both NPS rangers and valley residents. These slide programs introduce a global perspective to the North Cascades.

North Cascades Stehekin Lodge offers overnight accommodations, a restaurant, store, gasoline, boat moorage, and bicycle and boat rentals. Various other businesses provide services during the summer season, including transportation, day and overnight horseback trips into the wilderness, bicycle rentals, and guided raft trips down the Stehekin River. Several businesses provide food and overnight accommodations on private property within the Stehekin Valley. The NPS and businesses in the Stehekin Valley share the goal of providing a wide variety of services to the valley’s visitors.

Travel to Stehekin and enjoy a rich diversity of experiences at any season of the year in this unique setting.

Stehekin Valley Transportation

The NPS and Stehekin Adventures, Inc., are offering transportation services in Stehekin again this summer. Both provide a narrated tour, camping and hiking information along the way. Passengers may embark or disembark at any point along the routes. Other local companies provide similar tours.

Stehekin Valley Road begins at Stehekin Landing and is paved for four miles. At Harlequin Campground, asphalt gives way to gravel. Beyond High Bridge, 11 miles from Stehekin Landing, the road becomes rough. Along the way are scenic views of the Stehekin River tumbling over large boulders and resting in deep, quiet pools. Tantalizing glimpses of jagged glacier-clad peaks appear behind dense forests of ponderosa pine, Douglas-fir, and Pacific silver fir.

The shuttle buses are 14-passenger vans. They carry backpacks but not bicycles. The shuttle bus system will operate from May 19 through September 30, and may continue until October 15. Buses depart Stehekin Landing daily at 8 a.m. and 2 p.m. The round trip from Stehekin Landing takes from 2 to 5 hours, depending on the season. Weather permitting, the road should be open by July 1 to Cottonwood Campground.

The fare is $5 per person, per zone, one-way. The two zones are: Stehekin to High Bridge and High Bridge to Cottonwood. From May 19 through early June, the system will operate only to High Bridge (11 miles from Stehekin). From early June through early July, the bus will go as far upvalley as Bridge Creek (16 miles from Stehekin). From early July through September, the bus will go to the end of the road at Cottonwood (23 miles from Stehekin). Dates are subject to change, depending on rate of snow melt and storm damage.

Reservations are recommended to ensure a seat on the NPS shuttle buses. To reserve a seat, call the Golden West Visitor Center between 8 a.m. and 4:30 p.m. at (360) 856-5703, ext. 14, between May 19 and October 15. You must reconfirm your reservation by contacting the Golden West Visitor Center by telephone or in person two to four days in advance of your ride. You do not need to reconfirm if you make your reservation less than two days in advance. Backpackers can make reservations for bus when picking up a multi-day camping permit for trips which include transportation on the shuttle buses; in this case also, reconfirmation is not necessary.

Stehekin Adventures, Inc. operates a 36-passenger bus from Stehekin Landing to High Bridge from June 9 through September 30, charging $4 per one-way trip. This bus can accommodate bicycles and backpacks. No reservations are required.

Artifacts Found From Afar

Museum collections preserve natural history specimens and cultural objects that represent ecosystems, landforms, and human activities. We can glimpse into the past through the artifacts found in the North Cascades.

Native peoples living along the rivers and hunting in the high country found most essential resources close by. Occasionally, materials from far away were shaped into tools such as knives and arrowheads, incorpo­ rated into ornaments and utilized as currency. Although artifacts of such "exotic" materials are rare in archaeological sites in the park (less than one percent of items found), they provide important clues about ancient trade routes and relationships in the North Cascades and beyond.

Among the most widely traded items in the Pacific Northwest was obsidian, or volcanic glass. It was highly prized for making stone tools because of its predictable flaking qualities and ability to form a very sharp cutting edge. From as far back as 9,000 years ago, this dark glassy rock was traded from flows in southern and central Oregon to as far north as the central coast of British Columbia. Much of the obsidian found in the park comes from these Oregon sources, but one item comes from a source in northeastern California, and others may come from a source in central British Columbia. A dart or arrow tip of obsidian is on display at the Park Visitor Center in Newhalem.

Another widely traded material among native peoples was shell, particularly dentalium. Dentalium is a small mollusk possessing a hollow, tusk-like shell (pictureed), which was harvested in deep water by native peoples of the ocean coast of Vancouver Island and the Olympic Peninsula. It was highly prized as personal ornamentation, and was traded as far north as Alaska, east to the peoples of the Plains, and south to California. Its display was a sign of high status and wealth. Fragments of dentalium have been found within the park.

These items may have been traded for mountain goat wool and other resources unique to the mountains throughout the Pacific Northwest.

Ongoing research by park archeologists and laboratory analysis of source material continues, linking local inhabitants to distant places.

-Camille Evans, NPS Collections Mgr & Gregg Sullivan, NPS Archaeologist
Mt. Baker Trails: No More Heyday?

Back in the heyday of the Mt. Baker Trails and Wilderness program in 1988, the district had a 31 person crew (built up from a three person crew in 1980). New trails were being constructed, old trails were being reconstructed, and almost all existing trails were maintained to a standard level; brushed, logged out and minor tread repair done. But alas, the sun soon set on this heyday. The money pot for trail construction dried up and maintenance dollars dropped; by 1994 the crew had dwindled. Less than one-third of a 250 mile trail system was maintained to standard. Many of the less popular trails were essentially abandoned, suffering from the sometimes harsh elements.

To add to the problem, every year there is increased use on most trails. Without sufficient wilderness ranger patrol, many trail users do not respect the regulations; building campfires, trampling fragile meadows, littering, and camping in closed campsites, to name a few problems. This adds more work to the existing backlog of maintenance needs.

Leaves No Trace: Minimum Impact Techniques to Remember

Protect wilderness. Be aware of your impact and practice the following techniques:

- **Plan ahead.** Prepare mentally and physically. Choose destinations that you are in condition to handle and take suitable equipment (see the 10 essentials). Obtain permits for backcountry overnights in North Cascades National Park Complex.

- **Limit party size.** Keep party size below 12 individuals (animals & people) to minimize your impact when traveling in the wilderness. In cross-country zones, limit six people.

- **Stay on the trail.** Making parallel trails, cutting switchbacks, and widening trails causes severe erosion and damage to soil and plants. Wear smooth sole shoes in camp areas.

- **Leave rocks and flowers.** Building, moving or changing anything in the wilderness can be extremely destructive. Do not level ground or dig ditches for tent pads.

- **Camp only in designated sites.** Prevent the spread of bare areas. In cross-country areas without designated sites avoid fragile alpine vegetation and camp on snow, rock, or in a grassy area of the forest.

- **Use campstoves instead of wood fires.** Fires sterilize the soil and use material which should be allowed to recycle naturally. Use only existing fire rings and wood that is dead and down for campfires. Keep the fire small and be sure it is dead out before you leave.

- **Carry a collapsible water bottle.** This will minimize your trips to water sources.

- **Wash responsibly.** Use only biodegradable soaps in small quantities or no soap at all, and wash 100 feet from water sources.

- **Pack out litter.** It's a good idea to eat all the food you prepare; leftovers may attract animals. Buried litter disturbs soil and may be dug up by animals.

