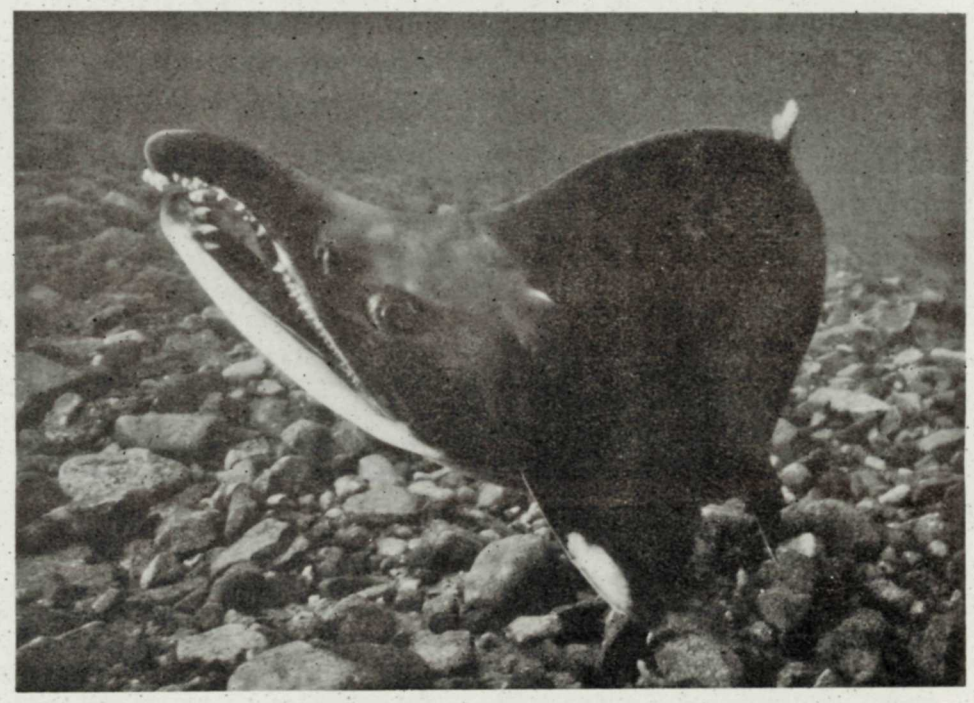
VOICE of the Wild Olympics

New Series, Vol 2, No 3 | Newsletter of Olympic Park Associates | December, 1994

Restoring the Wild Elwha Salmon

"Sports anglers are in fact customers of a multibillion-dollar industry every bit the equal of the old packing empires."

Brad Matsen, in **Reaching Home: Pacific Salmon, Pacific People** By Natalie Fobes, Tom Jay, and Brad Matsen. Seattle: Alaska Northwest Books. 1994.



Photograph by Natalie Fobes

Good Fishing Makes Good ene

Excerpted with permission from August 1994 article in **Fisheries** *(Vol. 19, No. 8): Restoration of the Elwha River Ecosystem, by Robert C. Wunderlich (fishery management biologist at U.S. Fish & Wildlife Service), Brian D. Winter (fishery biologist for National Marine Fishery Service), and John H. Meyer (fishery biologist with Olympic National Park).*

In 1992, the U.S. Congress passed the Elwha River Ecosystem and Fisheries Restoration Act (Public Law 102-495), the express purpose of which was the "full restoration" of the ecosystem and anadromous fish runs that historically inhabited the Elwha River in northwestern Washington state. The act provides a unique opportunity for ecosystem and fishery restoration because it allows for removal of two hydroelectric dams on the Elwha River....

Possibilities for Restoration Are Promising

The river historically supported a rich and diverse anadromous salmonid fauna, but now more than 115 river kilometers (rkm) of pristine anadromous salmonid habitat are totally blocked by the dams.....

Except for the two Elwha dams and the absence of anadromous fish, much of the Elwha River basin is in pristine condition. A greater proportion of the river basin, approximately 83%, lies within the park than any other river basin on the Olympic Peninsula. Natural ecological processes in many other north Olympic Peninsula rivers have been harmed by extensive land use, particularly timber harvest, but the Elwha basin remains largely in a natural condition above the dams. The river's water quality is rated by the Washington State Department of Ecology as class AA — extraordinary quality.....

