



Bugler

Making Connections...



How does one of the most intriguing stories of old-growth forest connections unite flying squirrels, spotted owls and truffles? Flying squirrels, usually arboreal and hidden from predators, glide down to the forest floor to dig for fragrant truffles. The spores from these underground fungi mix with nitrogen-fixing bacteria and yeasts in the squirrel's stomach, creating crucial nutritious pellets for trees and spreading the spores of the fungi.

Furthermore, the tiny roots of these truffles interconnect huge old-growth roots. In a mutually beneficial relationship, the fungi stimulate tree root growth and the trees feed sugars and amino acids to the fungi. Through this underground network, the trees exchange nutrients among themselves, which essentially creates one grand old-growth tree.

With the attention of the flying squirrel still focused on truffles, the keen-eyed spotted owl maneuvers its short wings through the multi-layered canopy. In an instant, the nocturnal owl's sharp talons close around one of its main food sources. With this capture, age-old cycles critical to old-growth health continue.

Threatened and secretive, marbled murrelets spell out the interdependence between Olympic's ecosystems. Cruising from their nests deep within the temperate rain forest, murrelet parents fly up to 70 miles to sea and back several times a day to fill their single chick with fish. Until the fledgling takes to wing, its diminutive parents, playfully dubbed "flying potatoes" by a researcher, defy aerodynamics to continue this daunting task.

Further connecting the forest to sea, coho salmon begin their lives in rivers, then swim to the ocean to feed on crab larvae, shrimp and herring. If the juvenile fish are not caught by a kingfisher, blue heron or river otter during their first year in rivers and streams, these anadromous fish migrate to sea where they are eaten by seals, sea lions or even an orca. After years in the Pacific, salmon return to their natal waters to spawn. Even in death, they connect with life. Salmon carcasses provide food for black bears, bald eagles and the roots of forest trees.



Salmon were so abundant one could cross swift waters on their backs.

Young students visit "classroom Olympic." Ranger Greg share's an elder's remembrance that "Salmon were so abundant one could cross swift waters on their backs." The students also discover that Native Americans lived along the coast in longhouses and traveled to the mountains during summer, and peninsula pioneers weathered the weather on forested homesteads. Recalling, relating to and respecting the past.

A couple stands enraptured, gazing from Hurricane Ridge at the magnificence of wilderness. On this wintry morning, caps of ice cover the mountaintops, caps of wool cover their heads. Half a century ago, when they honeymooned here, their eyes met the same views. They revisit their youth and renew their bonds, with each other and with the land. Continuity and connections.

