

# OLYMPIC NATIONAL PARK

## 1998 PARK ISSUES

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## AIR QUALITY

Contacts: Shelley Hall, Patte Danisiewicz, Roger Hoffman

- o Olympic National Park is a designated Class I Area under the Clean Air Act.
- o Air pollution can affect ecosystem components, such as vegetation, soils, lichens and wildlife. Human health can also be impacted by air pollutants. Visibility impairment and odors may impact visitors' experiences of national parks.
- o Ozone and sulfur dioxide have been measured at the park using continuous samplers since the early 1980s.
- o Acid precipitation has been monitored since 1980.
- o Visibility was monitored during the 1980s.
- o UV-B (ultraviolet radiation) has been monitored since 1997.

Background: Designated Class I Areas are managed under the Clean Air Act to prevent degradation of air quality and related values, including visibility.

Olympic is part of the NPS national network for monitoring ambient air pollution. The park's air quality monitoring station is located along the Hurricane Ridge Road, southeast of the Visitor Center. Continuous sampling of ozone, sulfur dioxide and meteorological parameters is conducted at this site. In 1995, 1996 and 1997, a limited program of ozone monitoring was conducted using passive samplers in the Staircase, Dosewallips, Deer Park, Sol Duc, Hoh, Queets and Hurricane Ridge areas. Olympic is also part of the National Atmospheric Deposition Program (NADP) for acid precipitation monitoring. Washington State Department of Ecology operates a nephelometer at Hurricane Ridge to monitor summer visibility.

Current Status and/or Concerns: Air quality is generally good in the park although some localized impacts occur.

Continuous monitoring of ozone, sulfur dioxide and weather parameters will continue in 1998. Ozone levels at the ambient monitoring site are generally fairly low (0.01 - 0.03 ppm average). SO<sub>2</sub> values are usually low (below 0.1 ppm highest hourly average) now. This monitoring equipment is operated by Patte Danisiewicz.

Passive ozone sampling will be repeated in 1998. In past years, this study documented higher levels of ozone at the higher elevation sites in the park. Similar results were obtained at other high elevation sites in Western Washington. West side sites in the park had lower levels of ozone than what is generally thought of as background values.

Acid precipitation sampling will continue in 1998. Average pH of rainfall in the Hoh watershed is 5.3. This equipment is operated by ranger staff at the Hoh.

NPS equipment to monitor ultraviolet radiation was installed at the Ediz Hook US Coast Guard Station in Port Angeles late last year. This site is operated by Roger Hoffman.

COASTAL ISSUESOlympic Coast National Marine Sanctuary (OCNMS):

Contact: Paul Crawford

- o In November 1988, Congress authorized establishment of a Washington Outer Coast National Marine Sanctuary (now called Olympic Coast National Marine Sanctuary). It was officially dedicated July 16, 1994, with a ceremony at Kalaloch.
- o The concept of the Sanctuary had broad support from the public, state government and most federal agencies, including Olympic National Park.

Background: The National Oceanic and Atmospheric Administration (NOAA) now administers fourteen National Marine Sanctuaries, all designated since 1972; three in Florida waters, four in California, and the others in Massachusetts, North Carolina, Georgia, Texas, Hawaii and American Samoa. Sanctuaries have been described as the marine equivalent of national parks but are, in fact, more nearly like national forests in that multiple uses are allowed, including resource extraction in some cases. In general, they are designated to protect open waters, near shores and benthic ecosystems. Historic resources (shipwrecks) and recreational and commercial opportunities (e.g., fishing) can also be given some protection.

Protection of natural systems in the Olympic Coast NMS is to be given highest priority. Proximity to National Wildlife Refuges and Olympic National Park (with attendant designations as Wilderness, Biosphere Reserve and World Heritage Site) has encouraged orienting the sanctuary management plan toward this protection of natural values. With NOAA, the U.S. Fish and Wildlife Service and the National Park Service managing contiguous lands, waters and wildlife under similar objectives, the possibility of true interagency ecosystem management on the Olympic coast will clearly be enhanced.

The Olympic Coast NMS extends from the Canadian boundary in the Strait of Juan de Fuca south to Copalis, approximately 135 miles. The sanctuary extends from the high tide mark west to the edge of the continental shelf, ranging from 15 to 40 miles offshore. Total area is about 3,310 square miles. Adjacent to the park, the eastern boundary of the sanctuary includes the intertidal zone, thus making the beaches part of both the sanctuary and park.

Current Status and/or Concerns:

- o Final rulemaking is complete and published. Oil and gas drilling and seafloor mineral extraction are forbidden. Permits for military practice bombing have been canceled. Discharging and dumping of almost everything are prohibited.
- o The Coast Guard has forbidden anchoring in Mukkah Bay (west coast of Makah Indian Reservation) and is pursuing designation of the entire sanctuary as an "Area To Be Avoided" by all vessels carrying hazardous materials (including petroleum products). Compliance with this designation would be voluntary, but most of the petroleum shipping industry has endorsed the concept.
- o Headquarters for the sanctuary staff (5 positions) is in the Port Angeles Federal Building (old post office, downtown).

- o A 15-member Advisory Council has been established, with representatives from tribal, state, and federal agencies. There are also members representing research, education, marine commerce, tourism and conservation. Paul Crawford (member) and John Wullschleger (alternate) are the ONP representatives.
- o Sanctuary issues concerning ONP:
  - \* Coordination/cooperation on research, permits, education.
  - \* Establishing authorities for cooperative law enforcement.
  - \* Oil spills: helping the sanctuary to establish a role in prevention, planning, response and damage assessment teams.
- o The National Geographic Society is taking a large-scale interest in the Sanctuary system and will be doing feature articles, sponsoring research, etc. over the next few years.

#### Oil Spills:

Contact: Paul Crawford

- o The Olympic Coast experienced large oil spills in 1988 (Nestucca) and 1991 (Tenyo Maru).
- o To prepare for any future spill "misfortunes," ONP is working with other resource and response agencies to preplan strategies for response and mitigation, determine resources at risk and (most important) devise methods of spill prevention.

Background: As part of preparations for future spills, a coastal mapping project and continued intertidal studies are underway. Dr. Megan Dethier (of the University of Washington) has established permanent intertidal transects in various coastal habitats. This work fills gaps in previous studies and allows us to establish baseline conditions, measure changes and make accurate damage assessments during any future spills. Dr. Dethier is also working with ONP GIS Specialist Roger Hoffman on a coastal habitat classification system for use in GIS.

Additionally, park staff have participated with other agencies in evaluating the relative effectiveness and desirability of such mitigation methods as in situ burning, dispersants, bio-remediation, steam cleaning, etc., and in setting statewide policy on their use.

#### Current Status and/or Concerns:

- o A "tug of opportunity" system has been established by the shipping industry whereby the nearest available tug with the required capabilities can be dispatched to a disabled vessel. This is generally viewed as a step in the right direction, but not a total answer to spill prevention. Much attention in the last few months is being directed toward having tug escorts for tankers from the entrance to the Strait of Juan de Fuca all the way to the refineries near Anacortes.
- o ONP has been part of the team of agencies working on a recovery plan for resources injured during the Tenyo Maru spill. In the consent decree from federal court, the trust agencies received \$5.2 million to be spent on recovery of marine birds and kelp habitat. Purchasing easements or ownership of marbled murrelet nesting

habitat and modifying gill net equipment to avoid seabird accidental mortalities are two possible projects for funding.

#### CULTURAL RESOURCES MANAGEMENT

Contacts: Paul Gleeson, Susan Schultz, Jacilee Wray, Ellen Gage, Dave Conca, Kirstie Haertel, Kris Noll and Mike Plakos

- o Olympic National Park has numerous and diverse cultural resources.
- o The park has a responsibility to protect and preserve these valued resources the same as it does it's natural resources.
- o The cultural resources management division is documenting and protecting archeological and ethnographic resources, historic structures, and cultural landscapes.
- o The cultural compliance process is facilitated by the cultural resource division.

Background: Olympic National Park was created to preserve and protect natural resources. The park contains numerous cultural resources that also require preservation and protection under the Organic Act, federal law and NPS policy.

Archeological sites along the coastal strip have been extensively documented. The Ozette Indian Village archeological site is a prime example. An archeological survey was first conducted in the park's interior in the 1980s, and revealed that over 6,000 years ago aboriginal people were, in fact, utilizing the mountains and their resources. Over 75% of the park's documented archeological sites are in the park's interior and the mountains were frequently a travel route between different villages.

Olympic is the traditional homeland of more Native American groups than any other national park unit. The knowledge that these tribal members have of the park and its resources will facilitate our understanding of how people utilized and adapted to the environment before European contact. We have a responsibility to document and protect ethnographic resources, just as we do archeological sites. Ethnographic resources are places important to the lifeways of indigenous people. They can be natural features, which we would not recognize as a cultural resource without an understanding of the traditions of those who value them.

Cultural resources include historic structures, homesteads, and mining operations. Cultural landscapes in the park are varied, and include orchards, pastures, recreation developments, and historic trail routes. Historic buildings and landscapes are evidence of major historic events and trends on the Olympic Peninsula. Exploration, homesteading, mining, hydroelectric development, tourism, forest management, depression era conservation and recreation, and wartime defenses are all important elements of the park's historic land use.

