

Mount Rainier National Park Associates Newsletter



Vol. 3, No. 1

"a non-profit citizens awareness organization for the Park"

Winter 1986-87



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PARK MANAGERS ADDRESS CONSERVATION GROUPS

On November 14th, Northwest Regional Director of the National Park Service, William Briggles, and four park superintendents, and regional technical staff, met with conservation organizations in Seattle. Mount Rainier Park Associates representatives included Sue Stamm, Polly Dyer, and Bob Aegerter. The following is a synopsis of information important to MRNPA which was disseminated at this meeting.

Bids for the Nisqually Road project will be received on November 26th of 1986. In the rush to adjourn for elections, and with a budget on the President's desk, Congress did not authorize expenditures from the Highway Trust Fund for new projects. A contract cannot be awarded until the next Congress authorizes funds in 1987. Bob Chandler, Superintendent of Olympic National Park, described the restoration work that is proposed for the Selduc Road. Citizen concern for more care and thought in the management of the natural resource is being heard.

Stephen Mather, the acknowledged father of the professional National Park Service, had a dream to connect the western parks with a scenic road system. He personally paid one-half the cost of the Tioga Toll (See "Park Managers" p. 2)

FROM THE SUMMIT.....

Having been raised in northeastern Ohio, where Fall colors are as spectacular as any in Vermont, I've long felt, with all its scenic grandeur, the West was shortchanged in the Autumn-color department. However, this past September I was fortunate enough to experience, for my first time, the aspen in fall dress outside of Estes Park, Colorado. So this was what John Denver had been singing about all those years! The purpose of the trip to Colorado was to attend a conference sponsored by the Natural Resources Law Center of the University of Colorado entitled "External Development Affecting the National Parks: Preserving 'The Best Idea We Ever Had'."

Of all the national parks, Mt. Rainier is one of the most threatened by development outside its boundaries. Clear-cutting right up to the Park's borders is glaringly in evidence from any higher elevation within the Park, air quality is compromised by slash burning, the proximity of a large population results in overuse of the Park on most weekends, development of tourist attractions along access roads contributes to traffic congestion, and so it goes. The list of past, current, and future development that threatens our Park and the other 334 units within the Park Service is long, but the consensus of the conference attendees was that the greatest threat was public ignorance. In my opinion, the Park Service does precious little to educate the visitor about issues concerning the parks, especially controversial issues. In contrast, one of the objectives of Mt. Rainier National Park Associates is "to produce and provide educational materials and programs for its members and the public." This newsletter offers an opportunity to disseminate information on a variety of timely topics concerning the Park; I would suggest that when you have finished reading your copy, pass it along to a friend, pointing out the membership form. As was

(1) (See "Summit" p. 2)

("Park Managers," p. 1)

Road on the eastern side of Yosemite. Washington State was building the highway across the northeastern corner of Mount Rainier in 1928 when Mather had a stroke and the state named the highway the "Mather Parkway." Following his death on January 22, 1930, the Secretaries of Interior and Agriculture gave federal designation.

Now the Forest Service is proposing to cut 25 million board feet annually in patches from 10 acres to 200 acres, from mature thinning to clear cutting. No cuts would be within 1/2 mile of the road or visible from the road. Visibility from the Park has not been discussed. One "wag" suggested lining up the foresters who made this proposal and clearcutting them with a chain saw.

The State of Oregon has recently adopted regulations on slash burning which are stricter than the earlier standards adopted by the State of Washington. Since the Washington standards were adopted, new research has shown that there is a significant relationship between slash burning and visibility, and that burning earlier in the year has less impact. The Oregon standard does not allow slash burns during July and August except by special permit when weather conditions prevent earlier activity.

Polly Dyer, the 'velvet rock of Northwest Environmentalism,' urged expansion of the Mount Rainier National Park boundaries on all sides. Polly cited the historical compromises over boundaries and the need to have the entire ecosystem under unified management. When Polly asked William Briggie how she should lobby Congress on another issue, he responded with true respect, "Far be it for me to try to tell you how to lobby."