- **Dispose human waste properly.** Use vault and compost toilets where provided, and deposit only human waste and toilet paper in them. Urinate on a rock or on bare soil. If no toilets are available, dig a 4-6" deep hole 100 yards away from campsites and water sources.

- **Leave pets at home.** Pets (especially dogs) are a threat to wildlife and could prevent sightings of any on your trip. Pets are prohibited in the National Park. If you have a dog, refer to page 2 to see where they are allowed.

- **Keep wildlife wild.** Carry easily cooked food with minimal odors to avoid attracting wildlife. Hang food and scented toiletries. Do not feed wildlife.

Volunteers have tried to reduce some of his backlog. For example, last year:

- **Whatcom County Backcountry Horsemen helped to replace a rotten section of punk­cheon walkway on a horse trail.**
- **Seattle-based Women’s Climbers Northwest helped to restore a damaged meadow by planting native plant plugs.**
- **A group of high school students from Camp Orkila cleared brush along an entire trail.**
- **People worked in the district’s greenhouse collecting foliage and seed for starts to assist with high alpine revegetation efforts.**
- **A few individuals have taken the initiative to remove brush and do minor tread repair on their own.**
- **Reach Out Expeditions maintained the Hidden Lakes Peak Trail.**

There is still much to be done and we need your help.

As a backcountry user, there are many things you can do to help when out hiking or riding. If you see litter, pick it up and pack it out. Contact the local Forest Service office if you find a problem that you cannot fix. Resource managers will take care of it as soon as possible.

Groups and clubs are encouraged to offer volunteer services; all districts are in need of assistance. Maintenance work is always needed and bridge and puncheons often need repair. Last but not least, make sure you and your companions are responsible trail users. Abide by the rules so that those who come after you can enjoy the same experience you did.

-Lu Schilling, Mt. Baker Trails

**Leave No Trace: Minimum Impact Techniques to Remember**

**Trail Facts**

Many visitors to the North Cascades enjoy hiking its miles of trails. While you’re hiking, consider what has occurred to make your experience possible.

The North Cascades National Park trail crew tries to maintain 386 miles of trail annually. This trail system includes six suspension bridges, 79 other bridges totalling 5,274 feet, 15,888 feet of reinforced trail using log or rock through wet areas, 5,469 drainage devices (water bars and dips), and 125,535 feet of trail that require annual brush clearing. The trail crew maintains 98 hiker and horse camps (with fire grates, hitch rails, tent pads, and toilets), and three historic fire lookouts and other structures in the backcountry.

Who does all this work? The size of the crew fluctuates annually but averages 15 employees: a foreman, three crew leaders, two animal packers, and laborers. The foreman works year-round while the rest of the crew works six to nine months. Five women are on the crew. The age of crew members averages 34 years, and they all have about 10 years of trail maintenance experience. They are a diverse group of people in excellent physical condition. They’re used to working hard and living in the backcountry under a variety of extreme environmental conditions. All share a love for the wilderness.

Trail maintenance is a never-ending task. Bridges and facilities wear out. Brush continues to grow and needs to be cut back. There never seems to be enough money or people to get all the work done.

You can help. If you encounter loose branches or rocks on the trail, move a few out of the travelway. Stay on the maintained trail, don’t cut switchbacks or create new social trails and treat backcountry facilities with respect. Thanks for your help.

-Don Mass, NFS Maintenance Worker & Safety Officer
Mt. Baker Scenic Byway

The upper 24 miles of the Mt. Baker Highway, State Route 542, have been designated a National Forest Scenic Byway. Beginning at the Glacier Public Service Center, the Byway route ascends along the North Fork Nooksack River ending at spectacular Artist Point, elevation 5140', in the Heather Meadows Area.

A series of switchbacks along the last 10 miles offer outstanding views of glacial carved peaks and craggy Mt. Shuksan in North Cascades National Park. At road's end, trail systems lead into the Mt. Baker Wilderness, where snowcapped Mt. Baker rises majestically above the landscape. During winter months, snows accumulate and motor traffic ends below at the parking facilities of the Mt. Baker Ski Area.

Points of Interest

- **Glacier Public Service Center Milepost (MP) 34**
  Listed on the National Register of Historic Places, this unique blend of native stone and timbers was constructed in the late 1930s by the Civilian Conservation Corps (CCC). Today it is operated during the summer season by the Forest Service and National Park Service as an information center.

- **Mt. Baker Vista**
  Dramatic viewpoint at the end of Forest Road 39, the Glacier Creek Road. Offers a close-up look at Mt. Baker's Coleman and Roosevelt glaciers. Picnic tables line the parking area.

- **Douglas Fir Campground MP 36**
  Camp units nestled under tall timbers along the swift moving North Fork Nooksack River. CCC era picnic shelter available for day use. Fee area.

- **Horseshoe Bend Trail MP 36**
  One and a half mile hiker-only trail wanders through a forested ledge above the river's bank.

- **Nooksack Falls MP 41**
  The falls plummet 100 feet over rocky outcrops. Fence-lined pathway leads to viewpoint. Stay behind fenced area for safety reasons.

- **Silver Fir Campground MP 47**
  This 21 unit campground is located on the North Fork Nooksack River near Ruth Creek. CCC era picnic shelter available for day use. Fee area.

- **Heather Meadows MP 52**
  Popular day-use recreation area located along the upper reaches of the Byway. Short summer season offers glimpse into subalpine life cycles. Barrier-free sections of Fire and Ice and Artist Ridge interpretive trails have been developed for physically challenged visitors. More difficult hiker-only trails enter the surrounding Mt. Baker Wilderness, where group size is limited to 12 persons. Heather Meadows Visitor Center showcases the cultural heritage of the area. Open summers only July through mid-September.

Backcountry Awareness

Don't let a pleasurable outing turn into an unexpected tragedy by not being prepared. Unfortunate incidents have touched the lives of visitors accessing backcountry areas from Heather Meadows. These reminders emphasize that entering into a mountain experience should not be taken lightly.

- **Be well informed.**
  - Research maps & trail handbooks.
  - Carry a well stocked day pack.
  (For tips see "The 10 Essentials", p. 5)

Most importantly, understand there is a difference between a day outing in a developed area like Heather Meadows and exploring the surrounding Mt. Baker Wilderness, where the environment is managed in its natural state.
Heather Meadows
Yesterday, Today and Tomorrow

Recreationists have been heading up to Heather Meadows since the early 1920s when a grand lodge accommodated overnight guests from around the globe. A tragic fire ended this opulent era, followed by the nation’s Great Depression, out of which was born the Works Project Era and the Civilian Conservation Corps (CCC).

During the mid to late 1930s CCC crews worked alongside the Forest Service constructing the original trail system and picnic grounds that make up the core of facilities at Heather Meadows. One of their achievements was the warming hut now operated as the Heather Meadows Visitor Center.

The Forest Service recognized a need to rehabilitate facilities at Heather Meadows in the 1980s. Project work addressed visitors’ needs and the protection of delicate natural resources. Now the future of Heather Meadows is up to us all. Help preserve this outstanding area by following the area regulations and staying on the designated trail system.

Heather Meadows is dedicated to the memory of Scott Paul, to his life and 16 years of service with the Mt. Baker District trails and wilderness programs from 1977-1993.