Current Status: The major emphasis is the identification, documentation, and protection of the park's varied cultural resources. The cultural resource division, established in 1992, is well underway. The division just completed the construction of a new integrated curatorial center. Paul Gleeson directs the cultural resource and compliance program at Olympic, serves as chairman of

the Project Compliance Review Committee, and conducts ongoing archeological field work.

Susan Schultz is the park historian and has a wealth of knowledge about the park's historic resources and serves as curator for Olympic's collection of artifacts. She has completed historic research on park issues, including research on the history of the introduction of the mountain goat to the peninsula. Currently she is completing a study of historic accounts of elk in the park.

Jacilee Wray is the park anthropologist. She has been conducting ethnographic research, and has written the park's ethnographic overview and assessment which outlines the relationship of peninsula tribes to the park and its resources. Currently Jacilee is working with the Olympic Peninsula Intertribal Cultural Advisory Committee on the publication "The Tribes of the Olympic Peninsula." She is also working on researching and interviewing on the CCC construction within the park.

Ellen Gage of the Maintenance Division also serves as the park historical architect. In addition to her primary responsibilities for designing new park housing, Ellen oversaw the documentation project required prior to removal of the historic Elwha and Glines Canyon dams. In the past year she has worked restoration planning of the Kestner Homestead.

Dave Conca, Kirstie Haertel, Chris Noll and Mile Plakos are field archaeologists conducting parkwide site surveys in the Lake Ozette and park alpine areas.

#### CUSHMAN PROJECT LICENSING AND CUSHMAN LAND EXCHANGE

Contact: John Aho

- o The Cushman Hydroelectric Project (Project), consisting of two dams on the North Fork Skokomish River, penstocks and power lines, is currently in licensing proceedings before the Federal Energy Regulatory Commission (Commission).
- o The Department of the Interior has intervened in the licensing process.
- o Both dams are outside the authorized park boundary but affect the park and park resources. The upper, larger impoundment (Cushman Reservoir) trespassed on about 11 acres of park land. A land exchange and park boundary change eliminated the trespass.
- o The Commission has prepared an Environmental Impact Statement, which has been found to be flawed by the several resource agencies, the Skokomish Tribe, and environmental organizations.
- o Pending the outcome of current attempts to negotiate corrections to the flaws perceived in the EIS, appropriate agencies will set 4e and 10j conditions for licensing.
- o The Council For Environmental Quality (CEQ) may be asked to help resolve the licensing dispute.
- o Two Hood Canal stocks of salmon are proposed for ESA listing. Critical habitat needs of these salmon may determine flow maintenance/release requirements for a new license.

Background: The Cushman Project dams were built in the 1920s creating two reservoirs that destroyed winter range and calving areas for Roosevelt elk, and also destroyed anadromous fish runs into the park. A population of bull trout, Salvelinus confluentus, exists upstream of Cushman Project #1, both within and downstream of Olympic National Park. Spawning habitat for bull trout and other resident salmonids may be affected by Cushman Project impoundment. Additionally, Lake Cushman (4,010 acres) formerly trespassed on about 11 acres of park land. The presence of the reservoir affects park visitation, increasing numbers and changing the nature of use at the Staircase area, a "gateway to wilderness."

The Commission directed Tacoma to resolve the inundation issue pursuant to licensing. The National Park Service (NPS) and Tacoma Public Utilities Light Division (TPU) agreed to exchange lands and change the park boundary, and supported P.L. 102-436, authorizing the Secretary to take this action. The law stipulates several conditions, one being that a management agreement for the Cushman exchange lands be in place before the exchange occurs. This management agreement is in place, has been signed and became effective upon transfer of the lands.

Current Status and/or Concerns: The intervening parties, including Interior, and the City of Tacoma have faulted the EIS. Tacoma states it will walk away from a license that is not economically viable. The resource agencies and the Skokomish Tribe find resource restoration and mitigation requirements of the proposed license inadequate. The CEQ may be asked to resolve the dispute. Current proposals for ESA listing of two stocks of Hood Canal salmon may affect licensing terms and conditions.

#### ELWHA AND GLINES CANYON DAMS

Contact: Brian Winter

- o The "Elwha River Ecosystem and Fisheries Restoration Act" (P.L. 102-495) was signed by President Bush in October, 1992.
- o The Act directed the Secretary of the Interior to prepare a report identifying the alternative (dam retention with fish passage facilities or dam removal) that would result in the full restoration of the ecosystem and native anadromous fisheries.
- o The *Elwha Report* was submitted to Congress in June 1994 and concluded that the removal of both dams was necessary to meet the goals of the Elwha Act.
- o Interior completed the first of two environmental impact statements (EIS) in June 1995. The preferred alternative in the "programmatic" EIS (EIS1) is dam removal. The second "implementation" EIS (EIS2) was completed in November 1996 and evaluated two methods to remove the dams. The preferred alternative is river erosion of the accumulated sediments. The National Park Service was the lead in the EIS effort.
- o A total of \$11 million was appropriated in FY96-98. This money can only be used for acquisition of the hydroelectric projects. Another \$86 million was appropriated in FY98 as part of the Land & Water Conservation Fund (LWCF), although the LWCF has not been released by the Congress. Senator Slade Gorton has stated that he agrees with the use of those funds for acquisition but not for removal.

Background: The Federal Energy Regulatory Commission (FERC) licensing process for the Elwha and Glines Canyon hydroelectric projects began in 1968 and 1973, respectively. Significant contention arose around FERC's consideration of licensing and continued operation of these facilities, such that protracted litigation was expected to result involving the Department of Interior, Department of Commerce, Department of Justice, FERC, the Lower Elwha Klallam Tribe, conservation groups, and private industry. A lawsuit over jurisdiction of the Glines Canyon Project was dismissed pending full implementation of the Act, but it can be revived if funding to acquire the projects is not provided by Congress.

In 1991, FERC issued a draft EIS (DEIS) regarding licensing of these projects. In the DEIS, FERC concluded that (1) dam removal is feasible, (2) only dam removal will result in the full restoration of the Elwha River ecosystem and anadromous fish, and (3) the cost of power produced by dam retention would equal or potentially exceed the cost of power from the Bonneville Power Administration. (Since that time, the cost of power has dramatically fallen, making the projects uneconomical to operate if licensed with required mitigation.) The General Accounting Office (GAO) subsequently concluded that "dam removal offers the best prospects for fish restoration" and noted that the selection of an alternative is essentially a public policy decision.

Current status and/or concerns: In 1992, P.L. 102-495 was signed, directing the Secretary of the Interior to prepare a report to submit to Congress. The report had to identify the alternative (dam retention with fish passage facilities or dam removal) that would result in the full restoration of the ecosystem and native anadromous fisheries. It also had to include a "definite plan for removal" of the Elwha and Glines Canyon projects and for the "full restoration of the Elwha River ecosystem and the native anadromous fisheries." *The Elwha Report* was provided to Congress in June 1994. Since *The Elwha Report* concluded that only dam removal will meet the full restoration goal stipulated by the Elwha Act, the Department of the Interior decided to complete FERC's EIS process to further assess the impacts of dam removal and to identify a preferred alternative. The final EIS1 was released in June 1995 and identifies dam removal as the preferred alternative. EIS2 analyzed two methods of dam removal and sediment management (river erosion or slurry pipeline) and recommended the erosion alternative. The total cost of the project is \$113 million. However, Senator Gorton favors removal of Elwha Dam with the requirement that the Glines Canyon Dam cannot be removed until 12 years later, if at all, depending on how the fish runs respond during the intervening period. The cost of this phased removal would be \$140 million. If Congress chooses not to provide the necessary funds for either approach, litigation regarding the future of the projects by the Lower Elwha Klallam Tribe, owner and operator of the dams, or environmental groups would likely result.

#### FIRE MANAGEMENT

Contact: Larry Nickey

Olympic National Park's Fire Management Plan is currently under review for signature. It is hoped that our revised plan will be approved during the summer of 1998. The revision will allow the park to re-initiate its Prescribed Natural Fire Program (PNF), which has been suspended since 1987.

The PNF plan was originally suspended after the Yellowstone fires until the requirement of tighter prescriptions was accomplished. In recent years, it has been suspended due to endangered species habitat issues. Until the revision is approved, the park will remain in a suppression mode on all fires.

Fire in the Olympics is very weather dependent. As the Olympics are usually wet, the fire season is relatively short compared to much of the United States. The park is hoping to put the PNF program back in operation during the summer of 1998, so that natural fires may once again be used to perpetuate the ecosystem, after years of full suppression. In an average year, the park will have between 15-30 lightning caused fires and 10-20 human caused fires. Most will only be a single tree or a very small area, but under the right conditions, a natural fire may burn between a quarter-acre up to 1,000 acres. PNFs will vary from a slow underburn with only the litter layer burning beneath the trees, while another may be a stand replacement fire.

In addition to managing the park's fires, Olympic National Park personnel often assist other agencies in fire suppression. These fires may be anywhere on the Olympic Peninsula, or may be in another state. We continue our interagency support, often supplying personnel for overhead teams, 20 person crews and helitac modules.

The fire crew has moved into the new Emergency Operations Center that was constructed by Olympic's maintenance staff in 1997. The new building provides adequate office, cache and engine storage space for the fire management program.