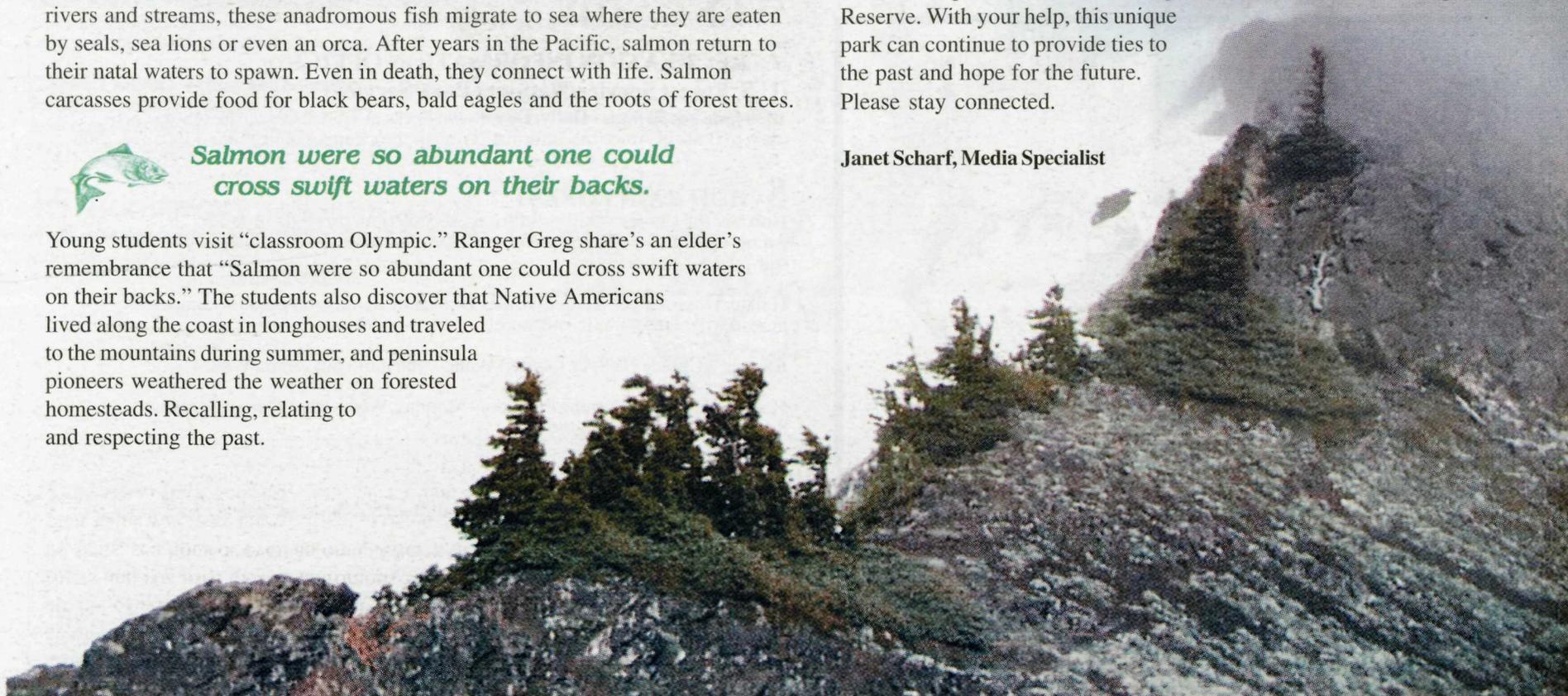
They revisit their youth and renew their bonds, with each other and with the land.

Just for a moment, during your trip to Olympic National Park, while standing beneath the glory of the mountains or amid the grandeur of evergreens, stop. Think of an intriguing natural or cultural feature that you encountered during your visit. Perhaps you touched the fibrous bark of a western redcedar tree or you were touched by the crisp evening breeze that sweeps across 5,000-foot valleys. Did you listen to a Roosevelt elk's bugle, watch a wobbly hermit crab in a reflective tide pool or view a woven cedar basket?

Whatever wonder you experienced, look more deeply. What is it connected to? Where does it live? Who eats it? What are its ties to Native American or pioneer history? Does it refresh your spirit? How does it fit into the family of things? What is *your* special connection to this wild place?

Olympic National Park protects a rare and revered wilderness. From spotted owls to shimmering coho, its magic captures global awe and respect as a World Heritage Site and International Biosphere Reserve. With your help, this unique park can continue to provide ties to the past and hope for the future. Please stay connected.

Janet Scharf, Media Specialist



Educational Programs

Please check park bulletin boards or visitor centers for additional programs or schedule changes.

NORTH SIDE

1 - OLYMPIC NATIONAL PARK VISITOR CENTER - Port Angeles

Visitor Center - 8:30 a.m. - 5:30 p.m. - Daily. Information, exhibits, Discovery Room, slide program, maps, books, nature trails. Phone (360) 565-3130 or tune to 530 on your AM dial. For 24-hour recorded park information phone (360) 565-3131.

2 - HEART O' THE HILLS

Evening Program - Nightly
9:00 p.m. - June 29 through August 10
8:30 p.m. - August 11 through September 1
Heart O' the Hills Campground amphitheater. Check local bulletin boards for topics.

Family Forest Activities - One hour of interactive fun at Heart O' the Hills Campground. Offered intermittently on Saturday or Sunday mornings. Dates and times posted on local bulletin boards.