Discover Heather Meadows Trail Opportunities

**Picture Lake Path**
The classic alpine vista of Mt. Shuksan mirrored in Picture Lake is one of the most photographed mountain scenes in North America. Take your camera, walk along the half mile loop and enjoy the beauty of the mountain’s reflection in the waters of Picture Lake. No pets allowed on trail.

**Fire and Ice**
Located adjacent to the visitor center, this half mile self-guided interpretive loop is barrier-free and leads to a scenic overlook above Bagley Lakes.

**Bagley Lakes**
This one and a half mile hike winds along the east shore of Bagley Lake. The trail joins with the Chain Lakes and Wild Goose trails. One of the attractions on this trail is the Twin Arch Bridge over Bagley Creek.

**Chain Lakes**
Traverses along the side of Table Mt., enters the Mt. Baker Wilderness and drops down into the Chain Lakes basin. The six and a half mile trail continues past the lakes, climbs up and over Herman Saddle and drops down into Bagley Lakes basin. A return loop can be made by using the Wild Goose Trail at Terminal Lake back to Artist Point. Campfires prohibited. Camp only in designated sites.

**Lake Ann**
 Drops down into headwaters of Swift Creek before climbing through rocky slopes to the lake. The last mile of this four mile long hike is often snow covered late into summer. Wear sturdy boots, take your camera, drinking water and insect repellent. Campfires prohibited.

**Table Mt.**
Narrow, exposed, one mile trail. The view from the top is even better than the thrill of getting there. Use extreme caution, especially when hiking with children. No pets permitted on the trail.

**Wild Goose**
The Wild Goose trail winds through Heather Meadows connecting to other trails and facilities. The first segment begins at the ski area parking lot and ends at Austin Pass picnic area. The second section starts at Terminal Lake and ends at Artist Point.

**Panorama Dome**
Trail drops down through Galena Canyon and heads approximately two miles toward the summit of Panorama Dome. Rough trail may be hard to follow after 3/4 mile. Slated for reconstruction.

**Terminal Lake**
**Austin Pass**
Unequaled views from over 40 picnic sites. Just adjacent to the picnic area is the small but beautiful Terminal Lake. This area is very fragile and can easily be damaged. Please do not wade or swim in the lake.

**Artist Ridge**
This one mile self-guided interpretive loop is barrier-free for the first 200 feet to a scenic viewpoint. Baker Lake can be seen in the basin below. Mt. Rainier can be seen in the distance on clear days.

**Ptarmigan Ridge**
Branches off Chain Lakes trail one mile from Artist Point. Enters Mt. Baker Wilderness.

**Artist Point**
Parking and viewpoint at road’s end. Here you will find ultimate views of Mt. Baker and Mt. Shuksan if the sky is clear. Chain Lakes, Table Mt., Ptarmigan Ridge and Artist Ridge trailheads.
Mt. Baker NRA
Baker Lake

- Mt. Baker Ranger District
  - Snoqualmie National Park Service Complex
- Skagit River Trail: Access off Forest Road 1030. Swatches up south facing slope to mountain ridge-top. Panoramic view.
- Rockport State Park
  - Skagit View and Snoqualmies Trails loop south of Highway 20 at Rockport State Park. Five more miles of trail circles park.
- Howard Miller State Forest
  - Located at Rockport along the Skagit River.

Marblemount

- Wilderness/North Cascades National Park Backcountry Permits: (360) 787-4500.

Cascade River Road

- Colby Creek to Rockport State Forest. Four mile ascent to Lookout Tower.
- Horseshoe Lake: Access off Forest Road 1580. Four mile ascent to Lookout Tower and view of Hidden Lake in North Cascades National Park.
- Hidden Lake Park: Access off Forest Road 1580. Four mile ascent to Lookout Tower and view of Hidden Lake in North Cascades National Park.
- Hidden Lake Park: Access off Forest Road 1580. Four mile ascent to Lookout Tower and view of Hidden Lake in North Cascades National Park.
- Cascade Pass: 3.7 mile trail at road's end leads to spectacular views, continues to Skagit Valley Road and Park Service shuttle bus (reservations required).

Ross Lake NRA

- Ross Lake Trail: 3.7 mile trail at road's end leads to spectacular views, continues to Skagit Valley Road and Park Service shuttle bus (reservations required).
- Sullivan Lake: Access off Forest Road 1580. Four mile ascent to Lookout Tower and view of Hidden Lake in North Cascades National Park.
- Hidden Lake Park: Access off Forest Road 1580. Four mile ascent to Lookout Tower and view of Hidden Lake in North Cascades National Park.
- Cascade Pass: 3.7 mile trail at road's end leads to spectacular views, continues to Skagit Valley Road and Park Service shuttle bus (reservations required).

Colonial Creek Campground

- Campground on Diablo Lake: $10.
- Thunder Creek Trail: Begins at south end of campground. Connects with Thunder Woods Nature Loop. Leads to junction for Fourth of July/Panther Creek Trail. Steep climb leads 3.2 miles to Fourth of July Pass. Panther Creek Trail continues five miles northeast to State Route 20.
- Ross Dam Trailhead
  - Diablo and Ross Lake Overlooks
  - Ross Lake Resort: Floating cabins, boat rentals, portage service and water taxi. (360) 386-4437.
  - Ross Dam Trail: One mile descent to top of Ross Dam. Cross dam and hike west bank of Ross Lake to Big Beaver trail and backcountry camps.

Ross Dam Trailhead

- Diablo and Ross Lake Overlooks
  - Ross Lake Resort: Floating cabins, boat rentals, portage service and water taxi. (360) 386-4437.
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Car Camping in the North Cascades

There are many public campgrounds adjacent to the North Cascades Highway. Most sites are filled on a first-come, first-served basis. Private campgrounds and resorts may provide cabins and showers.

Free campgrounds are primitive, requiring that you bring your own water and pack out garbage. When a fee is charged, there are amenities such as running water and garbage facilities.
Mt. Baker National Recreation Area

The southern slopes of Mt. Baker lie within the Mt. Baker National Recreation Area (NRA). These 8,600 acres include part of Sherman Peak on Mt. Baker, two active glaciers, glacial moraines, alpine meadows and lakes, a cinder cone and miles of trails accessing landmarks such as Schriber's Meadows and the historic Park Butte Lookout in the neighboring Mt. Baker Wilderness.

No roads enter the Mt. Baker NRA. Day hikers and backpackers crowd the trails on summer weekends. The Easton glacier is a favorite climbing route up Mt. Baker. Horses and other stock use the trails from August 1 to Nov. 1. As summer fades, hunters and huckleberry pickers move in. In winter, the recreation area offers off-road snowmobiling. Nordic skiing, snowshoeing and ski mountaineering are also popular.

Congress established the Mt. Baker NRA in 1984 as part of the Washington State Wilderness Act. The NRA differs from the adjacent Mt. Baker Wilderness Area in allowing use of snowmobiles during the winter months. Groups entering the Wilderness Area must limit their number to 12 individuals (including pack and saddle animals). Hikers are urged to stay on designated trails and respect trail closure signs. Backpackers must camp at designated tent sites established for their use. All camps have composting toilets located near them. Water may be distant from the camp, so campers should be prepared to pack water and to treat or boil it to avoid illness.