When not on fires or doing presuppression fire work, the park's fire staff assist district ranger and maintenance staff with various projects. The work may vary from hazard fuels reduction projects around park buildings, helicopter operations, and trail maintenance, to exotic plant removal and revegetation projects. At other times, the fire staff assists in search and rescues, whenever additional personnel are needed. In addition, Olympic fire staff assist San Juan Island National Historical Park in the completion of hazard fuels projects and other fire related projects to maintain the historic scene of the park area.

## FISH MANAGEMENT

### Fisheries Database:

Contact: Sam Brenkman

- o Park staff are compiling current and historic fish and aquatic information into databases for use in resource management and planning.
- o Initial efforts are directed toward documenting fish distribution by species throughout the park.

Since hiring a fishery biologist in 1983, the park has compiled considerable information regarding the distribution and abundance of fish, shellfish, and other aquatic organisms as well as information on water quality and streamside habitat condition. Much of this information remains in original field notes or loose-leaf notebooks. As requests for information are received from other agencies or the public or when conducting resource management assessments or

planning, it is often necessary to sort this information and pull together the pertinent data. This is very time consuming and does not always produce the same information. Park staff have begun an effort to organize these records and enter them into an Access database for long-term storage and analysis. Initial efforts are directed toward documenting the distribution of fish, shellfish, and amphibians in all freshwater areas of the park. This set of information will be entered into a GIS data layer and will be utilized in interagency watershed planning, protection of aquatic resources during park maintenance activities, and for planning future inventories. Other databases to be developed are spawning ground survey records, catch or creel information, habitat assessment, and water quality. As time allows in the future, information from other agencies will be summarized and entered into these databases and will include additional sources of information such as hatchery plants into rivers and streams which are adjacent to the park.

**Lake Crescent Trout Investigations:**

Contact: John Meyer

- o Lake Crescent trout have been subjected to past hatchery practices that involved releases of non-native stocks.
- o The park is continuing an assessment of the genetic composition of each of three stocks in the lake to determine their origin, the degree of mixing between them, and their similarity to other Olympic Peninsula trout populations.
- o Samples have now been collected from each of the lake's three populations.

Lake Crescent appears to contain three stocks of trout; a rainbow population known as Beardslee and two cutthroat populations called Crescenti. The cutthroat spawn in two locations, Barnes Creek and the Lyre River (.5 - 2 miles downstream from the lake). The Beardslee spawn in the Lyre River at the lake outlet.

We suspect past hatchery releases into Barnes Creek have resulted in some hybridization with non-native rainbow and cutthroat which may have altered the gene pool of this native population. These genetic alterations may have impacted the rates of growth and age at maturity of these fish as they appear to be smaller than the other two populations. They also appear to be the most abundant stock in the lake benefiting from the high quality and relatively large amount of spawning habitat in Barnes Creek. Genetic impacts from prior hatchery plants on the Beardslee and Lyre cutthroat are unknown. To resolve these questions, park staff are collecting tissue samples for genetic analysis from each trout population. Scale samples are also being collected to determine growth rates and size at maturity. If the Barnes Creek cutthroat are highly influenced by non-natives and the Lyre River cutthroat are the original Crescenti, efforts may be made to remove the hybrids from Barnes Creek and replace them with natives from the Lyre River.

**Stock Status and Recreational Fishing:**

Contact: John Meyer

- o Closures and wild-release regulations remain in effect on several park waters in response to low returns of coho salmon and protection of wild summer steelhead and bull trout/Dolly Varden.
- o The 1998 fishing regulations are available in each subdistrict office.

- o Status reviews have been completed for west coast salmon and steelhead stocks with threatened status proposed for Puget Sound chinook and Lake Ozette sockeye.

The National Marine Fisheries Service has completed its status review of west coast salmon and steelhead. Their recommendations for Olympic Peninsula stocks include proposals to list Puget Sound chinook (includes Elwha and Dungeness), Lake Ozette sockeye, and Hood Canal summer chum (this stock probably not present in OLYM) as threatened. A status review of anadromous cutthroat trout is currently under way. Although no listing was proposed, concerns remain for coho and pink salmon especially in the Strait of Juan de Fuca streams.

The Fish and Wildlife Service had concluded that listing of Puget Sound and Washington coastal bull trout was not warranted but a federal judge has ordered them to reevaluate the status of this species using the most current information. This status review is currently underway.

Due to continuing poor conditions for survival in the ocean, returns of wild coho salmon to coastal rivers are expected to be low again this year. Returns of winter steelhead were generally very low and a statewide ban on the capture of wild fish was implemented in the non-treaty fishery. Chinook returns are expected to be moderate to good in most rivers. Park fishing regulations for 1998 are very similar to prior years with restrictions on many salmon stocks, all wild summer steelhead, and bull trout/Dolly Varden. Areas of the park open to salmon fishing generally target hatchery returns or jacks (precocious males). Areas that remain open to the harvest of wild salmon or steelhead are targeted on healthy stocks which are subject to court-ordered sharing between treaty and non-treaty fisheries. Catch-and-release requirements remain in effect on the North Fork Skokomish, South Fork Hoh, and Queets rivers.

### INTERTIDAL MANAGEMENT

#### Intertidal Monitoring:

Contact: John Wullschleger

- o Baseline data on intertidal communities is needed to detect and determine the magnitude of changes that may occur as a result of natural or man induced factors.
- o Potential threats to intertidal life include offshore oil or chemical spills, human harvest and non-consumptive recreational activities, watershed degradation, and global scale climate changes.

ONP has been monitoring the intertidal community in the Pacific Coastal Area (PCA) since 1988. The monitoring program was designed and initially conducted by the University of Washington. In 1996 ONP natural resources staff began to assume the responsibility for monitoring. Sites are located along the entire length of the coast and in all major habitat types; sampling at each site is conducted once every two years with approximately half of the sites being sampled in any given year.

**Intertidal Harvest:**

Contact: John Wullschleger

- o The 1986 legislation that added the intertidal zone to the park required that it remain open to the harvest of fish and shellfish in conformity with Washington State regulations.
- o While some recreational harvest of hardshell clams, mussels and other species is known to occur, from 1986 to 1997 there were no harvest surveys conducted for any species other than razor clams.
- o Despite inclusion of the intertidal zone in the park, the Washington Department of Fish and Wildlife has continued to manage a recreational razor clam fishery on Kalaloch Beach on a maximum sustained yield basis.
- o Based on court decisions, coastal tribes are entitled to fifty percent of the total allowable catch within their usual and accustomed areas, which include the entire PCA.
- o Tribes currently co-manage razor clams at Kalaloch Beach with WDFW and harvest razor clams and other species at other locations throughout the PCA.
- o Treaty agreements entitle coastal tribes to harvest shellfish and other intertidal organisms commercially within their usual and accustomed areas, although to date none of the coastal tribes has exercised that right within the PCA.

ONP initiated a recreational harvest monitoring project in 1997. That year, efforts focused on obtaining basic information on approximate levels of harvest, areas where harvest occurs and species targeted. That information was used to select specific areas to be surveyed more intensively in 1998. The 1998 survey incorporates a stratified random design to enable estimation of total pressure and harvest. Results will be used in considering whether to establish areas that are closed to recreational harvest of shellfish.

ONP has no authority over treaty harvest of intertidal organisms by coastal tribes. In general, harvest by the tribes is thought to be low. Ultimately, the park hopes to work cooperatively with the coastal tribes to establish sanctuary areas that will be closed to both recreational and tribal treaty harvest. Such areas would provide for the recolonization of adjacent areas where harvest continued to be allowed, serve as banks for genetic material and provide areas where ecological processes under relatively pristine conditions could be observed and studied.

**Surf Smelt Studies:**

- o The Quillayute Spit jetty rehabilitation project, which was completed in 1997, has the potential to alter the quality and quantity of surf smelt spawning habitat at Rialto Beach.
- o Park staff have been monitoring beach sediments and smelt egg abundance on Rialto Beach since Spring 1997 to assess the impacts of this project.

A previous study determined that Rialto Beach is the northernmost spawning area for surf smelt in ONP. Sampling conducted on Rialto Beach during 1997 indicates that surf smelt spawned from April through August. Beach sediment data have not been analyzed but casual observation suggests that the beach continues to recede. Near the south end of the rehabilitation project, rock that was covered by beach sediments at the completion of the project is

currently exposed. Smelt egg surveys will be conducted monthly through September of this year and again from April through September 1999, after which a final report with an assessment of project impacts and recommendations for management actions will be completed.

#### INTEGRATED PEST MANAGEMENT

Contact: Rich Olson

Integrated Pest Management (IPM) is a program designed to ensure that the most environmentally sound approaches in managing pest problems are used within the park. Chemical pesticides are only used when absolutely necessary, and non-chemical control methods and habitat modification are emphasized. In brief:

- o Before using chemical pesticides, approval must be obtained through the park IPM Coordinator, Rich Olson, and NPS regional and Washington offices. Pesticides include insecticides, herbicides, rodenticides, etc. Non-aerosol insect repellent commercially packaged for personal use is exempted.
- o If you encounter a pest problem or you have questions about IPM, contact the park IPM Coordinator Rich Olson, ext. 289.
- o In natural zones, pesticides will rarely be approved for use on native species.
- o When pesticide use is authorized, a use log must be maintained by the applicator. Rich Olson can assist in establishing use logs.