3 - HURRICANE RIDGE

Hurricane Ridge Visitor Center - 10:00 a.m. - 5:00 p.m. - Daily - Information, exhibits, auditorium program.

11:00 a.m. - Daily - Either a one-hour walk or a 20-minute talk (check bulletin boards).

2:00 p.m. - Daily - Meadow Exploration - One-hour guided walk about mountain life.

4:00 p.m. - Daily - Join a ranger for a 20-minute talk highlighting Hurricane Ridge and various other park topics.

A WILDERNESS PORTAL

Join a ranger to learn more about the 95% of the park that is designated the Olympic Wilderness. Programs will be offered weekends in the Hurricane, Elwha and Sol Duc areas. Please check local bulletin boards.



4 - ELWHA

Ranger Station open intermittently. Madison Falls trail begins near Elwha Entrance Station.

5 - LAKE CRESCENT

Storm King Ranger Station - 9:00 a.m. - 5:00 p.m. - Daily.
Information, maps, publications.

Marymere Falls Walk - 2:00 p.m. - Daily from Storm King Ranger Station.
Join the 0.9 mile (one-way) one-hour stroll to Marymere Falls. First 0.5 mile is accessible and last part of trail is steep.

Lake Crescent Lodge Campfire Talk - Monday, Wednesday, Friday, Saturday
8:30 p.m. June 29 - August 10
8:00 p.m. August 12 - August 31
Campfire circle just northeast of Lake Crescent Lodge. Topics vary.

Log Cabin Campfire Talk - 8:00 p.m. - Sunday, Tuesday, Thursday, Saturday
Log Cabin campfire circle. Lake Crescent and other park topics.

Family Forest Activities - Fairholm Campground - 9:30 a.m.
July 5 - September 1 - Saturday and Sunday. Meet at the amphitheater for one hour of interactive fun.

6 - SOL DUC

Eagle Ranger Station - Information, maps.
Sol Duc Road interpretive shelter and wayside exhibits.
Ancient Groves 1/2-mile loop trail 8.3 miles up the road.

Sol Duc Falls Walk - 5:00 p.m. - Tuesday, Friday, Saturday
June 29 - August 31. Meet at Sol Duc Falls trailhead at end of Sol Duc road. Two-hour, 1.6-mile (roundtrip) guided walk to spectacular Sol Duc Falls.

Sol Duc Campground Evening Program
Tuesday, Friday, Saturday
9:00 p.m. - June 29 through August 10
8:30 p.m. - August 13 through August 31
Sol Duc Campground amphitheater. Topics vary.



WEST SIDE

7 - RECREATION INFORMATION OFFICE (U.S. Forest Service/National Park Service)

8:30 a.m. - 4:30 p.m. - Daily. Downtown Forks at Transit Center/Rest Stop (next to Bank of America). Information, maps, brochures, publications. (360) 374-7566.

8 - HOH RAIN FOREST

Hoh Visitor Center - Daily - 9:00 a.m. to 5:00 p.m. through June 27;
9 a.m. - 6 p.m. June 28 - September 1. Exhibits, maps, publications, information, self-guiding nature trails.

Hall of Mosses Trail Guided Walk - 10:00 a.m. - Daily - 2 hours, 0.75 mile.
Forest dynamics, wildlife and more!

Ranger's Choice - Talk or Guided Walk - 3:00 p.m. - Sat., Sun., Wed.

Hoh Campground Evening Program - Monday, Wednesday, Friday, Saturday -
8:00 p.m. June 29 - August 31

9 - MORA

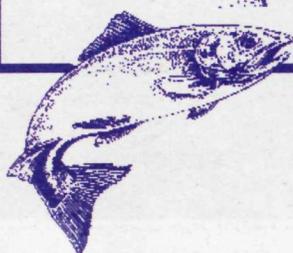
Ranger/Information station open intermittently. Maps, brochures, publications.