Mt. Baker NRA Trails

Trails in the Mt. Baker NRA have been designed primarily for hiker and/or horse use. The use of motorized and mechanized equipment is strictly prohibited except when snow levels are sufficient and snowmobile use is permitted.

Park Butte Trail #603
This 3.5 mile trail passes through scenic Schriber's Meadow, crosses Rocky Creek on a suspension bridge or horse ford, switchbacks up a forested slope to Morovitz Meadow and ends at the historic Park Butte Lookout.

Scott Paul Trail #603.1
This six mile trail begins 100 feet up the Park Butte trail, providing an alternative hiker-only route into the Mt. Baker high country. Trail extension constructed in 1992 crosses terminal moraine on Squak Glacier, as well as the Railroad Grade, giving spectacular views of glaciation at work.

Railroad Grade Trail #603.2
This one mile trail leads off the Park Butte trail at two miles. Follows the edge of the Railroad Grade to High Camp.

Bell Pass Trail #603.3
This 4.5 mile trail connects the Park Butte trail and Railroad Grade trail with the Elbow Lake trail via Cathedral Pass, Mazama Park and Bell Pass.

Elbow Lake Trail #697
This nine mile trail begins at Pioneer Camp near the end of Forest Road #12 or at milepost 10 on the Middle Fork Nooksack Road, Forest Road #38. Does not enter the NRA but accesses trails that do.

Ridley Creek Trail #696
This four mile trail begins near the end of Forest Road #38, and ends in Mazama Park. Not maintained.

Mt. Baker NRA Designated Camp Sites

Railroad Camp
Seven sites located within the first half mile of Railroad Grade trail.

Cathedral Camp
Will be under construction during the '95 season. Campers may use these camps unless the crew is working in the area.

High Camp
Four sites located 1 1/2 miles up the Railroad Grade trail.

Mazama Park Horse Camp
Stock camp that will be under construction during the '95 season.

Some Tips for Hiking with Children

Bring along extra items such as:

- Wholesome snack foods
- Extra water
- Sunscreen
- Insect repellent

Some suggestions for keeping children entertained:

Sing songs, bird watch, identify plants, look for animal tracks.

Other helpful suggestions:

- Dress children in layers
- Young children should stay within sight
- Older children should stay within earshot
- Give them a whistle in case they get lost
Natural Resource Issues of the North Cascades

Resource management within North Cascades National Park Complex encompasses biological, cultural, historic, geologic, hydrologic, atmospheric, and aesthetic resources. The top natural resource issues are introduced and summarized here. Additional information can be found at visitor centers and from resource management personnel.

RARE, THREATENED, ENDANGERED, AND SENSITIVE MAMMALS

Some of the 75 mammal species indigenous to North Cascades have declined due to human-caused mortality and/or habitat loss or modification. The National Park Service is participating in interagency recovery efforts involving the federally-listed endangered gray wolf and the threatened grizzly bear. Other sensitive species include fisher, wolverine, and Townsend’s big-eared bat.

RARE, THREATENED, ENDANGERED, AND SENSITIVE BIRDS

Several of the 200 species of birds that either breed in or pass through the Complex are currently listed as threatened or endangered. These include peregrine falcon, bald eagle, marbled murrelet, and spotted owl. The National Park Service is participating in a cooperative monitoring project of bald eagle studies include breeding bird surveys, habitat and Townsend’s big-eared bat.

AIR POLLUTION IMPACTS ON BIOTA

The deterioration of pristine air quality in the Complex is likely due to prevailing west-erly winds carrying vehicle emissions and industrial and large urban area pollutants from the Puget Sound vicinity. There are weather stations at several locations in the Complex. Eight parameters including Ozone and acid precipitation are being studied. Visibility cameras have recorded the presence of airborne particulate matter.

Watershed Analysis — Part of the President’s Forest Plan

Issues covered by the President’s Forest Plan pass beyond the boundaries of National Forests. Several federal agencies are directly involved, including the U.S. Forest Service, Bureau of Land Management, and National Park Service.

Among other things, the President’s Forest Plan directs the Forest Service to complete a process called watershed analysis before many activities can proceed. Watershed analysis is one part of an “Aquatic Conservation Strategy”, developed to restore and maintain the ecological health of whole watersheds and aquatic ecosystems on public lands. Most activities, from watershed restoration to trail building to timber harvest, cannot move forward until the process is complete. Proposed actions must be consistent with ecosystem management objectives and other President’s Forest Plan guidelines.

Watershed analysis involves the inventory and analysis of all the information that is known about a watershed. It also considers past and present use by people, and the effects of past and current management. The intent is to develop and document a scientifically based understanding of the processes and interactions occurring within a watershed. This understanding is essential for making sound management decisions. Watershed analysis is an ongoing process that will serve as the basis for developing project proposals and determining restoration and monitoring needs. Watershed analyses will be expanded and updated as needed to consider additional information or changing conditions.

Public involvement is also important. An awareness of the full range of values, resource needs, and public expectations associated with the watersheds being analyzed is fundamental. We encourage you to participate in this process.

Watershed analysis has been completed or is currently underway for several watersheds on the Mt. Baker-Snoqualmie National Forest. If you have questions, or are interested in knowing more about watershed analysis or other aspects of the President’s Forest Plan, call Forest headquarters (206) 775-9702 or the Mt. Baker Ranger District (360) 856-5700.

Karen Nolan, USFS
Environmental Coordinator

FISHERIES: RIVERS & LAKES

The 11 known species of native fish in the west slope’s rivers and tributaries have been impacted by agriculture, urbanization, hydropower development, logging and past fish stocking and harvest practices. In order to mitigate for loss of spawning and rearing habitat, Washington Dept. of Fish & Wildlife constructed a salmon spawning channel (Park Slough) adjacent to the Skagit River cooperatively with the National Park Service. Park biologists monitor the returns in Park Slough and are finding that native populations of chum and coho salmon are being increased by this and similar channels. Park staff has also monitored selected streams to determine water quality, temperature, flow, gradient, and resident salmonid populations.

The native fish species of the lower Stehekin River and of Lakes Chelan and Stehekin have been severely impacted by hydropower operations, natural catastrophic flooding and introduction of non-native aquatic species. The native sport fish included Lake Chelan cutthroat trout and bull trout. However, bull trout may be extinct in Lake Chelan and the Stehekin River.

DEGRADATION OF NATURAL RESOURCES

Increased development and population growth in the Pacific Northwest increase the potential for degradation of natural resources. Activities that threaten natural resources include air pollution, overflights, acid precipitation, fish stocking, water pollution, hunting, mining, and administrative actions. Baseline information is necessary to detect resource threats, trends, impacts and associated causes.

MANAGEMENT OF NATURAL LAKES & HERPETOLOGICAL POPULATIONS

Researchers are investigating the ecological impacts of stocked trout on naturally fishless lakes. The Complex has about 245 natural lakes, ponds, and tarns, ranging from small, shallow ponds to relatively large, deep alpine lakes. Most of the natural high lakes were devoid of fish life because of natural barriers to fish migration. Currently over 75 high lakes support introduced populations of rainbow, cutthroat, brook and golden trout. Salmon species were the dominant, naturally-occurring aquatic vertebrate predator in the high lakes prior to stocking.