#### LAKE CRESCENT MANAGEMENT PLAN/EIS

Contact: David Morris  
Barb Maynes

- o Olympic National Park began the process of developing a management plan for the Lake Crescent watershed in the summer of 1995. The plan is designed to guide the use and management of the Lake Crescent area for the next 15 to 20 years.
- o The draft and final versions of the plan were developed by park staff, along with a planner from the Denver Service Center and staff from the Columbia Cascade Cluster support office in Seattle. Students from the University of Washington's Department of Landscape Architecture assisted in gathering some of the initial information included in the draft plan.
- o The draft Lake Crescent Management Plan/Environmental Impact Statement (EIS) was released in September, 1996. The comment period was twice extended and closed March 19, 1997.
- o The Final Lake Crescent Management Plan/FEIS will be released sometime this summer, probably in July.

Background: Lake Crescent is a focal point for park visitors and one of the most heavily used areas in the park. It is both a significant scenic attraction and a favorite recreation site for local and regional residents.

Increased park visitation has been accompanied by localized congestion on the lake and many conflicts between active recreational pursuits, notably personal watercraft (PWC or "jetskis"), and more passive, traditional park activities.

While pristine in many ways, the lake is not a wilderness, but rather has a long history of recreational use. U.S. Highway 101 runs along the south shore of the lake, over 100 private landowners reside on or near the lakeshore on a permanent or part-time basis, and two commercial resorts and one store provide a variety of visitor services. The National Park Service also provides several visitor facilities, including a campground at Fairholm, a picnic area at LaPoel, a ranger station and several trails. The lake's largest developed area exists at Barnes Point, also the site for the Olympic Park Institute.

The Lake Crescent Management Plan/EIS seeks to provide a clear vision for management and use of the watershed, taking into account the variety of uses which currently occur there. Although the plan does address many facets of park management, the issue of PWC use quickly became the focal point. Almost 2,000 written comments were received in response to the DEIS, as well as petitions generated locally. A total of about 500 people attended the two public meetings. Nearly all of the comments addressed the future of PWC use on the lake. Strong, and often very emotional, differences of opinion exist regarding this issue.

Current Status and/or Concerns: The Final Lake Crescent Management Plan/FEIS is complete and is in the process of being printed. We anticipate releasing the document sometime in July. While it is not common practice to announce the content of an EIS prior to release of the actual document, intense public and Congressional interest in the future of PWCs on the lake has led the park to prepare a press release describing the park's position on PWC use on Lake Crescent. It is important to note that the park is continuing to follow the National Environmental Policy Act (NEPA) process in developing and issuing the FEIS. The announcement of the park's strategy does not imply a final decision, which can only occur after release of the FEIS and signing of the Record of Decision.

The park's position on PWCs is based on analysis of the growing body of literature documenting the biologic and aesthetic impacts and safety record of PWCs, as well as the extensive public input during the Lake Crescent planning process.

Despite the focus on PWC use, the FEIS also contains planning guidance for a wide variety of activities at Lake Crescent and contains five planning alternatives, each of which is fully analyzed in the document. These alternatives include the NPS preferred alternative, a "no action" alternative, as well as an alternative which was submitted by the Friends of Lake Crescent (FOLC) during the public comment period. A significant number of proposals submitted by the FOLC have been incorporated into the final plan. (The FOLC is a non-profit organization of over 500 concerned citizens, property owners, and recreational users of the lake.)

The FEIS also contains written responses to all substantive comments which were received during the comment period.

Concurrent to Olympic's planning process for Lake Crescent, the National Park Service has been preparing national-level guidance regarding PWCs throughout the National Park System. Still under review in WASO and the Department of the Interior, these guidelines are expected to be released soon.

LTEM

Designing a long-term ecological monitoring program: Contact: Kurt Jenkins

The need for ecological monitoring at Olympic National park is recognized as a primary objective of the park's Resource Management Plan, which emphasizes the need to "systematically monitor [park] resources to understand the natural processes which govern them, and to detect changes which may require intervention." The Olympic Field station of the USGS-Forest and Rangeland Ecosystem Science Center is working with park staff to develop a credible long-term ecological monitoring (LTEM) program in the park. Objectives of the current developmental phase are to develop an integrated monitoring framework for Olympic National Park, identify potential indicators of park health, and design and test field sampling methods for monitoring selected indicators. Lowland forest ecosystems including forest biodiversity and succession, forest dynamics, and forest health have been identified as key components of an integrated monitoring program at Olympic National Park. This summer we have initiated several field research and inventory projects that have been designed to evaluate potential indicators of park health and field monitoring strategies. First, we are investigating the statistical properties of several vegetation measurements on a pilot group of permanent vegetation plots. Such studies will allow us to determine the optimum size and number of vegetation plots and sampling units needed to characterize a vegetation type for long-term monitoring of forest structure and composition. Second, we will evaluate several integrative indicators of forest status by examining how potential indicators respond to ecosystem disturbances already present in the system and their sensitivity to gradients of change. Lastly, we are conducting baseline surveys of several key taxonomic groups of wildlife, including ungulates, breeding birds, and small mammals (including bats), and amphibians. These basic inventories of wildlife community patterns will be used to develop future wildlife monitoring programs.

PARKWIDE FACILITIES

Contact: Jim Chambers

- o There are sixteen developed areas in the park.
- o Maintained facilities include nearly 500 buildings; 586 miles of trail; 168 miles of roads; 64 sewer systems with 3 treatment plants; 30 water systems with 3 treatment plants; 11 telephone systems; and 11 electrical systems with 2 hydro plants; 21 campgrounds; and 158 pieces of mobile equipment.
- o Maintenance staff consists of 59 permanent and 28 seasonal employees, assisted by up to 35 volunteers.

Background: We continue to upgrade many of the facilities in all areas of the park. Emphasis has been placed on upgrading deteriorating utility systems and structures, especially visitor use facilities. Historic buildings (110 parkwide) have received greater attention. The trails program has been focusing on storm damage repairs, upgrades of tread and replacement of bridges. Roads have continued to be maintained with increased emphasis on the interaction of road drainage and the protection of fisheries in adjacent streams and culverts. Our telecommunications program includes support for the

entire cluster. Radio, telephone, and computer systems continue to be upgraded and improved. Support for upgrades in all five of the major concession areas has occurred.

Current Status and/or Concerns: Maintenance programs continue to emphasize visitor use facilities including campgrounds, amphitheaters, and contact stations. Housing, especially for seasonal employees, is a high concern. Safety and health related items will remain our highest priority. Winter storms and weather conditions continue to affect the scheduling of maintenance projects. Using the Maintenance Management System (MMS), a backlog listing is maintained of identified maintenance needs. Larger projects are included in Cyclic, Repair-Rehabilitation, and Line Item programs, with over 200 separate projects listed with an estimated cost of more than \$53 million. Planning projects scheduled this year include design work for a new roof structure on Hurricane Ridge Lodge. Major construction projects accomplished in 1997/98 include replacement of the Sol Duc Falls bridge, completion of reconstruction of two historic cabins at Rosemary, reconstruction of Graves Creek Road, replacement of three water tanks, construction of a new sewage disposal mound at Ozette, replacement of a sewage lift station at Kalaloch Lodge, reconstruction of Second Beach trail near LaPush, and replacement of Beach Trail 4 bridge at Kalaloch. Projects to be completed this year include completion of three trail bridges in the Quinault drainage, construction of a sewage disposal mound at the Hoh, re-roofing several buildings parkwide, painting the Port Angeles visitor center, construction of a public restroom at the Quinault visitor center, replacement of several pit/vault toilets, and upgrading docks at Lake Crescent and Ozette, in addition to numerous smaller projects and routine maintenance. The concessioner at Lake Crescent Lodge will also be undertaking some preservation maintenance including window replacement, landscaping and site lighting upgrades.

Ongoing projects include cleanup of acquired inholder properties, replacement of trail bridges, upgrading campgrounds and several projects under the heading "visitor use and support facilities upgrades."

#### QUILEUTE BOUNDARY ISSUE

Contact: John Aho

- o The Quileute Tribe believes it has a legitimate claim to several parcels of land and river located in the Mora subdistrict of Olympic National Park.
- o ONP staff and the Quileute Tribe jointly developed a Draft Quillayute Northern Boundary Settlement Agreement to remedy and settle the dispute and other outstanding Tribal issues in the Mora area.
- o The Quileute Tribe presented the Draft Agreement and a draft of legislation to change the park boundary to Congressman Dicks.

Background: The northern boundary of the Quileute Reservation has been contested by the Quileute Tribe for several decades. The Quileute Tribe is claiming land and river totaling over 200 acres at Rialto Beach and along the lower Quillayute River. Their claim dates back to early homesteading boundaries in the area, major changes in the course of the Quillayute River, and Treaty promises made by the federal government in the 1800s. Numerous

attempts to resolve this issue have been attempted in the past; the NPS solicitor has advised the NPS on its present actions.

Current Status and/or Concerns: The park and regional office staff conducted numerous meetings with the Tribe in an effort to work out a settlement agreement so that litigation can be avoided. A conceptual agreement has been reached; finishing language is being developed for the agreement and draft legislation. The Tribe has forwarded it to their political representatives in Congress.