Intertidal Beach Walk - Daily - times on Mora bulletin boards and at Olympic National Park Visitor Center. Join this 2.5-hour, 3-mile round-trip walk to learn curiosities about the coast. Meet at Rialto Beach parking lot bulletin board.

Evening Program - Friday, Saturday, Sunday
9:00 p.m. - June 29 through August 10
8:30 p.m. - August 11 through September 1
Campground amphitheater. Topics on bulletin board.



Reference Map for Program Locations



June 26 - September 1, 2002

10 - KALALOCH

Ranger/Information Station - 9:00 a.m. - 5:00 p.m. - Daily - Information, maps, brochures, publications.

Intertidal Beach Walk - Offered several times each week. Times available on Kalaloch bulletin boards and at Olympic National Park Visitor Center. Learn about tidepools and other coastal environments on this 2-hour walk. Meet at Beach Trail No. 4 parking lot, located 2.5 miles north of Kalaloch Campground.

Beach or Coastal Forest Walk - Daily - Meet at Kalaloch Lodge. Check local bulletin boards for times.

Evening Program - Friday, Saturday, Sunday

9:00 p.m. - June 29 through August 10

8:30 p.m. - August 11 through September 1

Campground amphitheater. Topics on local bulletin boards.

11 - QUINAULT RAIN FOREST

Ranger/Information Station open most days during summer. Maps, brochures, publications, exhibits, self-guiding nature trails. Learn about pioneer history and the rain forest environment on guided walks offered five days a week. Check local posted information for days and times.

12 - U.S. FOREST SERVICE/LAKE QUINAULT LODGE

Check at the Ranger Station for naturalist walks and other programs.

13 - OZETTE

Ranger/Information Station open intermittently. Maps, publications, permits, trails.

EAST SIDE

14 - STAIRCASE

Ranger/Information Station open daily. Exhibits, trails, maps, brochures, publications.

Forest Walk - 2:00 p.m. - Friday, Saturday, Sunday. Meet in front of the Staircase Ranger Station for this 1.5-hour guided stroll through lowland forest. Discover plants and animals that live near the North Fork Skokomish River.

Evening Program - Friday and Saturday

9:00 p.m. June 29 - August 10

8:30 p.m. August 16 - August 31

Meet at amphitheater behind Staircase Ranger Station.

15 - HOODSPORT RANGER STATION (U.S. Forest Service/National Park Service)

8:00 a.m. - 4:30 p.m. - Daily. Information, maps, publications, 24-hour information kiosk.



HEY KIDS!



Become an Olympic National Park Junior Ranger.
Learn tidepool secrets, Native American lore and what Roosevelt elk eat.
You can pick up an activity booklet for a \$1.00 donation at most park visitor centers.

Discovering Olympic's Underwater Secrets

Spotting the Surfperch

Olympic National Park's 65-mile coastline contains a diverse array of intertidal habitats, including sand, gravel, cobble, boulder and rocky platform beaches. Most of these habitats are exposed to the full wrath of the Pacific Ocean. Mainly because of their inhospitable habitats, the park's intertidal fishes have received little attention by scientists. Our current knowledge of these fish comes from partial inventories done in similar habitats in Alaska, Oregon and northern California. At least 82 species of fish inhabit the park's rugged, wave-swept intertidal shoreline. Some inhabit the intertidal zone only when it is submerged by the tide, while a host of others are specially adapted to a life of temporary stranding in tidepools or cracks, and amongst moist seaweeds.

As part of the National Park Service Natural Resource Challenge, the Coastal Program of Olympic National Park is midway through a two-year project to inventory the park's intertidal fishes. Such an inventory has never been conducted before. In the summer of 2001, at twelve sites along the park's coastline, tidepools were temporarily drained to sample fish. At three other sites, researchers used beach seines to sample submerged habitats.

A particular standout was the discovery of the spotfin surfperch...

Scientists documented forty-two fish species. A particular standout was the discovery of the spotfin surfperch (*Hyperprosopon anale*) at Point of the Arches and Second Beach. This silvery fish has not previously been observed north of Seal Rock, Oregon. In the summer of 2002, emphasis will be placed on sampling non-tidepool habitats, where researchers expect to find a number of different species. This inventory will yield fundamental knowledge of the park's intertidal biodiversity, thereby illuminating another facet of our coastal jewel.