A multi-year study is examining the effects of fish introductions on native fish communities. If salmon species are absent from lakes with fish, biologists need to know if this is because of fish predation or lack of suitable habitat and environmental conditions.

In Washington, the spotted frog (candidate species for threatened and endangered status) has declined west of the Cascade Mountains. NPS research focuses on determining the abundance and distribution of amphibians and reptiles within the Complex.

OTHER RESOURCE MANAGEMENT ISSUES IN THE PARK:

Ungulate Ecology and Management
Rare, Threatened, and Endangered Plants
Sediment and Erosion Control
Geology, Landform, and Soil Mapping
Management of Exotic Plants
Wildland Management
Wetland Management
Skagit River Management (Recreational Use)
Stelhekin Firewood/Natural Fire Management
Vegetation Impact Monitoring, Rehabilitation
Glacier Monitoring for Climate Change
Vegetation Response to Climate Change

Karen Nolan, USFS
Environmental Coordinator
The Skagit River: Truly Wild & Scenic

The Skagit Wild & Scenic River System (W&SR) includes segments of the Sauk, Suiattle, Cascade and Skagit Rivers. Remarkable fisheries, wildlife, and scenic qualities led to their inclusion in the Federal Wild and Scenic Rivers System in 1978, 10 years after the federal system's establishment.

This congressional designation requires that federal land be managed to protect the W&SR. State and private lands within the W&SR are influenced by various state and local regulations. Forest Service staff help assure that W&SR values are being protected through participation in the Timber, Fish and Wildlife (TFW) process sponsored by the Washington Department of Natural Resources (DNR).

The Forest Service also acquires land from willing sellers to protect river values and provide access. Since 1978, more than 2,000 acres have been added as public land. A number of partners have been utilized in this endeavor, including River Network, The Nature Conservancy, the Skagit Systems Cooperative (represents Upper Skagit, Sauk-Suiattle, and Swinomish Tribes), and state agencies.

Watershed restoration projects on federal lands within the Skagit Basin began in the summer and fall of 1994. Additionally, the State's Department of Ecology and DNR initiated "Jobs for the Environment", a watershed restoration effort for state and private lands in the Skagit Basin. Improved water quality and fish habitat enhancement are key to the future health of the river system.

Sharing the Skagit: The Skagit Watershed Education Project

"I learned that a watershed isn't just water, it's the mountains and the things that are surrounding the water. We have to take care of the land and the water together." -4th grade student, Mt. Vernon

The Skagit Watershed Education Project (SWEP) reflects the river from which it draws its lessons. Currently finishing its third year, SWEP teaches students to think of their own backyard as part of a larger picture.

Each school year, the North Cascades Institute leads 1200 third through fifth grade students, and 60 teachers, from the seven school districts within the watershed, in classroom and field trip activities. These focus on geography, land use, riparian ecosystems, non-point pollution prevention, and stream restoration and ecology.

SWEP grew out of a need for locally relevant educational materials for educators. Although the Skagit watershed is the second largest watershed in the state, providing one-third of all the fresh water and salmon to Puget Sound, educational materials relating to this northwest treasure were scarce. Development of the Sharing the Skagit curriculum guide, maps, slide shows, and a student activity guide were important first steps in making essential background information available to students and teachers.

SWEP teaches students to think of their own backyard as part of a larger picture. SWEP facilitates this community-based education through partnerships with agencies, businesses, private land owners, and non-profit groups active in the local community. By encouraging community members to participate in a well coordinated educational effort, a cooperative atmosphere is created toward the common goal of providing a well educated, and well grounded, future citizenry.

As one fourth grader put it, "The best thing was that I got to learn about my favorite place." SWEP establishes an important environmental ethic in students: that ecological literacy begins in your own backyard.

-Theatrice Johannessen, NCI

Winter on the Skagit River has a special kind of magic—the magic of salmon returning from the ocean to spawn and die, followed by the return of one of the largest populations of wintering bald eagles in the Pacific NW. These magnificent birds frequent the river each year to feed on chum salmon. And so the cycle of life continues.

For the past two winter seasons "Eagle Watcher" volunteers have staked four sites along the Skagit between Rockport and Marblemount. This enthusiastic cadre of people help manage visitor use along the river by distributing handouts about eagle watching etiquette, monitoring spotting scopes for viewing and sharing a reference tub of eagle photos and ecology information with other interested folks.

This program is sponsored by the Forest Service and North Cascades Institute. Anyone interested in participating during the 1995/96 season should feel free to contact Jim Chu, Mt. Baker Ranger District or Wendy Scherrer, North Cascades Institute at (360) 856-5700.

Earth Watchers

"I learned so much about myself and that no matter what, I'll always be a part of nature. We need the sun, the moon, the stars..."

-Mountain School student, 5th grade

After three days and two nights camping, hiking, living, and learning together at Mountain School, quotes like this are common. Fifth to seventh grade classes, accompanied by their teacher and parent chaperones, have participated in this award-winning environmental education program each spring and fall since 1990.

Developed and operated by the North Cascades Institute, Mountain School invites students to North Cascades National Park to learn about life. Mountain, forest, and river ecosystems, plantlife and wildlife, human cultures in nature, as well as cooperative living skills fill their days with experiences they will never forget.

The camping-based program focuses on hands-on learning activities and hikes, weaving the interdisciplinary threads of science, music, art, history, and social studies into the fabric of environmental education. Each day is focused and sequential, with respect to the land, and each other, an underlying theme.

Children are encouraged to transfer the lessons learned from nature to their own lives back home. Parents and teachers enthusiastically agree on its value. As Dick Simpson, Burlington-Edison Elementary school teacher exclaimed, "Mountain School is one of the most important experiences my students will have in their entire school careers!"

-Christie L. Fairchild, NCI
Respecting the Grizzly Bear

For thousands of years grizzly bears have roamed the mountains and valleys of northwest Washington, "living the quiet life that all Bears prefer, minding their own business, doing their duty by their families, asking no favors of anyone excepting to let them alone" (E.T. Seton).

Indians told several different tales about the bears. The stories speak of a deep reverence for the animal. Many tribes believed grizzly bears had once been tribal women, or that bears were otherwise kindred spirits. These tales and beliefs were rooted in many centuries of coexistence with grizzly bears, and an understanding that they and the bears had a great deal in common.

Bears, like people, are highly intelligent, long-lived creatures with individual personalities. Grizzly bears care for and teach their young for almost as great a part of their total lifetime as do most human cultures. Bears like to swim and play. Although we cannot know for sure why bears sometimes sit gazing at the landscape for long stretches of time, they seem to be enjoying the scenery. Bears and people also share the top of the food chain. Both need a variety of foods to survive. As species relying on most of the surrounding ecosystem for survival, bears and people occupy the same ecological "niche".

The spiritual tie between bears and people continues today. To many, the grizzly bear represents the last great symbol of the wilderness. Part of this relates to the wild spaces bears need for survival. The other part is less tangible: the humbling electricity of watching a bear lift a boulder to look for ants, or run with agile, lightning speed across a meadow, or simply knowing one can share wild and beautiful places with an animal that chooses not to be tamed.