Spawning Impeded Even Below Dams

Elwha Dam has stopped downstream movement of gravel for more than 80 years, leaving very coarse substrate in the lower 8 rkm; only limited amounts of substrate below both dams remain

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A life membership is $250.

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Contents

Write to Support Elwha Dam Removal

In November Park Service informational workshops were held on the Elwha River restoration Draft EIS. Two workshops were on November 14 in Port Angeles and one on Nov. 15 in Seattle. Participants had opportunities to comment on the document. OPA board members participated in all three workshops.

The DEIS examines four alternatives. Removal of both dams is the preferred alternative and the only means of fully restoring the Elwha salmon fisheries, as required by law. After public comment, a final EIS is expected to be released next spring. If the Secretary of Interior decides to follow the recommendation to remove both dams, a second EIS will be prepared to determine the best method of dam removal and sediment management.

Your opinion counts!

Your written comments on this Draft EIS on Elwha River Ecosystem Restoration are *very important*. Written comments will be accepted through December 23, 1994. Your message can be simple:

> *Support the preferred alternative of removing the dams. This is the only alternative that can fully restore the Elwha River ecosystem as required by law.*

If you wish, you may also comment on issues that you feel should be addressed in that second EIS on the methods proposed for use for dam removal. A key issue will be cost, since the new Congress appears intent on cost-cutting. A balance must be found that will protect the natural resource but also avoid prohibitively elaborate dam/sediment removal schemes whose cost might stall the project indefinitely.

Mail your comments to:
Sarah Bransom
National Park Service, Western Team
P.O.Box 25287
Denver, CO 80225-0287

Send copies to your congressmen.

Even if you can't mail a letter before Dec. 23, write to your congressmen. Senators Gorton and Murray and Congressman Norm Dicks *especially* need to hear your views.

The Honorable Patty Murray	The Honorable Slade Gorton	The Honorable Norm Dicks
United States Senate	United States Senate	U. S. House of Representatives
Washington, D.C. 20510	Washington, D.C. 20510	Washington, D.C. 20515

Mountaineers' Environmental Issues Course

The Mountaineers' second annual Pacific Northwest Environmental Issues Course begins in January. Enrollment is open to anyone with a desire to expand his/her awareness and knowledge of regional environmental issues.

This course is a program of class and field instruction designed to empower participants to take actions that will protect the natural beauty of the Northwest. Guest experts will conduct interactive discussions on forestry, salmon, water, wildlife, public lands, energy, and activism. Field trips will highlight these issues.

The course runs from January through May 1995. Course fees are $55 for Mountaineers members, $65 for nonmenbers, including textbooks. For more information, contact Loren Foss, Mountaineers Staff, 284-6310.

Good Fishing Makes Good ene: Restoring the Wild Elwha Salmon

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suitable for spawning by anadromous or resident salmonids.

The dams also increase water temperatures in the middle and lower reaches of the river in late summer and early fall because of heat storage in Lake Mills and Lake Aldwell. During years of low snow pack and rainfall, summer water temperatures exceed 18° C, which aggravate parasite and disease infestations, resulting in large losses of pre-spawning adult chinook in the lower river; approximately two-thirds of the 1992 return died prior to spawning....

Prior to hydropower development, the Elwha River was considered the most prolific fish producer on the Olympic Peninsula.... The Elwha was one of the few rivers in the contiguous United States that supported all the anadromous salmonids native to the Pacific Northwest: spring- and summer-fall-run chinook *(Oncorhynchus tshawytscha)*, coho *(O. kisutch)*, chum *(O. keta)*, pink *(O. gorbuscha)*, and sockeye salmon *(O. nerka)*, summer- and winter-run steelhead *(O. mykiss)*, sea-run cutthroat trout *(O. clarki)*, sea-run native char (Dolly Varden *(Salvelinus malma)*, and bull trout *(S. confluentus)*).

> "Run after run is disappearing, not from any official plan ... but rather from the outdated and erroneous idea that we as individuals cannot harm a species as great as the Pacific salmon."
>
> *Natalie Fobes,* in **Reaching Home: Pacific Salmon, Pacific People**

The Legendary Elwha Salmon

Elwha River was particularly renowned for its run of large chinook salmon. Brown (1982:61) stated that these salmon were "easily the largest on the Olympic Peninsula." He recounts how Manuel Quimper, a Spanish explorer, purchased a number of salmon of 45 kg (100 lbs) from Native Americans near the Elwha on 25 July 1790. These chinook salmon were apparently uniquely adapted to the temperature regimen, flow patterns, and other environmental variables found within the Elwha drainage, its estuary, and ocean migration route; some unknown factor or combination of factors selected for large size (Brannon and Hershberger 1984)....