Legislation to permanently resolve this issue likely will be introduced. Any changes to park boundaries will be of concern to major environmental groups, the general public, and state and local constituencies. It is essential that opportunity for public review and input be provided before legislation to change the park boundary is passed. It is strongly recommended that Interior/NPS conduct a NEPA compliance process; i.e., an EIS is needed.

#### RECREATION FEES

Contact: Loretta Hansen

In 1995 Congress passed legislation (P.L. 104-134) mandating federal land management agencies to implement additional recreation fees under an experimental program. The stated purpose of the Recreation Fee Demonstration Program is "to demonstrate the feasibility of user-generated cost recovery for the operation and maintenance of recreation areas or sites and habitat enhancement projects on federal lands." Revenue is to be used to address repair and maintenance priority projects, signs, habitat or facility enhancement, and resource preservation projects.

Legislation has changed slightly, now allowing agencies to retain 100% of all recreation fee revenue, with 80% retained at the recreation site (park) and 20% distributed based on national NPS priorities. This change will increase project funding at Olympic by over \$600,000 based on current estimates. Over \$521,000 in project revenue was received from FY 97 recreation fees for projects at Olympic National Park. We currently estimate the park's 80% share for projects (above the cost of collection) will exceed \$2,500,000 over the next two years. All recreation fee revenue funding is in addition to Congressional budget appropriations for park operations. The current 3-year experimental program will probably be extended by several years, hopefully followed by permanent legislation for a similar program.

We have found broad public support for user fees which directly benefit the national parks. Meetings with user groups resulted in improvements in both fee and project plans, and deflected most concerns. (One such improvement is the short-term volunteer program, with a fee-waiver pass for a 16-hour minimum work commitment. Call (360) 452-4501, ext. 219, for application information.)

Improvements in the park will be increasingly obvious as funded projects get further underway. Fee-funded projects are in all areas of the park. Find out exactly what these projects are in your areas. Point them out to visitors and thank them for their support when you have the opportunity this summer!

Current fees, fee revenue data, and fee-funded projects are listed below. Additional projects will be approved this summer.

**Entrance Fees:**

\$10 - Single vehicle 7 consecutive day visit  
 \$ 5 - Individual on foot or bike, or bus/van passenger (not commercial tour)  
 \$20 - Olympic National Park Annual Passport  
 \$50 - Golden Eagle Annual Passport, valid in all national parks  
 \$10 - Golden Age Lifetime Passport, age 62+, valid in all national parks  
 Free - Golden Access Passport, for permanently disabled persons  
 \$25 to \$200 - Commercial Tour Bus/Van, various rates

**Camping Fees - per night:**

\$12 - Kalaloch and Sol Duc  
 \$10 - Altaire, Dosewallips, Elwha, Fairholm, Graves Creek, Heart O'the Hills, Hoh, July Creek, Mora, Ozette, Staircase  
 \$ 8 - Deer Park, Queets, South Beach  
 (With a Golden Age or Golden Access Passport, camping fees reduced 50%)

**Wilderness Use Fees (overnight):**

\$ 5 - Registration fee; **plus** \$2 per person (over 16) per night;  
 Maximum per-trip rates:  
 \$ 50 - Up to 14 nights, maximum 6 people  
 \$100 - Up to 14 nights, group of 7-12 people  
 Annual Pass:  
 \$ 30 - Wilderness Use Pass (good for 12 months from the month of purchase)  
 \$ 15 - Each additional household member

**RV Sewage Dump Station Use:** Fairholm, Hoh, Kalaloch, Mora, Sol Duc

\$ 3 - per use

**Parking at Lake Ozette:** \$ 1 - per day

**FY 97 Recreation Fee Revenue:**

Park Entrance	\$ 1,116,675	[\$ 648,196 in FY 96]
Commercial Tours (no change in rates)	15,380	[\$ 15,180 in FY 96]
Frontcountry Camping	616,063	[\$ 586,120 in FY 96]
RV Sewage Dumping	2,876	new
Wilderness Use Permit	95,387	new
Parking at Lake Ozette	4,655	new
Total Recreation Fee Revenue:	\$ 1,851,036	[\$1,242,200 in FY 96]

**Approved Projects**

	Project Total \$:	Auth. w/FY97 \$:
Improve Information to Backcountry Users	150,000	50,000
Rehab Backcountry Trails Parkwide	150,000	50,000
Wilderness Trip Video and Planner	32,000	1,000
Wilderness Camp Area Revegetation	200,000	68,427.74
Rehab Backcountry Historic Ranger Stations	108,000	36,000
Stabilize Shelters	60,000	20,000
Rehab Campground & Interp Trails	59,000	59,000
Paint Public Use Buildings Parkwide	75,000	25,000
Replace Visitor Orientation Film	32,000	10,000
Reroof Public Use Buildings	75,000	0
Rehab Restroom Quinault VC	50,000	50,000

Replace Restroom Doors/Privies	135,000	45,000
Replace Lighting Hoh VC (fixtures only)	6,000	6,000
Replace Picnic Tables Parkwide	150,000	30,000
Replace Campground Fire Grates	33,000	11,000
Gravel Road Surfaces and Parking Areas	230,000	50,346.26
Replace Ozette Trailhead Interp Wilderness Exhibit	20,000	10,000
Hurricane Parkway Slope Stabilization	13,000	
Replace Trailhead Wilderness Interp Panels	12,000	
Rehab Historic Frontcountry Ranger Stations	90,000	
Rehab Historic Frontcountry Landscapes	75,000	
Repair Water Distribution System	40,000	
Replace Regulatory & Info Signs	40,000	
Rehabilitate Hurricane Hill Facilities	242,000	
Repair Hurricane Lodge Exterior	205,000	
Rehabilitate Hoh Campground	120,000	
Total Project Costs:	\$ 2,402,000	

### RESEARCH PERMITS

Contact: Paul Crawford

- o Persons and institutions conducting research in the park need a Special Use Permit for Research/Collection.
- o Approximately 50 research permits are issued each year.

Current Status and/or Concerns: All persons conducting research in the park should have a current permit in their possession. Conditions specific to each project are listed on the back of the permit. Names of all individuals working on a project are also on the back of the permit.

When a permit is issued, a copy of the permit and cover letter is sent to ranger staff in all areas of the park where work is authorized under that permit. Permitted researchers do not pay entrance, parking, or backcountry fees but they do pay frontcountry campground fees; each of them should have a letter verifying their fee status.

If park staff have questions about a researcher or a project, contact Paul Crawford (the park's research permit coordinator) or the park liaison for that particular project (the liaison is identified on the front of the permit).

### WATER RESOURCES

#### West Twin Creek Study:

Contact: Bill Baccus

- o University of Washington study examining old-growth forest processes continues in the Twin Creek drainages.

Background: The West Twin Creek project (in the Hoh River drainage) is a long-term monitoring program which started in 1984. The study is conducted by the University of Washington College of Forest Resources, with field assistance from park natural resources staff. The project is designed to examine precipitation chemistry and ecosystem function, including hydrology, geochemistry, and nutrient cycling.

Current Status and/or Concerns: This study will continue in 1998. The location of this site on the Olympic Peninsula makes this one of the "cleanest" precipitation collection sites in the country. Because of this, it is an excellent baseline site for indicating large-scale (global) changes. Recent data indicate the possibility of increased nitrates, which may indicate long-range transport (Asian agricultural land use changes) or perturbation from local land use changes.

This year, the study also began looking at the role of disturbance in forest nutrient cycling. Following a large wind storm in the winter of 1997, a mosaic of large forest gaps was created in the West Twin drainage. Precipitation, soil temperature and soil nitrification in different sized gaps are being studied.

### WILDERNESS MANAGEMENT

#### Wilderness Information Center (WIC):

Contact: Larry Lang

This is the third season of operation for the Wilderness Information Center. The basic mission of the WIC is to coordinate all of the various trail information, reservation and quota systems in use in the park, as well as to provide a central location for public contact on all matters concerning wilderness visitation. The WIC is located behind the main visitor center in Port Angeles.

Hours of operation for the center are Tuesday through Saturday 8 a.m. to 4:30 p.m. until Tuesday, June 23, when the summer schedule will be in effect: Sunday through Wednesday, 8 a.m. to 4:30 p.m.; Thursday through Saturday, 7:30 a.m. to 7:30 p.m. After Labor Day, Monday, Sept. 7, hours will be reduced and seven-day per week operation will continue as long as staff is available.

A much expanded Web site is now available on the Internet for wilderness trip planning information. The Web address is NPS.GOV/OLYM. Trail descriptions and conditions reports, trip planning information, and resource protection information is provided. A free Wilderness Trip Planner newspaper is also available on request for those planning overnight trips into the park wilderness.

#### Wilderness Reservations, Quotas and Permit Registration: Contact: Larry Lang

Reservations are required for all overnight backpacking trips in the Ozette coastal area. Reservations can be made no more than 30 days in advance by calling the Wilderness Information Center at (360) 452-0300. Visitors need to have a reservation before arriving in the Ozette area to begin their backpacking trip.