The North Cascades grizzly bears are not threatened because of lack of habitat. Large areas of our ecosystem are still suitable for bears. Grizzly bears are adaptable to changes in their world; however, they cannot adapt to bullet shots. Trapping records indicate that 3,800 grizzly bear pelts had been taken from the North Cascades before 1859. Many more were killed by settlers, miners and others who often killed them on sight. Despite the fear of bears in popular culture, whether or not bears were otherwise kindred spirits.

The Munch on Mountain Goats

Mountain goats (Oreamnos americanus) are native to Alaska, the Cascade Mountains of Washington State, and a few other areas in the lower 48 states. Much of Washington's mountain goat habitat is on federally managed land (national parks and forests).

Mountain goats are specialized in their hoof and body shape so that they can be the most successful travelers on the cliffs where few predators will follow. To survive in such a specialized habitat, however, they are generalist herbivores who are able to eat most plants, including lichens, mosses, and conifers. They live at a variety of elevations, near different forest types, but always near cliffs.

In western Washington, mountain goats summer above 5,000 feet (1,500 m) elevation, near cliffs, snowfields, and wind. They are most often observed in meadows, dustbaths, and on bare rock benches. Typical mountain goat winter range is in lower-elevation, south-facing old growth forests that are interspersed with rocky outcrops. Because the best wintering areas are selected for their physical characteristics, and not for the availability of forage, food may be scarce.

A mountain goat's typical day includes morning foraging, bedding during mid-day and then a prolonged feeding period in late afternoon to evening. The timing and length of these periods seems to depend on weather and temperature. During hot summer days, afternoon bedding may continue until foraging areas become shaded; goats may then forage until well after dark, particularly if the moon is full.

Winter activity patterns are similar, but due to colder weather and shorter periods of daylight, foraging may be longer and bedding periods shorter during the day.

Male and female mountain goats look similar, with shaggy white coats and curved black horns. They live in loose family groups of several adult females (nannies), with their kids and yearlings. Adult males (billes) may be tolerated in the summer, when food is plentiful, and during the autumn mating season. However, during the harsh winter months, the dominant nannies get the best wintering areas.

Because of their life history characteristics, mountain goats are more vulnerable to population reductions than most ungulate species; it's harder for them to bounce back. Human presence can adversely affect mountain goats by causing them to use energy they would otherwise use to survive. Please keep a polite distance from any mountain goats you see and then come tell us about your experience!

-Anne Braaten, NPS Natural Resource Specialist

-Visiting Bear Country

Bears do not naturally associate people with food, but they are opportunistic feeders.

Bears drawn to campsites by the smell of food or garbage in a fire pit may learn that campgrounds provide easy meals. Once accustomed to human food, a bear may seek it aggressively. You can prevent unwanted encounters by following basic precautions of proper food storage and camp cleanliness.

Cooking

When you camp, try to have your sleeping area and personal gear about 100 yards (90 m) uphill or upwind from your cooking area. Wash dishes after a meal. Keep soap out of lakes and streams. At campgrounds, collect all grey water from cooking and washing in a bucket and deposit it in septic or vault facilities. Do not sleep in the clothing you wore while cooking. Keep sleeping gear and personal items free of food odors.

Camping

Choose another camping area if you see a large dead animal. Notify a ranger as soon as possible. Be alert!

Dogs

Loose dogs disturb wildlife and may lead bears back to you. Prevent these unwanted encounters; keep dogs on a leash. Dogs are prohibited in the National Park.

Food Storage

Store food, garbage, cooking gear, and cosmetics properly at all times. Lock these items in your car trunk if you are in the frontcountry. Otherwise, place them in a bag or backpack and hang it from a branch in your cooking area. The storage container should hang at least 10 feet (3 m) above the ground and at least four feet (1.2 m) out from the tree trunk. Also hang cosmetics, sunscreen, soap, toothpaste or any item with a fragrant or food-like odor. Plastic coated dry bugs are good for food hanging since they are not eaten by bears. Bear resistant canisters are available commercially and will also keep rodents out.

Garbage

Pack it out. Never bury or burn garbage. Store it as if it were food.

Hunting and Fishing

Where hunting is permitted, store game meat the same as food. Dispose of fish entrails by puncturing the air bladder and dropping it in deep water to allow natural decomposition.

Horse

Store horse pellets the same as your food.

Bear Sightings

If a bear comes close to your campsite you may be able to frighten it away by shouting or banging pots and pans. A bear accustomed to campground food may not be as easily discouraged. If you see a bear, report your sightings to agency biologists at (360) 856-5700, or the nearest ranger station.

The North Cascades grizzly bears are not threatened because of lack of habitat. Large areas of our ecosystem are still suitable for bears. Grizzly bears are adaptable to changes in their world; however, they cannot adapt to bullet shots. Trapping records indicate that 3,800 grizzly bear pelts had been taken from the North Cascades before 1859. Many more were killed by settlers, miners and others who often killed them on sight. Despite the fear of bears in popular culture, whether or not grizzly bears continue to exist is clearly a human choice. Bears are strong, adaptable and smart -- but they are not the most 'dangerous' animal in the wilderness. Human beings play that role.

Over the next several decades federal and state agencies in the North Cascades will work to increase the now perilously small grizzly bear population to a healthier level. Conserving the grizzly bear will help conserve many other species of wildlife and plants as well. All these things are the same from the earth, including solitude, space and many renewable resources, conservation of the bears will help conserve for our future, too.

-Sarah J. Welch, NPS

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Wildlife Observations

Scientists and managers from several agencies are engaged in a wide variety of field studies on wildlife management issues. These topics include neotropical migrant bird surveys, endangered species monitoring, and baseline inventories of bats, salamanders, and other faunal species. Wildlife sightings reports by the public provide valuable supplemental data to these studies.

Sightings can be recorded on “Wildlife Observation Cards” (see example for your use). We encourage you to submit wildlife cards on any species. Of particular interest are sightings of:

**Birds:**
- Common Loon
- Harlequin Duck
- Northern Goshawk
- All owls
- Peregrine Falcon

**Mammals:**
- Fisher
- Gray Wolf
- Grizzly Bear
- Wolverine

**Amphibians:**
- All salamanders
- All frogs

Many of these species are on the Endangered Species List. Biologists may perform follow-up visits to confirm sightings and collect additional data. Please include your telephone number on the card. We appreciate your assistance in providing valuable observational information of wildlife species in the North Cascades.

Boulder/Butte Fires Ignite Partnerships

For several weeks last summer in Lake Chelan National Recreation Area, Stehekin Valley rangers and residents gathered almost nightly at the Buckner Orchard to watch the progress of the Boulder/Butte fires on the hillsides above. They speculated on how far the lightning-caused fires would spread.

Would the firefighters be successful? Would fire reach the homes on the valley floor?

In the evenings fires blazed vividly against the dark sky. During the day, while thick smoke filled the air from fires above, rangers and residents inspected home settings and removed brush and other fuels that could jeopardize structures. Rangers developed a “Pony Express” system to contact residences without phones in the event of an emergency. Residents assisted the Park personnel in an “Adopt a Pump” program. Each day, nine pumps were checked and tested.