Neither the Elwha nor Glines Canyon dams has provision for fish passage. When Elwha Dam was constructed, Washington law required fish passage wherever food fish (salmon) migrated upstream. Nevertheless, then-State Fish Commissioner Leslie Darwin allowed the dam builders (Olympic Power Company) to build a hatchery in lieu of a fishway by allowing the dam to "be considered a state obstruction for the taking of eggs to supply the hatchery" (Brown 1982)....

Anadromous fish have been restricted to the 8 rkm below Elwha Dam for close to 80 years, and their numbers are acutely reduced due to loss of upriver habitat. Nehlsen et. al. (1991) list native Elwha River sockeye salmon as extinct, spring chinook and chum salmon as possibly extinct, pink salmon at high risk of extinction, and sea-run cutthroat as a species of concern. Summer steelhead are considered depressed (WDF et. al. 1993).

Unfortunately, no large (45 kg) chinook salmon has been observed in the Elwha River for many years. The size of Elwha chinook salmon now appears to be typical of most other Puget Sound and Washington coastal rivers. However, Brannon and Hershberger (1984) believe the genetic potential for large fish has been preserved in the remnant stock, but current hatchery practices are suppressing its expression....

[R]etention of either or both dams, even with the provision of fish passage facilities, would not allow for full restoration of native anadromous fisheries such as chinook, chum, and pink salmon (USDI et. al. 1994). Assessments by the U.S. General Accounting Office (1991) and FERC (1994) have closely agreed....

In contrast, dam removal and restoration of anadromous fish would result in returns of fish to the river throughout the year, optimize use of all accessible portions of the watershed, produce much greater numbers of fish, and restore ecosystem processes. Wildlife prey would be provided by fish carcasses, juveniles, and eggs....

Restoring the Salmon Runs

[M]ost of the river's stocks would take advantage of the large amounts of pristine habitat within the park and could be expected to provide harvestable surpluses. Lower river spawners, such as chum and pink salmon, could require a longer recovery period as the lower river stabilizes after dam removal. Anadromous fishing opportunities would expand from the 8 rkm currently available to the entire river. Catches would also shift away from fisheries of short duration targeted on hatchery stock to year-round fisheries on wild stocks....

Reintroduction of existing Elwha fish stocks should yield the greatest adult return (Nickelson et al. 1986; Reisenbichler 1988), and use of native Elwha stock is a first priority in rebuilding fish runs. However, past hatchery introductions and lack of access to upriver habitat have depleted native Elwha stocks so nonnative introductions may be necessary for some stocks....

Natural recolonization is fully anticipated for some fish stocks because adult anadromous salmonids would gradually penetrate the upper drainage and reestablish themselves once access is regained. In Puget Sound, for example, when access to 145 rkm in the upper Skykomish River above Sunset Falls (a natural barrier) was provided, chinook and pink salmon penetrated the up-

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Mountain Goat Update

by Tim McNulty

The process of finding a meaningful solution to the problem of non-native mountain goats in Olympic National Park drags on. The Park Service's draft environmental impact statement which will outline the agency's proposed action is due out in February or early March of next year. Interested parties will probably have 30 to 60 days to respond to the draft. A final EIS and record of decision will follow.

OPA, along with a large number of environmental organizations, advocate eliminating non-native goats from Olympic National Park and Olympic National Forest lands by the most efficient and cost-effective means. We believe this to be the only way to preserve the irreplaceable alpine and subalpine communities of the Olympics in the face of continuing damage (browsing, trampling, wallowing) by non-native goats. This view is not shared by animal rights advocates, who will certainly attempt to stymie any effort on the part of the Park Service to remove non-native goats.

Those who believe the natural ecological processes of Olympic National Park should take precedence over the use of the Park as a petting zoo for exotic species, no matter how photogenic, need to make your voices heard. OPA will notify members when the Draft EIS is released, urging you to write letters and attend public hearings on the Park Service's proposed action. If you would like a copy of the Draft EIS, write:

Sup't. David Morris, Olympic Nat'l Park
600 East Park Ave.
Port Angeles, WA 98362.