Steven Fradkin, Coastal Ecologist

Fast disappearing from waterways of the Pacific Northwest, the unique and intriguing bull trout (*Salvelinus confluentus*) is the focus of a three-year study in Olympic National Park. A member of the salmon family, related to Pacific salmon, trout, Dolly Varden and whitefish, the status and biology of this species remains a mystery in Olympic Peninsula rivers.

Historically, bull trout ranged from the upper Sacramento River drainage in California and extended northwards to the upper Yukon River in Canada. They are now believed to be extinct in California, and are considered to be a threatened species throughout the western United States, including waterways of Puget Sound and the Olympic Peninsula. Substantial declines in the distribution and abundance of bull trout have been attributed to habitat degradation, over-fishing, dams and displacement by nonnative fish species.

The precarious future and lack of information related to bull trout has led park biologists to conduct an innovative radio telemetry study on the Hoh River. This research will determine the

Tracking the Bull Trout

The members of this genus are by far the most active.... and live in the coldest, cleanest and most secluded waters.

Ichthyologists David Starr Jordan and Barton W. Evermann, 1896



-Unlike Pacific Salmon, Bull Trout-

*** Live longer-13 or more years * Prey primarily on other fish species * Exhibit light colored spots on a dark body * May spawn multiple times throughout their life history * Exhibit non-migratory and migratory life history forms * Are more elusive and secretive and observed mostly at night * Require the cleanest and coldest water of any salmonid in North America**

life history characteristics of bull trout including migratory patterns, timing and location of spawning, and the extent that this species inhabits tributary streams. Beginning this summer, park biologists will surgically implant radio tags in up to 80 fish to track their movements throughout 50 miles of the Hoh River and its tributaries. Using receivers mounted on airplanes and along the river, scientists will track specific movements of individual fish by following their unique radio frequency.

The Hoh River offers one of the last opportunities to study this species in a free-flowing river that originates from a protected area. Furthermore, it marks the first research on bull trout migrations in a national park within the United States. Results from this study will be used to monitor trends in abundance of bull trout. It is believed that bull trout from rivers such as the Hoh may serve as important seeds to recolonize nearby populations.

Sam J. Brenkman, Fisheries Biologist

Looking Beneath the Surface

The 600-foot deep cauldron of Lake Crescent was carved out by huge glaciers thousands of years ago. Glaciers retreated and the lake filled with water that eventually flowed into the Elwha River. When an ancient landslide blocked Lake Crescent's outlet, it also stranded several fish that began to develop separately from their native populations. Beardslee, a rainbow trout unique to Lake Crescent, and Crescenti, a strain of cutthroat, both made specific adaptations to this deep, cold, nutrient-poor lake. The spawning habits of the Crescenti have especially captured the attention of researchers.

Last spring, park biologists conducted dive surveys and made a new discovery.

Until recently, park fisheries biologists observed Crescenti spawning in only two locations—Barnes Creek, the lake's largest tributary, and Lyre River, the outlet stream. The biologists suspected, with no documented evidence, that some of these trout used the shoreline for spawning. Last spring, biologists conducted dive surveys and discovered that substantial numbers of large cutthroat spawn along the southwest shoreline near Fairholm, to depths of 25 feet. These cutthroat deposit their eggs in gravel along steep lake walls, where upwelling provides oxygen and removes waste products.

Fish of this new spawning population may reach twelve pounds, much larger than other Crescenti, which typically weigh one to two pounds. This larger size may be attributed to their lifestyle. Shoreline spawners do not have to fight against strong tributary currents during spawning migration—they complete their entire reproductive cycle in the lake.

These findings are very encouraging and demonstrate how wild fish populations adopt different spawning strategies to maximize their survival. Future studies will be directed toward determining when spawning begins, how much of the shoreline is used for spawning and to what depths, and approximately how many trout spawn on the shoreline.