The best news of the two hours is that William Penn Mott, Director of the National Park Service, is willing to consider a proposal for legislation to designate the Wilderness Areas in the three Washington National Parks. A long-range goal from the inception of Mount Rainier National Park Associates, the task may be upon us sooner than expected. The Wilderness Society will have a staff person in Washington State December 17-19 working on organization.

—Bob Aegerter

MARK YOUR CALENDARS!



BOARD OF DIRECTORS MEETING, TUESDAY, JANUARY 13th 7:00 PM, Bob Aegerter's residence. Contact Sue at 328-1155 for information or to place items on the agenda.

MOUNT RAINIER NATIONAL PARK ASSOCIATES WINTER OUTING SATURDAY, MARCH 14th. Place: Alexander's Country Inn outside Park boundary. Hot tubs, dinner, and overnight stay in a wonderful historic inn. Maximum is 24 people (\$26 per person), and minimum about 16 (\$39 per person). \$20 deposit due at next Board meeting (per person).

Our total cost for reserving the whole inn will be \$624 (including tax). Price will include hot tubs, total use of upstairs areas, plus one large breakfast in the morning. More discussion on this at the next Board meeting. Please contact Margie Goulden at (206) 863-3265 for more information. We plan to have a very good time, and recommend you make your reservations for this event early.



("Summit" p. 1)

noted by an attorney experienced in environmental cases, public outcry, not laws, has prevented most development from occurring, but the public must be made aware of the issues.

Our national parks represent what our culture takes pride in, what we feel is worthy of preservation for the future. As Dr. Al Runte, historian at University of Washington, noted during the conference, the park idea was envisioned by those in the 1800's as a way to compensate for deficiencies in America's cultural heritage as compared to Europe's. Whereas we lacked 500-year-old cathedrals, we did have Yosemite Valley. Unfortunately, monumentalism, rather than environmentalism, was the basis for setting the boundaries of many parks. It wasn't until the 1930's that the concept that boundaries should be defined by ecosystems was developed. Fifty years later, many of our parks still face problems stemming from borders that make no ecologic sense.

Dr. Runte concluded that security for the parks will not be achieved until the United States (i.e., the public) decides "that its parks are more important for what they provide the nation rather than for what they might deny to the national economy." Is a park worthy of protection only if it can turn a profit on tourism? The National Park Organic Act itself contains an inherent conflict between preservation and use, which no court has yet to directly address. Partial legal protection of the parks rests in many other acts, such as the Clean Air Act, the National Environmental Policy Act, and the Endangered Species Act; but, even collectively, these laws do not adequately protect against development on adjacent lands. To whatever extent possible, both administrative and legislative actions must be used to resolve conflicts. Local zoning ordinances and land use regulations seem a possible source of protection (the haphazard development of Route 161, South Hill to Eatonville, comes to mind). But, according to conference speakers, zoning issues are extremely complex. Cooperation among local, state, and federal agencies is difficult at best, each agency acutely aware of the others' turf; litigation between agencies, such as NPS and (See "Summit" p. 3)

("Summit" p. 2)

USFS, is taboo. Particularly in the Reagan administration, politicization of the NPS has occurred, much to its detriment.

During the two days of seminars, all was not doom and gloom; constructive ideas were discussed. The most striking of these in my mind, was the concept of focusing on alternatives, as presented by a Boulder attorney, David Mastbaum. He advises that when a park unit is threatened by external development, the NPS "must explore and develop alternatives to the proposal which could fulfill the needs of the project and is designed to meet without threatening park values." The alternatives can include land exchange, zoning, purchases, and should allow for consideration of state and private land options, as well as federal.

Historian Wallace Stegner referred to the national park idea as "the best idea we ever had." But keeping this idea a reality is a responsibility all of us must bear. Your membership in MRNPA is one clear indication that you acknowledge this responsibility. Past experience tells us that the NPS does not possess all the skills necessary to do what needs to be done; MRNPA and kindred organizations play a vital role.