Lake Cushman Land Exchange

by Randy Payne

In July the Final Environmental Assessment (EA) for the proposed Lake Cushman land exchange was released. This EA still recommends that 30 acres of park land near Staircase in the southeast corner of the park be exchanged with Tacoma Public Utilities (TPU) for 45 acres of state land in two parcels in the Soleduck and Strawberry Bay portions of the park. The purpose of the land exchange is to resolve a trespass of park property by Cushman Reservoir which inundates 11 of the 30 acres identified above. This land exchange was authorized in October of 1992 by an Act of Congress (PL 102-436).

Implementation of the land exchange is primarily dependent upon two factors: (1) completion of the Federal Energy Regulatory Commission's (FERC) Draft Environmental Impact Statement on the relicensing of the Cushman hydroelectric project which will assess the cultural compliance and overall project impacts on wildlife on these (and adjacent) lands; (2) preparation of an enforceable agreement by TPU (owner/operator of the hydroelectric project) concerning how these lands will be managed by TPU. In addition, details need to be worked out between the Department of Interior, TPU, and the Skokomish Tribe to resolve the tribe's concerns for continued access to these traditional lands once these lands are transferred to private ownership.

OPA remains opposed to this land exchange as proposed. We see this action as directly linked with the relicensing effort underway and feel it imprudent to delete federal park lands *prior* to FERC's determination of the licensing criteria for operating the Cushman dams (which *may* demand a lower reservoir operating level, thus eliminating the trespass and nullifying the need for a land exchange). The state lands identified for exchange are not threatened, nor are they prime old-growth habitat and are not suitable for the exchange. More appropriate parcels in the Skokomish River drainage (that could benefit the wintering elk herds) or critical private inholdings should be pursued. A complete EIS would also address concerns for diminished habitat for the threatened bull trout. Lastly, we are concerned how this exchange will impact the traditional cultural practices of the Skokomish Tribe.

News Briefs from Olympic National Park

Hurricane Ridge Winter News

Entrance fees will be charged on weekends at the Heart O' the Hills Entrance Station from Dec. 17 until March 26, and also on Monday holidays (Jan 2 and 16, Feb. 20). No fees will be charged on Dec. 25, Christmas Day. Fees will be $5 per vehicle for a seven day period, or $15 for an annual park pass, or $25 for an annual Golden Eagle Passport (good at all federal fee areas).

Hurricane Ridge Road will be open 9 a.m. to dusk, Saturday through Monday, barring heavy snows or storms. Midweek (Tu - Thurs) road opening depends on availability of staff and on road and weather conditions. For recorded information on Hurricane Ridge Road and weather, call 452-0329 or tune to 530 AM in Port Angeles.

Hurricane Ridge Visitor Center will be open whenever the road is open.

Downhill skiing will be open on Dec. 18, 24, 31, and Jan 1 and 2, and thereafter on Sat., Sun, Mon, and holidays through March 26.

Snowshow walks: weekends & Mon. beginning Dec 17. Call 452-0330 for further info.

For more information about winter activities at Hurricane Ridge and throughout ONP, call ONP Visitor Center at 452-0330.

New Superintendent at Olympic National Park

As of mid-November, Olympic National Park has a new superintendent: David Morris. Former Superintendent Maureen Finnerty has been promoted to Washington, D.C. (see article below).

Superintendent Morris is no stranger to the Northwest, coming here from the post of superintendent of Crater Lake N.P. and Oregon Caves N.M., where he has served since October, 1991.

Morris entered the Park Service with a B.S. degree from San Jose State University, with emphasis on zoology, botany, and wildlife management. His first permanent Park Service assignment was in 1965, as a ranger and resource manager in Hawaii Volcanoes National Park. Subsequently Morris spent several years in the Park Service's central planning office in San Francisco and Denver and in the management development program for the Department of Interior. He has also had two international assignments: in Malawi, as park and game reserve planning advisor; and in Sri Lanka, as advisor to their Department of Wildlife Conservation and Mahaweli Environmental Project.

Morris has extensive experience as a park administrator. He served as Superintendent of Katmai N. P. and Preserve and Aniakchak N. M. and Preserve in Alaska, and as assistant superintendent of the Southeast Utah group of national parks, which includes Canyonlands N.P., Arches N.P., and Natural Bridges N.M., prior to his term at Crater Lake.