John Meyer, Senior Fisheries Biologist

INFORMATION



Bits and Pieces

Please do not feed any park wildlife. It is harmful to the animal and hazardous to you.

Recycle and reuse here and at home. These easy steps will help protect our environment and save natural resources.



Boil or filter all backcountry water for five minutes to avoid infection by *Giardia*, a microscopic intestinal parasite.

Bring rain gear and warm clothing! Hypothermia (a dangerous lowering of body temperature) may result from exposure to wet or chilly weather.



Drift logs are dangerous! Avoid swimming or walking near the water during storms or heavy surf.

Bicyclists beware! Travel around Lake Crescent can be hazardous due to heavy traffic on the narrow road.

Please! For safety's sake, pets are not allowed on park trails or in the backcountry.



For park information in the Port Angeles area tune your radio to 530 AM. At Lake Crescent or Quinault tune to 1610 AM.

The North Olympic Peninsula Visitor and Convention Bureau offers information about area accommodations and restaurants. Upon request, they will send you a *North Olympic Peninsula Visitor's Guide*. For further information call 1-800-942-4042.

Tread lightly please! Avoid walking on delicate vegetation by staying on trails. Help protect this beautiful wilderness park for future visitors.



Cougars inhabit all elevations of the park where deer, elk and other prey are plentiful. Very few people are attacked by cougars. But if you encounter a cougar, make yourself large and loud, wave your arms or a stick, face the cougar and slowly back away.

Emergencies

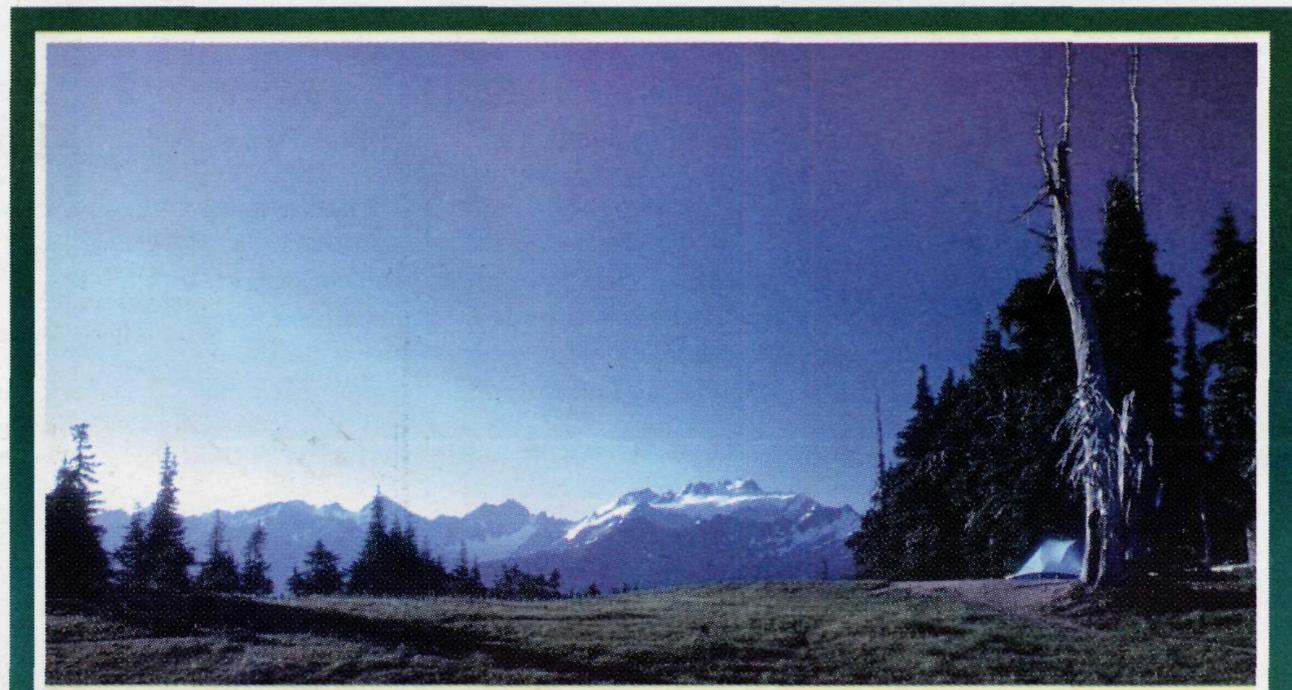
In an emergency or to report a crime, call (360) 565-3000, 7 a.m. -12 midnight during summer; 7 a.m. - 5:30 p.m. off season. After hours call 911. Be sure to report your exact location.