1998 is the third season for which advance reservations will be available and quotas in effect for Grand Valley. All backpackers beginning a hike in the Hurricane area are asked to stop by the WIC for a backcountry permit. Permits are not available at Hurricane area trailheads, including: Lake Angeles/

Heater Park, Switchback Trail, Hurricane Ridge Lodge, and Obstruction Point Road. A self-registration box is available at the WIC for those who require a permit for the Hurricane area during hours the center is closed. However, no self-registration is available for hikes into quota areas.

The quota system for Flapjack Lakes and Lake Constance will operate the same as in previous years. However, reservations will be available only by calling the Wilderness Information Center.

Trailhead self-registration is no longer available for trips originating at Whiskey Bend and Olympic Hot Springs Trailheads. Hikers are asked to stop by the Elwha Ranger Station to register. A self-register box is available at the Ranger Station for after hours arrivals.

Backcountry permits are available at many other trailheads and ranger stations as in past years. Permits for all areas of the park may also be obtained at the Wilderness Information Center. All park personnel working in the field or otherwise receiving good field reports are urged to forward information to the WIC.

**Wilderness Monitoring:**

Contact: Ruth Scott

Wilderness monitoring, carried out by wilderness rangers and wilderness resources staff, will measure the existing conditions of wilderness resources and the visitor's wilderness experience to assist in Wilderness Management Plan development and implementation.

Background: To establish a baseline on wilderness conditions and to determine if wilderness standards are being exceeded, monitoring is conducted by wilderness rangers and wilderness resources staff. Campsite areas are measured for resource impacts and visitor use is measured to determine impacts on wilderness solitude.

Current Status and/or Concerns: Wilderness ranger staff will monitor visitor experience conditions and new impacts to resources. The wilderness resources crew led by Bill Baccus will map and monitor campsite impacts throughout the park. Special emphasis will be placed on an inventory of the parks trail system and campsite facilities.

This summer, a survey of wilderness users will be conducted in order to gain valuable information for the Wilderness Management Plan EIS. This survey was developed by a group of park staff, led by Ruth Scott and with oversight from the Arthur Carhart Wilderness Center.

**Wilderness Management Plan:**

Contact: Ruth Scott

The Wilderness Management Plan is in preparation for public review.

Background: The Olympic National Park Wilderness Management Plan will provide guidelines for the management and protection of the Olympic Wilderness (95% of the park was congressionally designated as Wilderness in 1988). A park task force led by Ruth Scott, with members Bill Baccus, Larry Lang, Kevin MacCartney, former Lake Crescent District Ranger Carl Newman, Bill Rohde,

Roger Rudolph, and Gary Vogt used the Limits of Acceptable Change (LAC) planning process to develop the plan. Two internal reviews of the plan were completed by the park staff as well as an additional review by the management team. The next strategy is development of a draft Environmental Impact Statement (EIS).

Current Status and/or Concerns: Following development of the draft EIS, a range of alternatives will be presented for public review.

**Wilderness Ranger Program:**

Contact: Curt Sauer

- o Protection of wilderness resources and education of groups using wilderness areas of the park are accomplished through backcountry patrols throughout the park.
- o Information gathered from these patrols will be used for future decisions on use levels, access points, and revision to regulations.

Background: Ranger presence in the wilderness varies by season and location throughout the park. Roving patrols or programs based from fixed backcountry stations primarily focus on visitor contacts to reduce impacts by education or regulation enforcement. Other activities include trail work, station maintenance, resource monitoring, human waste management program, search and rescue, wildland fire response.

Current Status and/or Concerns: The overriding concern is the continual increase in use levels, especially in "shoulder seasons" and at trailheads not developed to handle the number of visitors now using the backcountry (e.g., Ozette). Conflicts with wilderness ethics and management needs, such as helicopters in wilderness to remove privy vaults, are not resolved. Appropriate levels of commercial activity and types of activities are also of concern.

**Wilderness Rehabilitation Program:**

Contact: Ruth Scott

- o During the 1998 field season, wilderness rehabilitation efforts will take place at Hoh Lake in the high country of the Hoh River drainage.
- o Since 1988, Olympic's greenhouse has produced over 233,000 plants for outplanting to the wilderness.

Background: The wilderness restoration program's objective is to rehabilitate impacts on vegetation, soils and wilderness character from overuse and lack of "leave no trace" skills. Campsite areas at Lake Constance, Upper Lena Lake, Grand Valley, Morganroth Lake, Lunch Lake, Heart Lake and Sand Point have been rehabilitated over the past 10 years. Main trails have been repaired by trail crew, and campsites and social trails upgraded or revegetated by the wilderness resources crew.

Since 1988, the greenhouse operation (overseen by Matt Albright, Greenhouse Manager) has propagated over 233,000 native plants. Several hundred volunteers including Sierra Club Service Groups and YMCA Earth Corps have assisted with the restoration work. All projects have been planned and

implemented with funding assistance from Washington State NOVA grants. The Hoh Lake project is being partially funded with Wilderness fees moneys as well as a NOVA grant.

Current Status and/or Concerns: This fall, the wilderness resources crew and trail crew will be working on a trail and campsite rehabilitation project. The project includes hardening and delineation of campsites and planting 20,000 plants into closed campsites and social trails. The trail crew will be upgrading several miles of the Hoh Lake trail, installing drainage structures to decrease erosion and replacing rotting puncheon with gravel turnpikes. Anyone interested in volunteering for this year's fall planting can contact Ruth Scott at 452-4501 ext. 285 or Bill Baccus at ext. 286.

The wilderness resources office is currently applying for another NOVA grant to complete a trail and campsite rehabilitation project in 1999 in the Potholes area, along the High Divide trail in the Sol Duc drainage.

## WILDLIFE MANAGEMENT

### Cougar-Human Interactions:

Contact: Patti Happe

Background: The cougar, or mountain lion, is a large and potentially dangerous animal in the park that is common but not often observed. There has been one documented case of human injuries in the park due to a cougar, which occurred in late May of 1996. Cougar attacks on humans are more rare than other natural hazards; far more human fatalities occur each year due to lightning, drowning, bee sting, or dog bite. During the 100-year period from 1890 to 1990, 53 attacks on humans by cougars, including 10 fatalities, were documented in North America, or about 0.10 deaths per year. Thirty of the attacks were in British Columbia, Canada, including 20 on Vancouver Island alone. During this same period 2 cougar attacks were reported in Washington State, including 1 fatality in Okanogan County in 1924. Nearly all of the victims were children or lone adults.

Between 1991 and 1997, 87 close-encounter incidents between cougars and humans have been documented in the park, including 12 near-attacks. In most of these incidents, the animal appeared suddenly near people but seemed more curious than aggressive and soon departed. In 1993, a series of incidents at Kalaloch along the Pacific Coastal Area required removal of 2 cougars that persistently approached people and attacked pets. In 1993 a cougar also chased a person riding a bicycle along the Elwha Road, grabbed the bicycle briefly, and remained in a stand-off with the person for a few minutes until other visitors arrived. In 1994, a five-year old boy was attacked by a cougar in the upper Dungeness drainage alongside the park. The animal was quickly driven away and the boy sustained only minor injuries, but would have been seriously injured or killed without a quick response by nearby adults. Finally, on May 24, 1996, an individual was attacked by a cougar as he was changing his clothes after a bike ride. He successfully fought off the cougar, but he sustained some minor injuries.

Current Status and/or Concerns: A similar increase in cougar-human incidents has occurred in other national parks such as Yosemite, Redwood, Big Bend, and

Glacier. Available information suggests that cougars have increased throughout the West in recent years with increasing deer populations and improved protection. Increased contact and familiarity with people by cougars has also apparently occurred as human activity expands into wild lands. However, the very large number of hikers and campers now using national parks and the relatively small number of cougar observations suggest that most animals clearly avoid direct contact with people, and are not a menacing hazard.

A park handout on safety in cougar country offers practical advice on preventing interactions and recommended behavior when an encounter does occur. Details on identification and natural history of cougars are on the back of the handout. The front of the handout, with the most critical information, can be posted at trailheads and visitor centers. Warning signs are also available for posting where cougars have been observed more frequently than usual. Park employees are asked to report **ALL** cougar sighting as soon as possible on the Cougar Report Form (available at ranger stations and on park E-mail) and forward the information to Patti Happe. Include the NAME AND TELEPHONE NUMBER of the observer, so that a prompt follow-up can occur to obtain further information if necessary.

**Endangered Animal and Plant Species:**                      Contacts: Patti Happe, Rich Olson,  
Shelley Hall

The following animals and plants in the park are listed as endangered, threatened, or candidate species under the federal Endangered Species Act; those with an asterisk are not known to be located within the park, but may occur on the Olympic Peninsula. See related issue statements on the Marbled Murrelet, Northern Spotted Owl, and Gray Wolf.