—Sue Stamm

PARK ROADS EAST CLOSED

State Highways 410 and 123, which pass through Mount Rainier National Park on the east side, closed for the winter November 29th. 410 will be closed at the north park boundary near Crystal Mountain junction, according to Superintendent Neal Guse, and 123 will be closed about 2 miles inside the south entrance at the junction with Stevens Canyon Road. Road conditions for all roads inside the Park may obtained from the ranger station (206) 569-2211, or a 24-hour hot line at (206) 569-2343.



OLYMPIC NATIONAL FOREST PLAN OUT

The Forest Service preferred alternative for the 650,000 acre Olympic National Forest calls for timber sales which average 186 million board feet annually, down from the existing goal of 248 million. Between 1973-82 sales averaged 319 million while harvests averaged 270 million board feet. Roadless areas outside designated wilderness would decrease from 87,600 to 53,000 acres. Spotted owl management areas (SOMAs) would remain at 29. Twice as much scenery would be protected near roads under the plan.

GRAND CANYON SETS LIMITS

The FAA has announced it will bar non-commercial flights within about 2,000 feet of the canyon rim, and require special permission for tour operators to fly in the restricted areas. Most commercial operators will be required to remain above the rim.

RAILS TO TRAILS A NEW APPROACH TO THE NATIONAL PARK

It is now being recognized that abandoned railways would make excellent bikeways, hikeways, or horse trails to mountain areas such as Mt. Rainier National Park. In a small way, auto traffic would be lessened, and the hare and tortoise approaches would be safer for them than competing with the auto traffic.

In 1881, access to the northern side of the Mountain was achieved after Bailey Willis directed construction of a trail connecting the Northern Pacific Railroad at Fairfax with Spray Park. His trail was up the Carbon to Evans Creek, Grindstone Camp, just south of the present Mowich Road, and upstream to Crater (Mowich) Lake. Willis was an explorer-mountaineer and geologist employed by the railroad, and his trail was initially designed to promote land-buying, settlements, coal-mining and tourist travel. He also built a trail from Grindstone Camp straight south to Ashford.

By 1884, mountaineers were using it for summit climbs via the Winthrop Glacier. Later explorers followed the Carbon River all the way up to its glacier.

Then in 1909, the Seattle Mountaineers took the N.P. rail from Seattle to Fairfax in July for their summer outing in the Park, which was based for three weeks in Spray Park. Supplies came in by trail and over the Bailey Willis trail. From Fairfax, the first night's camp was about eight miles up Evans Creek. The next ten miles took them to Spray Park. These outing members made explorations and climbs east as far as Chanepecosh and west to Indian Henrys.

The Tacoma Mountaineers' first outing was in 1912 by the Tacoma Eastern (Milwaukee) to Ashford, and to Mt. Wow by trail.

In 1912, The Mountaineers began a summer outing near Easton (on the present John Wayne Trail) and traveled over the Cascade Crest to the White River, across to Spray Park, and home by train from Fairfax to Seattle. They could even buy icecream at the Fairfax general store. Can we now? Guess not.

Both railroads were used in July of 1914 by two Seattle Mountaineers (Mr. & Mrs. Charles Gleason), who did a cross-country backpack from Paradise to Spray Park (on the east side), and out down the Willis trail to Fairfax for return to Seattle.

Then in 1915 some things changed. The Tacoma Mountaineers cancelled their New Years' outing at Longmire due to the discontinuance of a morning and evening passenger run by the Tacoma Eastern to Ashford. Other railroads had also curtailed their passenger service. In the summer, the same group did an outing to the Beljica area using the afternoon train. Auto stages took them to Messier's ranch just short of the Nisqually Entrance. Packhorses

(See "Rails" p. 4)

("Rails" p. 3)

were used to take the party's supplies to Lake Christine for the second night. They hiked to Goat Lake and climbed over Mt. Wow, returning by Tahoma Creek, and stayed at Ashford overnight. The next night, Tacamens settled on the train to Ashford, and auto stages to Longmire.

By 1917, a road up the Carbon River was advocated with a hotel to be built at its end near the Carbon River. Outings and highline backpacks in the Park often started and ended at Fairfax at this time. The fares were lower on the N.P. than the Milwaukee.