According to the Park Service, Morris's efforts at Crater Lake have included completing the rehabilitation of historic Crater Lake Lodge, continuing the park's lake research program, seeing the water clarity improve to levels recorded in 1930, working to restore the park's declining population of native bull trout, and initiating the establishment of Friends of Crater Lake, a support organization.

Olympic Park Associates look forward to working with Superintendent Morris and wish him success in meeting the challenges awaiting him in Olympic National Park.

Promotions and Honors for Olympic N.P. Staff

Maureen Finnerty, superintendent of Olympic National Park since 1990, was recently promoted to the Number Three post in the Park Service. She has been appointed Associate Director of Operations for the National Park Service in Washington, D.C. She will be responsible for park operations, visitor services, and interpreter programs of the National Park System.

A 20 year National Park Service veteran, Finnerty earned respect for her administrative ability during her term at ONP, an ability which will surely serve her well at her new post.

ONP employees recently received two national wilderness awards from the National Park Service. Ruth Scott, wilderness coordinator and natural resources specialist for ONP, was honored with the 1994 Individual Champion of Wilderness Award for outstanding efforts to improve wilderness manageement..

Also, Olympic's trail crew was awarded the 1994 Maintenance Leadership in Wilderness Award for applying innovative trail maintenance technology, for securing grants for trail rehabilitation, and for active participation in the wilderness revegetation program.

Congratulations from Olympic Park Associates. Our park is fortunate to enjoy such excellence in wilderness management.

A Report On the "Lake Crescent Plan"

by Harry Lydiard

The reason for the quotation marks around "Lake Crescent Plan" is that there actually is no adopted plan for the lake. That is, a plan exists, but it is in draft form carrying a 1984 date and the signature only of then Superintendent Chandler. Jack Galloway, Olympic National Park (ONP) landscape architect and planner, states that the plan did not get past the Regional Office and so cannot be considered adopted.

At the present time several teams from the University of Washington are working on an "existing conditions" document that is the beginning of a new plan for Lake Crescent. These teams are competing, and the effort that ultimately is considered the best will form the basis of a new plan for the lake. After review and possible refinement by the Park Service, this plan will go to the public for comment.

This methodology, though unusual, is necessary: the Park Service lacks funds, but is pushed by the realization that Lake Crescent needs a plan that is both current and adopted.

Interestingly, the 1984 "plan" somewhat foreshadows the Lake Crescent tour boat that burst upon the scene in May, 1994. Two of the four alternatives in the 1984 "plan" discuss pedestrian ferry service together with onboard interpretation of the Park by ONP personnel. One alternative, with the massive title "Maximized Development to Serve Destination Visitors", envisions ferry service as part of a scheme that includes the closing of the highway between Fairholm and Barnes Point and the construction of a lake bypass. Obviously the present "paddlewheeler" cannot lay claim to being part of such a closure scheme at the present time.

Ironically, the ominous sounding "Maximize Development" alternative probably does more to protect the lake's character than do the other three alternatives discussed. In the 1984 "plan" each of the existing development areas around the lake is subject to varying types of expansion or elimination.

Reality is that the existing unadopted plan is not being followed. Instead, projects are done on an "as needed" basis.

The 1984 plan states that "because of a long history of development on the lake the National Park Service has treated Lake Crescent as an exception: as an island of development in a vast expanse of preserved beauty." Therein lies the basis, thus far, of park planning for the wonderful beauties of Lake Crescent. It behooves us to monitor the planning process carefully as it unfolds.

BOOKS

The Forest Elk: Roosevelt Elk in Olympic National Park.

Bruce B. Moorhead. Northwest Interpretive Association. $13.95

Reviewed by Carsten Lien

Until now, there has never been an authoritative and attractive publication on the Olympic elk for those who want to expand the horizons of their visit to the park. This void has finally been met by park wildlife biologist Bruce B. Moorhead. He has a wealth of first hand knowledge of the behavior patterns of Olympic National Park's elk population, which he presents in The Forest Elk, a small, beautifully illustrated, 62 page booklet in full color, augmented with maps and drawings. Don't be put off by what at first glance appears to be a pamphlet. It's not. It contains, page after page, the best elk pictures ever, all in full color, along with easy to read text.

Moorhead takes his readers on an authoritative, succinct tour of nearly everything anyone would want to know about elk. He begins with where they came from and proceeds to where they are found in the park, how they move from summer to winter, how they live out their lives and interact with the predators which are part of their existence. Near the end, Moorhead aims directly at the park visitor with a chapter on how to observe elk — timing and equipment and search techniques.