Park employees at ranger stations also assist with emergencies. Use area code (360) for all of the following ranger station numbers:

Elwha	452-9191
Heart O' The Hills	452-2713
Hoh	374-6925
Kalaloch	962-2283
Mora	374-5460
Ozette	963-2725
Quinault	288-2444
Eagle (Sol Duc)	327-3534
Staircase	877-5569
Storm King	928-3380

Park Concessions

All area codes are (360)
Kalaloch Lodge, 962-2271
Log Cabin Resort, 928-3325
Lake Crescent Lodge, 928-3211
Fairholm Store and Cafe, 928-3020
Sol Duc Hot Springs Resort, 327-3583



The Olympic Wilderness

INFORMATION

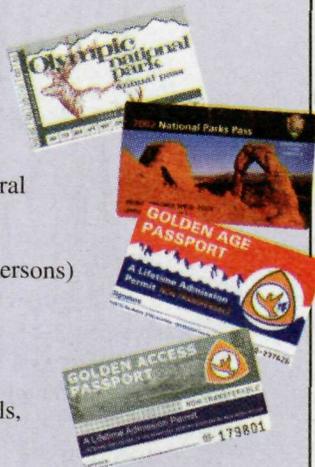
Puzzled by Fees?

ENTRANCE FEES - single visit up to seven consecutive days

- \$10 - Vehicle (private)
- \$5 - Individual (motorcycle, foot, bike)

ENTRANCE PASSES

- \$30 - **Olympic National Park Annual Pass**
- \$50 - **National Parks Pass** (annual, valid at all national parks)
- \$15 - **Golden Eagle** sticker (validates National Parks Pass for all federal entrance fee areas)
- \$10 - **Golden Age** Passport (lifetime, for people 62 and over)
- Free - **Golden Access** Passport (lifetime, for permanently disabled persons)



CAMPING FEES

Per site, per night:

- \$12 - Kalaloch and Sol Duc
- \$10 - Altaire, Elwha, Fairholm, Ozette, Graves Creek, Heart O' the Hills, Hoh, Dosewallips, July Creek, Mora, Staircase
- \$8 - Deer Park, Queets, South Beach
- 50% discount for Golden Age and Golden Access.

WILDERNESS USE FEES

Day use is free. A permit is required for overnight use, and costs \$5, plus \$2 per person per night. For complete information, ask for the **Wilderness Trip Planner** or call the **Wilderness Information Center** at (360) 565-3100. 50% discount for Golden Age and Golden Access.

OTHER USE FEES

- \$3 - RV dump stations, per use (Fairholm, Hoh, Kalaloch, Mora, Sol Duc)
- \$1 - Parking at Ozette (free with valid entrance receipt or pass)



UserFee

improves this park

Your fees fund **projects** that help provide safe and memorable experiences at Olympic National Park. Serving millions of visitors annually, park roads, trails, campgrounds and visitor centers rely on your help for maintenance. Thanks for your support.