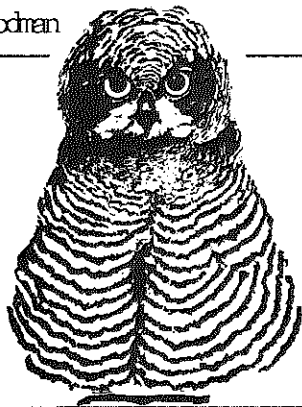
In 1918, autos were increasingly used for visiting the Park, or auto stages ("rubberneck wagons"). Train fares were "too high" and passenger schedules not at the right time of day.

On the north side, the first road was built 1923-25 on the south side of the Carbon River to Cataract Creek. The railroad then ceased taking passengers to The Mountain. The Tacoma Eastern discontinued service about this time also, when roads were improved to the Nisqually side.

Rails for passengers had now bowed out to the private auto. coal mining and logging kept the trains running for a time, but after mining ended and the logging truck roads appeared, the rail lines began to shut down.

In recent years, little by little the ties and rails are vanishing, but the railways remain for the far-sighted. There is a great need for more country bike paths off the dangerous highways, as well as trails for horses and packers, and Mt. Rainier Park is a great place to go. Hikers could also travel the old lines in sections. After all, the early native Americans and settlers all rode horses or walked to The Mountain.

—Edith Goodman



WILDLIFE PROJECTS UPDATE

A study is being made by Oregon State University of the amount of sulfur and heavy metal in subalpine fir needles, lower plants such as lichens, and goat hair, in Mount Rainier National Park.

A new study is also being made in the Park on plant frequency and biomass increase in a year's time and plant response to elk grazing.

Impact of elk herds in the Park are recorded in the

Elk Monitoring Report, 1986 by John Scott, Roger Christophersen and Stanley E. Schlegel.

Four pair of plots, each consisting of a fenced control area and an unfenced test area, "were sampled to measure changes in species composition and percent of cover. The vegetation plots were located in the northeast portion of...(the Park) at Bear Park, White River Park, Fremont Basin, and Yakima Park."

This study found "no dramatic changes in species composition or percent cover...Percent of "bare ground" declined for all vegetation plots"... implying that elk activity had little impact on bare ground composition.

"Census indices indicate that the south (elk) herd is continuing to decline in size, and suggest that the north herd may be stabilizing...with an overall calf to cow ratio of 35/100 and no major changes in vegetation cover and composition evident."

This year's observations were augmented by aerial census taking on five flights over the eastern half of the Park with pilot Bob Greyell. The report's authors recommend continuation of this aerial censusing technique to aid in understanding trends in elk population and evaluating vegetation plot data.

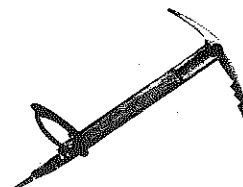
—Arlene Conde

BOOK REVIEW—

Wilderness Above the Sound, The Story of Mount Rainier National Park, Northland Press, Flagstaff, Arizona, 1986 (\$11.95)

Arthur D. Martinson has written a small (8x9) short (74 pages) history of the human involvement with the Mountain. It is worth the price for the 29 or more photos by Asahel Curtis. With chapters on early exploration, first climbs, the creation and development of the park and a final plea for preservation of the wilderness, Martinson presents a well-balanced and well-written history. The quality of his research is so evident that I wish he would have given us more about the compromises on the boundary when the park was created, the relation with the Tacoma Eastern Railroad and the Northern Pacific, relations between the Park Service and the concessionaires, and the unfulfilled plan of the 1920's to encircle the mountain with a road inside the park. Such a history needs to be written, and it is hoped that Martinson, a history professor at Pacific Lutheran University with extensive experience in the park, will continue with the task. In the meantime, Paradise Lodge has a handsome memento to sell to the valley onlookers.

—Bob Aegerter



HELP WANTED!

Did you know that each issue of the Mount Rainier National Park Associates newsletter costs 59¢ to print and mail? What have we been doing to keep the cost down? By increasing our mailing list to over 200 we now have bulk mailing privileges from the U.S. Postal Service, resulting in reduced mailing costs. By acquiring non-profit status from the Internal Revenue Service, our mailing costs have further reduced to the current cost of 8.5¢ per piece. However, we can expect our mailing costs to increase as the Postal Service raises rates in the years ahead.