**Endangered**

Brown pelican (*Pelecanus occidentalis*)  
Leatherback sea turtle (*Dermochelys coriacea*)\*  
Peregrine falcon (*Falco peregrinus*)  
Gray wolf (*Canis lupus*; extirpated)

**Threatened**

Bald eagle (*Haliaeetus leucocephalus*)  
Marbled murrelet (*Brachyramphus marmoratus*)  
Northern spotted owl (*Strix occidentalis caurina*)  
Northern (Steller's) sea lion (*Eumotopias jubatus*)\*  
Snowy Plover (*Charadrius alexandrinus*)

**Candidate Animals**

Bull trout (*Salvelinus confluentus*)

**Species of Concern, Animals**

Cascades frog (*Rana cascadae*)  
Long-eared myotis (*Myotis evotis*)

Long-legged myotis (*Myotis volans*)  
 Northern goshawk (*Accipiter gentilis*)  
 Olive-sided flycatcher (*Contopus borealis*)  
 Pacific fisher (*Martes pennanti pacifica*)  
 Pacific lamprey (*Lampetra tridentata*)  
 Pacific Townsend's big-eared bat (*Corynorhinus (=Plecotis) towndendii towndendii*)  
 River lamprey (*Lampetra ayresi*)  
 Tailed frog (*Ascaphus truei*)

### Species of Concern, Plants

Pink sand verbena (*Abronia umbellata spp. acutalata*)  
 Thurber's reedgrass (*Calamagrostis crassiglumis*)  
 Golden paintbrush (*Castilleja levisecta*)

### Marbled Murrelet:

Contact: Shelley Hall, Patti Happe

- o The marbled murrelet is a small seabird that nests in old-growth forests and is federally listed as threatened. Although murrelets are marine birds, they nest up to 50 miles inland.
- o Little is known about its status in the park, although it has been documented in all major river drainages. An intensive survey effort was started in 1987 and will increase in 1998.

Background: The marbled murrelet was listed as threatened under the Endangered Species Act in 1992. As a seabird which nests in old-growth forests, this species is suffering population decline because of threats at sea (oil spills, gill nets, etc.) and inland (loss of old-growth forest habitat). It is believed that less than 5,000 remain in Washington State and that the population is continuing to decline.

Murrelets feed at sea and nest up to 50 miles inland. They are very difficult to document because they are small, they fly very fast, they nest on a limb (with no nest structure) 50 ft. or higher in conifers, they are generally silent when approaching the nest, and they fly inland during periods of very low light. Inland surveys are conducted by observing for 2 hours beginning 45 minutes prior to sunrise.

Much of the park's lowland forest is excellent habitat for murrelets, and is assumed to be occupied by these birds. The extent to which the park is actually used by murrelets is unknown because survey efforts have been limited in the past.

Current Status and/or Concerns: Little is known yet about murrelet distribution and abundance in the park. Nesting activity is believed to occur at lower elevations (below 3,000') in all major river valleys of the park. Frontcountry areas surveyed in 1996 and 1997 were: Queets, Kalaloch, Hoh, Mora, Lake Crescent, Sol Duc, Elwha, and Heart of the Hills. Data indicate that murrelets are present in all of the areas surveyed thus far. Behaviors thought to indicate nesting have been observed at many survey areas within the park. Grounded chicks and eggshell fragments indicating nesting activity have been found throughout the park. In 1997, an active nest was located in the

park. A video camera was installed to monitor activity. Of five nests known on the West Coast in 1997, the ONP chick was the only one to successfully fledge!

Past surveys have focused on developed areas because we need information to comply with the Endangered Species Act. In 1998, surveys are being expanded into backcountry portions of the park. We will continue to survey at frontcountry areas in 1998: Queets, Kalaloch, Mora, Hoh, Graves Creek, Elwha, and Lake Crescent. We will begin surveys in backcountry areas (Elwha, Queets and E. Fork Quinault) as well.

If you hear murrelets in the park, or especially if you find a chick or eggshell fragment, please report this information to Shelley Hall or Patti Happe immediately.

**Mountain Goat EIS:**

Contact: Shelley Hall

- 0 A draft environmental impact statement (DEIS) for mountain goat management was released to the public in March 1995.
- 0 Three alternatives were fully developed and analyzed in the DEIS:
  1. No Action.
  2. Eliminate all goats from the park by shooting from helicopters (the NPS preferred alternative).
  3. Eliminate all goats from the park, allowing for a short-term live-capture program before the shooting program.
- 0 Thirteen other alternatives were considered, but rejected in the DEIS.
- 0 Two public meetings were held in May 1995. The period for public comment ended July 17, 1995. Almost 1,200 comments were received and analyzed by park staff.
- 0 Release of the final EIS (FEIS) has been postponed due to public and congressional concerns. There is currently no timeline for release of this document.
- 0 Plans for 1998 include more vegetation monitoring and an additional independent review of the science of the issue.

**Background:** Mountain goats are not native to the Olympic Peninsula. During the 1920s, 12 mountain goats were introduced into what is now Olympic National Park. By 1983 these goats had grown to a population of almost 1,200 animals throughout the alpine and subalpine portions of the park. Goats impact ecosystem components by grazing, trampling and wallowing. Impacts include changes in plant communities, soil erosion, and damage to rare and endemic plants.

A 1981 environmental assessment (EA) resulted in the Experimental Management Program. This program included efforts to live-capture goats using many different methods, as well as experiments with various methods of contraception and sterilization. In 1987, a second EA resulted in an Operational Management Program. This program was designed to create a goat-free core in the park and to control goat populations along the eastern park boundary. The program called for live-capture removals for three years (1988-1990) followed by a shooting program.

In 1990 the park canceled the third year of the capture program due to a number of factors. The results of an operational analysis by the Office of Aircraft Services (DOI) and a risk survey conducted by Clark University revealed unacceptably high risk to park personnel during the capture operations. In addition, the unavoidable mortality rate for handled goats was nearly 20% in 1989. Research also indicated that the highest density of rare and endemic plants occur along the eastern boundary.

Park staff have live-captured almost 700 goats within Olympic National Park; 407 goats have been removed from the park and released elsewhere in Washington and other western states.

The Environmental Impact Statement process was begun in 1991 to evaluate management alternatives. There have been no direct management actions taken on goats since the 1989 field season. Population censuses conducted in 1990, 1994, and 1997 indicate a population of approximately 300-400 goats.

Current Status and/or Concerns: This issue has received considerable media attention, locally and nationally, with more to come.

Comments on the DEIS received from the public were not overwhelming in any direction. Generally speaking, opposition came from animal rights groups, principally the Fund for Animals and the Humane Society. Solid support for the preferred alternative came from conservation groups, such as the Sierra Club, Audubon Society, Wilderness Society and the National Parks and Conservation Association. Other groups and members of the public support elimination, but would like to see the park issue hunting permits.

The Final EIS has been postponed due to congressional concerns. The Office of the Secretary of the Interior is coordinating an independent scientific review of all relevant information to date. Results of this review are expected in spring or summer, 1999. At that time, decisions will be made regarding the future EIS process.

**Northern Spotted Owl:**

Contact: Patti Happe, Erran Seaman

- o Olympic National Park is involved in a regional management issue concerning provision of adequate protection for the Northern Spotted Owl and continued logging of old-growth forests on the Olympic Peninsula.
- o A four-year research effort by the NPS and the Biological Research Division of the USGS estimated the spotted owl population throughout the park interior between 1992 and 1995. Monitoring of reproductive and survival rates continues at approximately 50 owl territories throughout the park.

Background: The Northern Spotted Owl was listed as threatened under the Endangered Species Act in 1990, due to population declines following removal of old-growth forest habitat across its range.

There was a concern that spotted owls on the Olympic Peninsula were at significant risk due to isolation, low overall numbers (through habitat changes around the park), and a vulnerability to further habitat loss due to large-scale natural disturbances such as wind and fire. About 45% (416,464

acres) of the park has been estimated to be suitable owl habitat. Park lands contribute about half of an 847,000-acre Designated Conservation Area (DCA) that has been proposed for the Olympic Peninsula in the owl recovery plan.

The spotted owl recovery plan calls for local recovery actions, including active inventory and monitoring of owls in each DCA. In 1990 the Interagency Scientific Committee estimated a park breeding population of 60 to 80 pairs. This estimate was based largely on home-range studies conducted outside the park, since rigorous, modern surveys had not been initiated in the park. The rugged mountainous terrain of the park interior presents special difficulties in attempting to estimate the size of the owl population. Most of the suitable habitat occurs on formidable steep and densely forested mountain slopes, with little road or trail access. In contrast, owls and habitat on adjoining federal, state and private lands are accessible through a network of logging roads and have been more thoroughly surveyed.

Current Status and/or Concerns: The owl inventory project was completed in 1995. It involved intensive, off-trail surveys of territorial breeding pairs within large census plots located randomly throughout the forested habitat of the park interior. Plots averaged approximately 2,000 acres in size and were surveyed 1-5 times in one year. A total of 35 plots were sampled, amounting to about 72,618 acres (10%) of the potential owl habitat in the park.

Owls were located by performing daytime "hooting" surveys along a network of cross-country transects established at 0.25 mile intervals to provide 100% coverage of each census plot. The birds located were leg-banded where possible for individual identification and capture-recapture analysis. Information was also obtained on survival and reproductive rates, habitat and elevational use by owls.

The results of these surveys have been used to develop spotted owl density estimates (owl pairs per km<sup>2</sup>) for the total area sampled, which was extrapolated to produce an overall estimate of owl numbers in suitable habitat elsewhere in the park interior. The estimated population is 229 (+71) pairs of territorial owls across the park interior. Owl densities in the park are at least twice that found in the fragmented forests outside the park. Densities are also higher on the east side of the park than on the west (0.15 vs. 0.08 pairs/km<sup>2</sup>, respectively).