Over the past two years, you helped restore and upgrade historic **ranger stations** and **shelters**. Your fee dollars helped remove exotic plants, **revegetate** high-use areas and assess the needs of **trout** and mussel populations. **Trails, bridges, picnic tables, restrooms, privies** and campground **fire grates** were upgraded parkwide, along with **boat docks**, gravel roads, **signs** and **exhibits**. You put new **roofs** and **paint** on many of our buildings and provided new **fire extinguishers**. You helped us educate and protect thousands of wilderness users. Fees funded hundreds of animal-proof food storage canisters, lockers and trash containers, promoting safety for **animals** and humans. With your help, the park was **digitally mapped** and **aerially photographed** to aid planning, fire and resource management and rescue work. Nearly **80%** of your fee dollars stay in the park. Thank you!

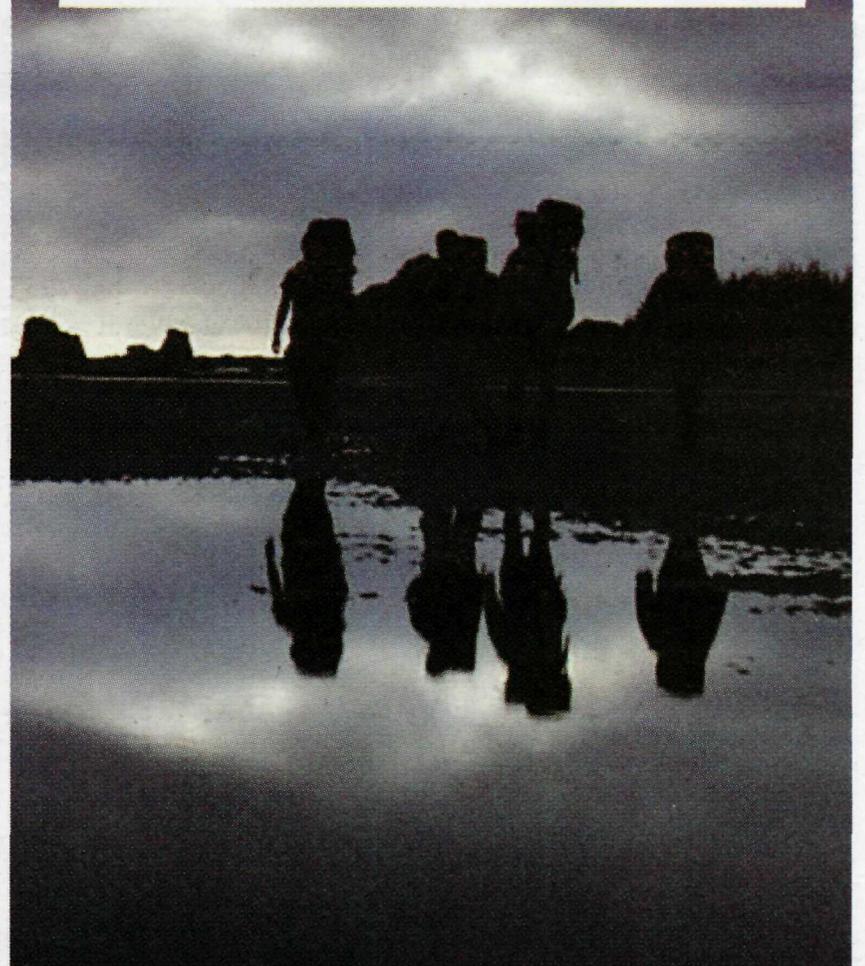
Looking in any direction, find the words in red in this puzzle.

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Working Together for the future

Together with the public, Olympic National Park is developing a long-range General Management Plan (GMP) for the park. When complete, the GMP will guide the protection and management of Olympic National Park for the next 15 to 20 years. Two rounds of public meetings were held this past fall and winter, to gather input on the range of issues and alternative management strategies to be analyzed in the draft plan. The planning team is now writing the draft plan, which will be released for public review in the fall of 2003. A newsletter describing the draft alternatives will be distributed later this summer.

If you'd like to learn more about Olympic's GMP, or be added to the mailing list for GMP newsletters, please e-mail olymp_gmp@nps.gov, or send a postcard to Superintendent, Olympic National Park, 600 East Park Avenue, Port Angeles, WA 98362.



Bugler 2002

Olympic National Park Summer Newspaper

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