Meanwhile, Park and Forest Service firefighters combined their efforts to contain fires, not only on the slopes above Stehekin, but also on neighboring Forest Service lands. The fires merged and spread without regard to agency boundaries. Firefighting techniques had to be carefully chosen to protect the safety of firefighters in the rugged terrain and to minimize impact on the wilderness forest. In many areas the fire was contained by an aerial attack, using helicopters and water drops, creating a wet line that tied together natural barriers, such as cliffs and scree slopes.

Within those limits, the fires zigzagged up and down the slopes. A rolling ember would ignite brush below, sending fire in a diagonal run along a new slope. In places fires burned very hot and torched tree tops, while in other areas fires only lightly burned the ground and left green branches above. A mosaic was created, similar to natural mosaics caused by fire for millennia.

Ultimately, the Boulder/Butte fires covered 4,000 acres. Firefighters were successful in keeping the fire from reaching the valley floor and no homes were burned. Most importantly, the firefighters escaped serious injury.

A rehabilitation program immediately followed the fires. Fireline was filled in, cut stumps were recut low to the ground and covered with brush, and a monitoring program was initiated to detect invasion of non-native plants or deterioration of water quality.

Within the Boulder/Butte Fires Ignite Partnerships, firefighting, benefitted greatly from these partnerships. What else resulted from 1994’s emergency fire experience? We gained greater appreciation for the strength of partnerships. During a summer when firefighting resources were stretched to their limit, the Park Service, Forest Service and the people of Stehekin Valley combined efforts, resources and expertise in the protection of the valley. The people of the valley and the natural resource, which suffered a minimum of impact from firefighting, benefitted greatly from these alliances.

Helping Hand Extended to North Cascades N.P.

History is being made in Washington State. The Mount Rainier, North Cascades & Olympic Fund is a friends group established to support National Parks in the northwest. This spring, with the addition of North Cascades National Park, the Fund will proudly represent and aid all three National Parks in Washington.

For the citizens of Washington State, the Mount Rainier, North Cascades, and Olympic National Parks are uniquely beautiful public sanctuaries. Preserved as national treasures, these Parks draw millions of visitors from all over the world and offer a personal connection with a natural wonderland. Unfortunately, their very popularity has placed these Parks in jeopardy. Since 1983, Washington’s National Parks have struggled with increasingly tight budgets.

The Fund was founded in March of 1993 to unite and lead a private, independent conservation effort to support and enhance the Mount Rainier and Olympic National Parks. With the addition of North Cascades NP, this non-profit organization will continue its mission to support Park Service goals of preservation and protection. Expanding upon these goals, the Fund tries to ensure that each visitor has a high quality, memorable experience through sponsoring educational projects, trail improvements, vegetation restoration, vegetation theft prevention, wildlife projects, and fisheries projects.

The Mount Rainier, North Cascades & Olympic Fund works with corporations, foundations, businesses, and individuals to secure needed financial contributions. Volunteers support the Fund and administer projects suggested by Park Superintendents. If future visitors to our great National Parks are going to experience the beauty and diversity that originally set Mount Rainier, North Cascades, and Olympic apart, we must actively work together for their restoration and protection today. For more information on how you can help give nature a helping hand, call (206) 621-6565 or, look for the Fund’s brochure in any of the visitor centers located at all three Washington National Parks.

Jan Gibson
The Mount Rainier, North Cascades & Olympic Fund

North Cascades Challenger

Editor: Barbara A. Borst, Intern, Huxley College, WWU
Production Coordinator: Cindy Bjorklund, NPS
Maps: Cathie Mehler, USFS
Ruth Wooding-Raymer, NPS
Articles and graphics by National Park, Forest Service and NCI Staff
Printed by: Snohomish Publishing

Boulder/Butte Fires Ignite Partnerships

For several weeks last summer in Lake Chelan National Recreation Area, Stehekin Valley rangers and residents gathered almost nightly at the Buckner Orchard to watch the progress of the Boulder/Butte fires on the hillsides above. They speculated on how far the lightning-caused fires would spread.

Would the firefighters be successful? Would fire reach the homes on the valley floor?

In the evenings fires blazed vividly against the dark sky. During the day, while thick smoke filled the air from fires above, rangers and residents inspected home settings and removed brush and other fuels that could jeopardize structures. Rangers developed a "Pony Express" system to contact residences without phones in the event of an emergency. Residents assisted the Park personnel in an "Adopt a Pump" program. Each day, nine pumps were checked and tested.

Meanwhile, Park and Forest Service firefighters combined their efforts to contain fires, not only on the slopes above Stehekin, but also on neighboring Forest Service lands. The fires merged and spread without regard to agency boundaries. Firefighting techniques had to be carefully chosen to protect the safety of firefighters in the rugged terrain and to minimize impact on the wilderness forest. In many areas the fire was contained by an aerial attack, using helicopters and water drops, creating a wet line that tied together natural barriers, such as cliffs and scree slopes.

Within those limits, the fires zigzagged up and down the slopes. A rolling ember would ignite brush below, sending fire in a diagonal run along a new slope. In places fires burned very hot and torched tree tops, while in other areas fires only lightly burned the ground and left green branches above. A mosaic was created, similar to natural mosaics caused by fire for millennia.

Ultimately, the Boulder/Butte fires covered 4,000 acres. Firefighters were successful in keeping the fire from reaching the valley floor and no homes were burned. Most importantly, the firefighters escaped serious injury.

A rehabilitation program immediately followed the fires. Fireline was filled in, cut stumps were recut low to the ground and covered with brush, and a monitoring program was initiated to detect invasion of non-native plants or deterioration of water quality.

What else resulted from 1994's emergency fire experience? We gained greater appreciation for the strength of partnerships. During a summer when firefighting resources were stretched to their limit, the Park Service, Forest Service and the people of Stehekin Valley combined efforts, resources and expertise in the protection of the valley. The people of the valley and the natural resource, which suffered a minimum of impact from firefighting, benefitted greatly from these alliances. In the forest mosaic on the slopes above Stehekin, new shoots began to sprout, even before the last embers were out.

-Janet Kailin, NPS Fire Mgmt. Officer

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Popular Trails
Featuring 30 trails in the North Cascades National Park & Ross Lake National Recreation Area. The descriptions were written by park staff people who have hiked the trails and know them with their "back": $3.25

100 Hikes in the North Cascades

Wilderness Basics—The Complete Handbook for Hikers & Backcountry Travelers
Compendium of everything you need to know for backcountry travel. Sierra Club's authors give good advice for staying warm, feeding comfort and oriented in the wilderness. 240p. $14.95

Selected Climbs in the Cascades
Detailed approach and route descriptions of 36climbs of all skill levels. Info on permit requirements, trail maps, photos, first ascents, equipment and areas of caution. 232p. Nelson & Potterfield $22.95

Best Short Hikes in Washington's North Cascades & San Juan Islands
The short hikes in the book present 104 of the easiest and quickest ways to sample the spectacular landscape of the Northwest. Trail length, difficulty ratings (from easy to most challenging), driving directions and detailed trail profiles, accompanied by maps and photos. 240p. E.M. Selig $12.95

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Includes the wilderness and roadless areas, with the state's national parks, over 100 trails described and mapped, and details on climate, plants and wildlife, geology and history. Each area's size, predominant land use and management, 352p. Barg & Ted Muller $14.95

Best Hikes with Children in Western Washington & the Cascades, Volumes 1 & 2
Great for those who share their love of the outdoors with children. Over 100 hikes detailed that appeal to the under 12 set and their parents. 252. 62 new hikes in volume 2. For more fun and easy trips. 239p. Joan Burton $12.95 each volume.