Everyone interested in Olympic National Park for whatever reason should get a copy of this volume as quickly as possible. At $13.95, considering the storehouse of elk information it contains and its full color design, it's a great value.

Good Fishing

Continued from Page 3.

per reaches of the basin, and their populations peaked in 15 and 25 years, respectively (Seiler 1991).

Chinook

Restoration of spring chinook salmon would primarily rely on outplanting juvenile summer-fall Elwha stocks in their historic range (the uppermost reaches of the basin) and then allowing natural processes to establish an early run.... Chinook salmon are known to adapt rapidly to new situations (Healey 1991), and significant shifts in spawn timing have been reported in response to new environmental conditions (Kwain and Thomas 1984). In the Elwha, the existing summer-fall chinook salmon stock could eventually exhibit an earlier timed component (spring type), responding to the upper river's cooler temperature regimen, which requires an earlier return and spawn timing to complete the life cycle.... Whether Elwha chinook would again exhibit their large size (up to 45 kg) is problematic; however, the environmental conditions that produced these large fish would again be available....

Photograph by Natalie Fobes

Sockeye

Sockeye restoration would involve either importing a suitable stock or enhancing the anadromous component of Lake Sutherland kokanee, assuming the stock retains a significant genetic element of the original Elwha sockeye. Kokanee, although landlocked, may produce anadromous offspring that, through captive rearing, could be used to restore depleted sockeye stocks as proposed for recovery of endangered Snake River sockeye....

Steelhead

Restoration of Elwha steelhead would focus on use of native Elwha stock. Reisenbichler and Phelps (1989) suggest that the upper Elwha River rainbow trout *(O. mykiss)* may be descendants of the original Elwha steelhead, trapped in the upper river since Elwha Dam closed.....

To rebuild native runs of searun cutthroat and native char, natural recolonization would be relied on. Remnant, landlocked forms of these species may also exist in the upper watershed in an analogous manner to rainbow / steelhead....

Dam removal, as well as ecosystem and fishery restoration, are feasible. The short-term costs are high, but the long-term returns are substantial (restoration and protection of treaty Native American fishing rights, increased commercial and recreational fishing and tourism, re-establishment and protection of ecosystem diversity, and research opportunities). The [Elwha River Ecosystem and Fisheries Restoration Act] offers a once-in-a-lifetime opportunity to fully reverse an environmental mistake.

"What better agents than ourselves to restore our regions' salmon runs? ... We marvel at the miracle of their return, argue over their health, and rise early to troll and mooch for them in the dark, testy weather of the North Pacific. We ceremoniously savor their firm yet delicate flesh, subtly cooked in a myriad of local and family recipes.... And while they delight our senses, the salmon also represent us in a profound and heartfelt way. They are the precious mettle of our watersheds. They embody our home places. Salmon are the deep note of our dwelling here, the silver soul of this green bell...."

Tom Jay, in **Reaching Home: Pacific Salmon, Pacific People**

Unique Plants of the Olympic Mountains -- Part 2

by Ed Tisch

Reprinted by permission of **Outdoors West,** *Vol. XVI, No. 1 (Winter 1993-1994)*

In Part 1, the author explained the biogeographic origins of endemic *and* disjunct *plant species found in the Olympics. (See* ***Voice****, June, 1994.)* Endemic species *have evolved in geographic isolation (for example, in the Olympics) and are found nowhere else.* Disjunct species *are related, through ancestors, to populations found in distant locations (such as the Wenatchee Mountains and the Blue Mountains) from which they have been separated by time and geologic events. Ed.*

In the Olympics, most endemic plants and many of the disjunct ones occur near or above timberline, particularly in the northeastern corner of the range. They tend to grow in rocky environments where competitive exclusion by associated species is somewhat minimized. Very few are considered to be abundant. Their continued survival has become the rallying cry of environmentalists urging the elimination of mountain goats introduced to this area early in the 20th Century. By the 1980's, non-native goats had multiplied to levels which threatened not only the rare plants and animals, but even the biotic communities to which they belong.