What can we do to reduce our printing costs? By increasing our membership, and thus the number of newsletters we print, we can sharply reduce our printing costs per member. For instance, it costs 50¢ per copy to print 250 copies of the newsletter. If we could increase our membership to 500 our printing costs should be around 30¢ per copy.

What can you do to help? Our immediate goal is to increase our membership to 500. By spreading the good word about MRNPA among our friends, relatives and associates, we can achieve this goal and at the same time get more people involved in our overall effort. When you are through reading this newsletter, please pass it on to a friend, relative business associate or person you meet hiking. Encourage them to join and become involved with our group of dedicated conservationists.

Included with this newsletter is a green brochure that explains MRNPA, its purpose, achievements and goals. It's being mailed to 1,000 conservation-minded individuals in the Tacoma area. Please pass your copy along to a friend or post it on the bulletin board at work or at your local library. If you could use more copies just call Jeff or Margie Goulden (206-863-3265).

With the January newsletter it is time once again to renew your membership in MRNPA. By renewing now you are saving the cost of sending renewal notices (about 30¢ per notice). Also, at this time would you consider joining a committee? Our committees have had some solid achievements over the past two years and are gearing up to do some exciting work in the coming year.

Christmas and New Years are behind us, spring is around the corner and there is a lot to be accomplished in the coming year. So send in your renewal today, sign up for a committee and get a friend or two to join. Thanks for your help.

—Jeff Goulden



NOW IS THE TIME FOR BOUNDARY CHANGES

Since the formation of Mount Rainier National Park Associates in 1985, we have been studying the Park's boundaries with an eye toward future changes. Initially our Boundries Committee began its work as part of a nationwide effort by the National Parks and Conservation Association (NPCA). But recent events are pushing boundary

changes to the top of the MRNPA agenda.

As you know from a glance at a map, Mt. Rainier National Park is surrounded by three national forests: the Wenatchee on the east, the Mt. Baker-Snoqualmie on the north, and the Gifford-Pinchot on the south. National forest lands, administered by the U.S. Forest Service, are not protected from developments such as logging and ski resorts. In fact, the White River Ranger District of the Mt. Baker-Snoqualmie National Forest, which lies on the Park's northern flank, has been the center of intense timbering for many years — some of the most extensive clear-cut logging anywhere in the United States. Satellite photographs show that the lands to the north and west of Mt. Rainier National Park have been logged right up to the Park boundaries.

Because the Forest Service seems bent upon such intensive development of its lands, and because those developments degrade the experience and resources in the Park, MRNPA inevitably took an interest in national forest management, and in additions to the Park from the surrounding national forests. Our interest came into sharp focus last autumn when the Wenatchee National Forest released a draft land-use management plan for public comment.

With the establishment of the Norse Peak and the William O. Douglas Wildernesses in 1984, we thought that Mt. Rainier National Park's eastern flank was well protected against development. The Wenatchee Forest Plan ended any such ideas. In one of its worst provisions, the Plan failed to prohibit logging inside the Mather Parkway corridor, which runs between the wilderness areas along Highway 410 east of Chinook Pass.

Immediately MRNPA called for a transfer of the Mather Parkway from the Forest Service to the National Park Service (NPS), either as an addition to Mt. Rainier Park, or as a separate NPS unit. We also asked for the establishment of a Naches Pass National Monument, because the Wenatchee Forest Plan proposed to build a logging road over this famous pioneer gateway. If the Forest Plan for the Wenatchee bodes so poorly for protection of lands adjacent to the Park, we can only fear what will arrive with the draft plans for the Mt. Baker-Snoqualmie and the Gifford-Pinchot, where, unlike the Wenatchee, logging has ruled for decades. The release of these two draft Forest Plans is expected in early 1987. Upon their release, MRNPA will have its hands full of work to do.