Monitoring of 50 spotted owl territories per year continued after the completion of the inventory project. This monitoring is for the purpose of determining survival and reproductive rates in the park, and contributes to the effectiveness monitoring component of the President's Northwest Forest Plan.

An analysis of the spotted owl population on the peninsula (including the park) was conducted in January 1995. The analysis team concluded that the peninsula population appears to be stable and well-distributed, largely as a result of the core of protected federal land (National Park and National Forest).

**Wildlife Observations:**

Contact: Patti Happe, Shelley Hall

Each year visitors and staff observe or receive reports about wildlife throughout the park. Some kinds of observations are more important than others. Those in **bold** below should be reported as soon as possible. At a minimum, report the observer's **NAME** and **TELEPHONE NUMBER** so that a timely follow-up can occur if more information is needed.

**MOST IMPORTANT:**

1. **Hazardous Situations:** *Visitor close-encounters or injury, property damage (cougar, black bear), oil-spills, plastic-entangled marine birds and mammals*
2. Threatened, Endangered or Especially Rare Species: **Spotted owl, marbled murrelet** (including egg shells, downy chicks, and adults), bald eagle, **peregrine falcon, fisher, possible wolf sightings.**
3. Introduced and Invading Species: Mountain goat, barred owl, opossum.
4. Marine Mammals: Whales, sea otter; observations, *strandings, carcasses*; ALL STRANDINGS REPORT FIRST TO SHARON NEWKIRK AT THE MARINE SANCTUARY (360) 457-6622.
5. Other Species of Concern (candidate ESA, rare, or little known):  
     Goshawk, Merlin  
     Old-growth forest amphibians  
     **Cougar** (all observations and human-interactions)  
     Other raptors (golden eagle)  
     Neotropical-migrant birds

**INFORMATION NEEDED:**

1. Species observed, YY-MM-DD, location (site-drainage), number observed, age, sex, reproduction, activity-behavior, reporter/station, etc.
2. Observer's NAME & TELEPHONE NO. (area code, address, affiliation).

**SEND OBSERVATIONS TO:**

1. Nearest Park Ranger Station, Visitor Center.
2. Patti Happe, wildlife biologist. NRM/ONP (use Wildlife Observation Form on cc:mail blank-forms bulletin board; or phone 360-452-4501(x240)).

**Wolf Reintroduction:**

Contacts: Patti Happe, Kurt Jenkins

**Background:** The park has been approached by representatives of the Defenders of Wildlife and Congressman Norm Dicks about exploring the possibility of restoring gray wolves into Olympic National Park (OLYM). Because NPS policy encourages restoration of extirpated native species where feasible, OLYM is

cooperating fully with this effort. Listed below is some background information that is pertinent to the wolf restoration effort.

- o The wolf was here historically: The Gray Wolf occurred throughout the Olympic Peninsula including the area now in Olympic National Park, but was trapped and poisoned to extinction by about 1930. No reliable information is available on the original densities of wolves on the Olympic Peninsula, although it seems likely that one or more packs may have occurred in each major river drainage.
- o Suitable stock for reintroduction: Early 20th century biologists designated 24 subspecies of wolves in North America, including *Canis lupus fuscus*, the northwestern timber wolf. Many biologists today view these subspecific designations with great skepticism. Based on genetic analyses, it is now believed that there were only 4-5 subspecies present in North America historically. Suitable stock for reintroduction into OLYM could likely be found in southern mainland BC or Vancouver Island.
- o Suitable habitat: Although the park contains over 1,400 miles<sup>2</sup>, wolves would probably occupy a smaller area during the winter (i.e., lower elevation ungulate winter range, or areas below 2000'). There are over 327 mi<sup>2</sup> of winter range within the park, the majority of which is located in the western and northern park drainages.
- o Suitable Prey Base: We would expect that elk and deer would be their primary prey, with smaller mammals serving as secondary prey. We estimate that deer and elk numbers in the park are similar to the numbers that were present before the park was formed, when wolves were still present. We estimate that there are about 5000 elk in the park during midsummer, but some subpopulations are migratory and winter outside the park. Consequently, there are 3500 to 4000 elk that winter within the park, and most of these occur in the western and northern drainages. We have no estimate of deer numbers in the park, but estimate that there are several thousand.
- o Population persistence: Wolf pack and territory sizes are highly variable, and little information is available on these attributes from long-established, unhunted populations. Pack size seems roughly related to prey size: wolves that feed primarily on deer typically occur in packs of 7 or fewer, those feeding on elk or moose in packs of 8-20. As a rough guess, we might expect 30 to 50 wolves (in packs of 7-10 animals) to occur on the Peninsula following reintroduction. Would a population of this size persist in isolation over time? We don't know. However, we do know that relatively small populations have persisted elsewhere for decades: 20-30 wolves have occupied 209 mi<sup>2</sup> Isle Royale N.P. for over 40 years (about 1 wolf/8 mi<sup>2</sup>) and 50-100 wolves have occupied Manitoba's 1158 mi<sup>2</sup> Riding Mountain N.P. for about the same length of time (about 1 wolf/15 mi<sup>2</sup>). Riding Mountain is completely surrounded by agricultural lands.
- o Conflicts with man: We expect little or no conflict with park visitors. Wolves will have to be controlled outside the park, and provisions made from the start to reimburse ranchers for loss of livestock. The Olympic

Peninsula supports more timber production than ranching; thus we expect fewer conflicts with livestock interests than were experienced in areas such as Yellowstone.

- o Conflicts with native wildlife: Since wolves co-evolved with other species, we expect no major problems in the park. Wolves may reduce the present abundance of coyotes.
- o Effects of wolves on mountain goats: Wolves are not expected to have a significant effect on mountain goat populations. It appears that the predator avoidance strategy of goats, to seek out steep cliffs, is an effective deterrent to wolf predation. In areas where wolves and goats co-occur with alternative prey (i.e., deer, elk, and/or moose), there is no evidence that goats constitute a significant amount of wolf diets, or that goat mortality due to wolf predation has a significant effect on goat population dynamics.

Current Status and/or Concerns: If wolves are to be restored to OLYM, it will only happen after extensive study and analysis have been conducted, and this effort will require substantial public involvement. The NPS is working in conjunction with the U.S. Fish and Wildlife Service, the U.S. Forest Service, Washington Department of Fish and Wildlife, and local tribes in this effort. During 1997 congress allocated \$300,000 towards Olympic wolf recovery. Those funds went to the U.S. Fish and Wildlife Service, and are being spent on two efforts: 1) Prey base studies, with emphasis on developing accurate methods for enumerating deer both in and out of the Park, and 2) a feasibility study, in which the biological, sociological and economic conditions which would influence the suitability of restoring wolves to the Olympic Peninsula, will be assessed. The feasibility study is being conducted by researchers from the University of Idaho, and is due to be completed in late October, 1997. If that study indicates that wolf restoration would be feasible, we will seek funds to initiate an Environmental Impact Statement.

**HAZARDOUS MATERIALS:**

Contact: Steve Valadez

- o Olympic National Park is committed to assuring full compliance by it's employees, concessionaires, permittees, tenants and other non-NPS park users with all applicable federal, state, and local hazardous material laws and regulations.
- o The following statues provide the regulatory framework for management of hazardous materials in Olympic National Park:
  - \* Resource Conservation and Recovery Act (RCRA), Subtitle C - (regulations found in 40 CFR Parts 260, 261, 262, 265, 266, 268, 270, and 279);
  - \* Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) - (regulations found in 40 CFR Parts 300, 302, 311, 355, and 370);
  - \* Occupational Safety and Health Act (OSHA) - (regulations found in 29 CFR Parts 1910.120 and 1910.1200);
  - \* Executive Order No. 12856, "Federal Compliance with Community Right-to Know Laws and Pollution Prevention Requirements;"

- \* Transportation Requirements - (regulations found in 49 CFR Parts 171 through 179);
- \* Washington State Administrative Codes (WAC) 173 -303, sections 9903 -9907.

Background: Olympic National Park recognizes it's responsibility to protect it's employees and the environment from any and all adverse effects associated with the handling, storage, and disposal of hazardous materials. Several documents detail procedures followed by Olympic National Park in hazardous materials management. These include: ONP Hazardous Materials Management Plan; NPS Hazardous Waste Management Handbook; and CERCLA Guidance Manual.

Current Status and/or Concerns:

- o The new office order #41, HAZARDOUS MATERIALS PURCHASING, USE, and DISPOSAL, was approved and distributed in April 1997. This order details procedures to follow in order to attain the "cradle-to-grave" level of management that hazardous materials requires. Included in these procedures is a 5 digit unique identification number which will be assigned to all hazardous materials in the park. This will allow for tracking of all hazardous materials from the time of purchase to their intended use or disposal as a waste.
- o Several pollution prevention measures have been implemented in Olympic National Park which have reduced the park's hazardous waste from 6,316 lbs in 1994, to 5,550 lbs in 1995, to 3,054 lbs in 1996.
- o Since 1993 Olympic National Park has kept from 10 to 16 employees trained (24 & 40 hr) in Hazardous Materials Operation. This training certifies personnel to work and supervise during Hazardous Material spills.

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