How to Shit in the Woods
The book is an essential companion for the backcountry hiker. Lively, well-researched and entertaining explanations of why and how to do it. Weather and wheelchair accessibility. 77p. Kathleen Myers $5.95

Plastic Trowel
This is a necessity for any outdoors person and is a wonderful companion to the above book by Kathleen Myers $1.50

Hiking

Natural History Guides
Washington Wildlife Viewing Guide
Complete guide to ninety premier wildlife viewing areas. Includes full description of trails accessible from the highway. 64p. Danville $1.95

Washington National Forests
Comprehensive introduction to the diversity of the National Forests in Washington State that covers over nine million acres, 7,000 miles of hiking and riding trails, 500 campgrounds, and 23 wilderness areas. 128p. Woody Walter $9.95

Mount Baker- Snoqualmie National Forest
Introduction to this forest that traverses the east slopes of the Cascade Range for 130 miles between the Canadian-border and Mount Rainier Ranger Stations. 20p. $2.95

North Cascades Highway Guide
Guide to the features along the North Cascades Highway. Keyed to interpreters. Excellent description of trial accessible from the highway. 64p. Danville $1.95

Washington National Parks
Comprehensive introduction to the diversity of the National Parks in Washington State. 459p. National Park Foundation $19.95

Mount Rainier National Park

North Cascades USGS Guides
100,000-scale topographic map of North Cascades National Park & Ross Lake & Ross Lake National Recreation Areas. Folded in plastic case. $4.00

Trails Illustrated: North Cascades
Waterproof, tearproof. Includes Mt. Baker and Pasayten Wilderness, as well as North Cascades N.P. Features trails and backcountry campsite locations. $8.95

Trails Illustrated: Mount Rainier and Trails Illustrated: Olympic National Park
Both available for $9.90 each (please specify which of the three titles you want on the order form.) USDA Forest Service Maps Trail and road maps include: Mt. Baker-Snoqualmie NF, Wenatchee NF, Chelan NF, Pacific Crest Trail North & PCT South. Washington, Whidbey Island NF, Colville NF, Olympic NF, Darrington Ranger District, Pasayten or Lake Chelan Wilderness Areas. $3.95 each. Gnarly Peak Wilderness $7.95 each.

Posters
Panoramic of the North Cascades
An artists magnificent perception of the North Cascades with beloved personal Heirloom Items. 30" x 20" includes mailing tube. $7.45

The Alpine Northwest
A colorful, stylized presentation of the animals, plants and landscape features of the fascinating alpine and sub-alpine zones of the Pacific Northwest. 20" x 39" Includes mailing tube. $16.45

Panoramic View from Sahale Mountain
Panoramic view of North Cascades from Sahale Mountain out of Mount Rainier Nat. Park. In color, 70" x 14 1/2" includes mailing tube. $15.10

Autumn colors contrast with snow covered Mt. Baker. 18" x 24" Includes mailing tube. $4.45

Videotapes
Cascade Loop
The Cascade Loop is the best of Washington State, from craggy snowcapped mountain peaks to sunny Puget Sound beaches & the mighty Columbia River to the towering waters of Ross Lake. VHS only. 50 min. $19.95

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A colorful, stylized presentation of the animals, plants and landscape features of the fascinating alpine and sub-alpine zones of the Pacific Northwest. 30" x 39" Includes mailing tube. $16.45

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Washington Parks & Forests
A sampling of the beauty & diversity of Washington State. Includes Mt. St. Helens, Mt. Rainier, Mt. Adams, Columbia River, North Cascades, the Olympics. 29" x 41" includes mailing tube. $22.95

Washington Atlas & Gazetteer
Topographic maps of the entire state, including back roads and detailed outdoor recreation information. 120p. Deluxe Mapping Company $16.95

North Cascades USGS Guides
100,000-scale topographic maps of North Cascades National Park & Ross Lake & Ross Lake National Recreation Areas. Folded in plastic case. $4.00

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Park & Forest Information Stations

Cascade Loop—Summer Hours

North Cascades National Park; Mt. Baker Ranger District; Mt. Baker-Snoqualmie National Forest

SEDRO WOOLLEY
2105 State Route 20, 98284
Sat. - Thurs., 8:00am-4:30pm
Fri., 8:00am-6:00pm
(360) 856-5700

MARBLEMOUNT
Skagit District/Wilderness District
Ross Lake National Recreation Area (NPS)
Backcountry Information/Permits
*Fri. - Sun., 7:00am-8:00pm
Mon. - Thurs., 7:00am-6:00pm
(360) 873-4590 (ext. 37 or 39)

NEWHALEM
North Cascades Visitor Center (NPS)
*Morn. - Fri., 8:30am-6:00pm
*Sat. & Sun., 8:00am-7:00pm
(206) 386-4495

STEHEKIN
Lake Chelan National Recreation Area (NPS)
Golden West Visitor Center
Daily, 8:00am-4:30pm
(360) 856-5703 ext. 14

* July & August

Okanogan National Forest; Methow Valley Ranger District
EARLY WINTERS
Daily, 9:00am-5:00pm (509) 996-2534

WINthrop Office
Mon. - Fri., 7:45am-5:00pm (509) 996-2266
Sat., 9:00am-5:00pm (Methow Valley VC) (509) 996-3194

TWISP Office
Mon. - Fri., 7:45am-5:00pm
Sat., 8:00am-5:00pm; Closed Sunday (509) 997-2131

Wenatchee National Forest
CHELAN Ranger District
Lake Chelan National Recreation Area
Daily, 7:45am-4:30pm
(509) 682-2576 (USFS)
(509) 682-2549 (NPS)

LEAVENWORTH Ranger District
Daily, 7:45am-4:30pm
(509) 782-1413

LAKE WENATCHEE Ranger District
Mon. - Sat., 8:00am-4:30pm; Closed Sun. (509) 763-3103

Mt. Baker-Snoqualmie National Forest
1-800-637-0062 or TDD 1-800-272-1215

GLACIER PUBLIC SERVICE CENTER
Daily, 8:30am-4:30pm (360) 599-2714

HEATHER MEADOWS Visitor Center
*Daily, 10:00am-5:00pm

DARRINGTON Ranger District
Daily, 8:00am-4:30pm (360) 436-1155

VERLOT (Darrington Ranger District)
Daily 8:00am-4:30pm (360) 691-7791

SKYKOMISH Ranger District
Daily, 8:00am-4:30pm
(360) 677-2414 or (206) 744-3260

NORTH BEND Ranger District
Mon. - Fri., 8:00am-4:30pm (206) 888-1421

SNOQUALMIE PASS Visitor Center
Thurs. - Sun., 8:30am-4:45pm
(206) 434-6111

WHITE RIVER Ranger District
& Mt. Rainier National Park
Mon. - Fri., 8:00am-4:30pm
Sat., 8:00am-3:30pm
(360) 825-6585