In other news, Congress, just before its adjournment last October, passed a bill exchanging lands between Olympic National Park and Olympic National Forest. Sponsored by Sen. Dan Evans, the bill put some park lands into recently established (See "Boundary Changes" p. 6)

("Boundry Changes" p. 5)

Forest Service Wilderness Areas. At the same time, many acres of forested lands, which the Forest Service had marked for the ax, gained protection by transfer into Olympic National Park. In addition, the NPS was given control of the tidal zone and of Ozette Lake from Washington State.

Clearly the Congress is willing to pass legislation if the bill involves reasonable and low-profile exchanges of lands between the Forest Service and the NPS. Clearly such legislation works to protect endangered lands if conservationists make their case to Congress, as we did in the Olympic bill. Clearly an opportunity has arisen for similar legislation for Mt. Rainier, if MRNPA makes a persuasive case before Congress now.

No matter what conservationists do, the Park Service and the Forest Service intend to push the 100th Congress for legislation. For some time, the agencies have wanted to switch Forest Service lands to the NPS where park roads briefly leave Mt. Rainier at Klapatche and near Chanapecosh.

Late last year the agencies finally surveyed the boundry near the Crystal Mountain ski Resort. To their surprise, they discovered that the top of one ski lift encroaches into Mt. Rainier National Park — a violation of federal law. A transfer of the affected acreage out of the Park and into the Mt. Baker-Snoqualmie National Forest would resolve the situation. Therefore both agencies intend to push Congress for legislation accomplishing the exchange. What MRNPA must promote before Congress is a much broader adjustment of Park boundries than simply two small tracts around Park roads, plus some acres around an illegal ski lift.

In addition to the Mather Parkway and Naches Pass National Monument already discussed, several national forest areas should logically become parts of Mt. Rainier National Park. The Glacier View Wilderness just north of the Nisqually entrance is essentially administered de facto by the Park Service right now. Lands in and near the Clearwater Wilderness, particularly around Chenuis and Pinochle Creeks, should be added to the Park's northwestern corner. More Park additions should be considered near Chanapecosh on the northeastern side.

Early in 1987, MRNPA will put together its comprehensive proposal for boundry changes around Mt. Rainier National Park. As the Forest Service releases draft plans for the Mt. Baker-Snoqualmie and the Gifford-Pinchot National Forests, MRNPA will carefully study and respond to the agency's proposals. And throughout this year and 1988, MRNPA must take its case to Congress as expected legislation winds its way into law. Only Congress can authorize changes in Mt. Rainier's borders, and/or exchanges of lands between the NPS and the Forest Service.

You are the critical link in all this important work. First, we need your ideas and suggestion about boundary changes. When the Forest Service releases the draft plans, MRNPA will ask you to send a letter criticizing the agency's proposals. But more important, we need your support to raise funds. Such an important program as boundry

adjustments is costly, to say the least. MRNPA anticipates spending \$1,000 or more during the next two years in order to redraw the Park's boundries for the better. Obviously, we need your generous contribution of \$5, \$15, \$25, \$100 — whatever you can give to this program. If you itemize your deductions, you can still deduct any contributions to MRNPA over and above dues from your federal income taxes. Won't you please renew your membership, and send a little more with your dues?

—Jim Baker



1917-18 FLOODS OF TAHOMA AND KAUTZ CREEKS

The Mountaineers on their annual New Year's outing to Rainier left Ashford on the Morning of December 28, 1917, according to member Elsa Grelle, "in high spirits, high temperature, and high water. Of course no one took the rain seriously, for all were certain that soon they would be struggling against a driving snowstorm." Snowshoeing! Skiing! This was the December of 26 days of snow in the mountains, followed by 9 days of warm rain. When the party reached Tahoma Creek, it was to find that the heavy concrete bridge had been thrown in a heap and submerged. Park Superintendent, Raeburn, and his men had valiantly felled one monster of a cedar tree, only to have it become partially submerged, along with many subsequent felled trees, all of which washed downstream together with great tangled masses of debris and earth from the streambank.