The list of endemic animals is relatively short, including the Olympic marmot, a subalpine butterfly, and perhaps one or two amphibians and fish. G.N. Jones, in his ***Botanical Survey of the Olympic Peninsula,*** (1936), published a list of 20 species and varieties of plants he then believed to be restricted to the Olympics. He felt that most Olympic endemics were "relics" (leftovers from an earlier flora), because they "lack the characteristic aggressiveness of species in an active phase of migration and evolution." Some members of his list are no longer recognized as valid taxa, and several have been relegated to near-endemic status after being discovered on Vancouver Island, to the immediate north of the Olympic Peninsula. Tisch's saxifrage, classified in the 1980's, belongs in the near-endemic category. Like most Olympic endemic plants, it is small, herbaceous, and relatively uncommon.

Piper's Bellflower

There is one endemic shrub, the Olympic Mountain rockmat, which is usually found growing on basaltic cliffs in moderately rainy portions of the Olympic high country. Its closest relative, the Chelan rockmat, occurs east of the Cascade Mountains.

The best known endemics appear to be Piper's bellflower and Flett's violet. Of comparable stature and ecology, these petite species occupy rock crevices and scree over a sizable portion of the eastern and northern Olympics. Piper's bellflower has tiny, holly-like leaves and sky-blue (rarely, white) flowers. The violet's purple-veined leaves are relatively succulent, and its pinkish-violet blossoms are simply exquisite. These endemics are named after C.V. Piper and J.B. Flett, two mountaineering botanists who frequented the Olympics near the turn of this century. Flett also discovered the Olympic Mountain daisy, a small fleabane which bears his name in its specific epithet.

Flett's Violet

Perhaps the rarest endemic is Cotton's milk-vetch, a variety of locoweed which seems to be confined to the north-central Olympics, usually occurring on basaltic talus slopes close to timberline. The few known populations were heavily impacted by mountain goats prior to 1980. About 1985 the author discovered, on Blue Mountain, a sizable patch of milk-vetch that wallowing goats had apparently devastated. However, despite their ordeal, the several hundred plants present seemed to be growing and reproducing quite effectively.

The Olympic Mountain butterweed, discovered by E.B. Webster, a local journalist who loved Mount Angeles, was once believed to be rare and essentially restricted to that mountain. Recent discoveries have fortunately expanded its range well beyond Mount Angeles. This species' preference for steep, high-elevation talus slopes apparently kept it out of sight for many years.

Another uncommon endemic, the Olympic variety of cut-leaf synthyris, is largely confined to high mountain tops in the northeastern Olympics. This fuzzy species has stiff, dissected leaves and attractive blue flowers that are rarely observed because the plants often bloom while snow is still on the ground. Their closest relatives occur far to the east in Montana, Wyoming, and Utah.

A real eye-catcher, the sand-dwelling wallflower, has a strongly perennial, multi-stemmed variety that seems to be endemic to the Olympics. The yellow flowers of this member of the mustard family are admired by many visitors to Olympic Park. The perennial wallflower has an annual counterpart which also occurs in the Olympics. One wonders what keeps these two varieties distinct. Why don't they interbreed and blend with one another?

Additional endemics and near-endemics include Thompson's wandering fleabane, a low-elevation, bog-dwelling daisy; Olympic Mountain paintbrush, a local race of the magenta paintbrush; Olympic Mountain aster, a medium sized species with relatively few heads per plant; and the bracted lousewort, with fernlike foliage and leafy clusters of crooked, blood-red flowers.

The Olympics undoubtedly contain undiscovered endemics.

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ADDRESS CORRECTION REQUESTED

Olympic Park Associates
13245 - 40th Avenue N.E.
Seattle, WA 98125

VOICE of the WILD OLYMPICS
Sally W. Soest, Editor

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Please mail to:

Laura Zalesky, Membership Chair
2433 Del Campo Drive, Everett, WA 98208

Unique Plants of Olympics, Continued from Page 7.

In closing, I am inclined to predict that future finds will generally share several characteristics. They will be small, uncommon, inconspicuous species belonging to groups that taxonomists often ignore, or they will resemble related forms so closely that scientists may deny their uniqueness. C.L. Hitchcock, in his ***Vascular Plants of the Pacific Northwest*** (1961), called Tisch's saxifrage an "apetalous" form of the redwool saxifrage — which it resembled, but was not.

Tisch's saxifrage

Illustrations from C.L. Hitchcock et al. **Vascular Plants of the Pacific Northwest, Parts 1-5.** *Seattle: University of Washington Press, 1955-1969.*