Somehow, hours later six of the party crossed and pushed on to Longmire. But their crossing became unsafe shortly, and soon darkness forced the remaining outing members to turn back to the Park entrance. Here, Mrs. Raeburn put her large studio at the disposal of the women, while the men slept on the floor of the office across the road.

Early the next morning found the group again standing in the rain before Tahoma Fork. By 9 AM, all had crossed and they were on their way to Longmire. The Kautz Fork had partially wrecked and was overflowing its bridge "but the wading was good," according to Grelle. The Nisqually Bridge, two miles above Longmire, still held, and the party scrambled past the roaring Paradise River, and soon donned their snowshoes. By 6 PM, even the rear guard had struggled into the Paradise Inn. Such were the "iron men and women" of the day, and such was the 40-50 inch annual rainfall, compared to our 35 inch now. Kautz Creek was to see a great water and mud surge in 1947 that extended to the Nisqually, while Tahoma Creek had two big surges, the latest and greatest this last October, when it appeared that giant earth-moving (See "1917-18 Floods" p. 7)

("1917-18 Floods" p. 6)

equipment had gouged a trench from the snout of Tahoma Glacier most of the way downstream, and overflowing and widening lower down to damage vegetation in its course.

—Edith Goodran

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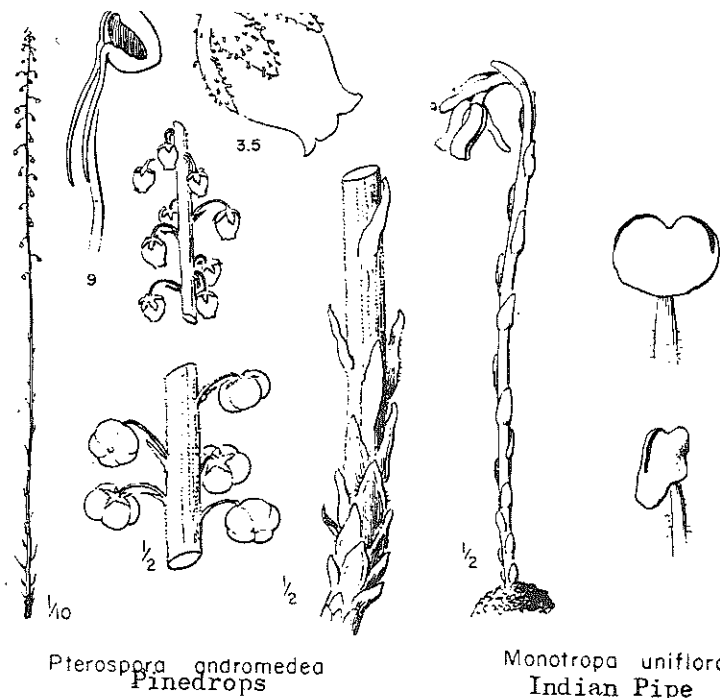
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FLOWERS IN THE OLD GROWTH

Much attention has been paid to old-growth recently, particularly in relation to national forest planning. Three national forests share boundaries with Mt. Rainier National Park, and it is thought that in some portions they may share mobile old-growth inhabitants such as spotted owl and marten as well. What is old-growth and how does it differ from second-growth and timber stands which succeed logged areas? Old-growth stands, as defined by Forest Service researchers, contain mature trees, a multi-layered canopy, usually, and trees of several age classes, snags and down material and occasional open spots. Mature trees are those whose growth has begun to decline, although depending upon species, they may live for hundreds of years more. Depending upon elevation and climate and other factors, there are various kinds of old-growth, with different tree species and accompanying plants and animals.

Second-growth, particularly if managed, is likely to consist of trees which are similar in age, and to be harvested when relatively young, before achieving the diverse plant and animal life of the old-growth stage. Much of the nutrient material from the forest soils is



locked up in the wood of the trees; much of the sunlight needed by plants to manufacture food is screened out by the forest canopy. Plants growing in the understory, then, need to be adapted to these special conditions. Plants without green leaves, which have been called saprophytes, are an extreme example of such adaptation. Most of learned that saprophytes live on dead organic matter with the help of fungi intertwined in their roots. New high-powered microscopes have enabled a Swedish researcher to

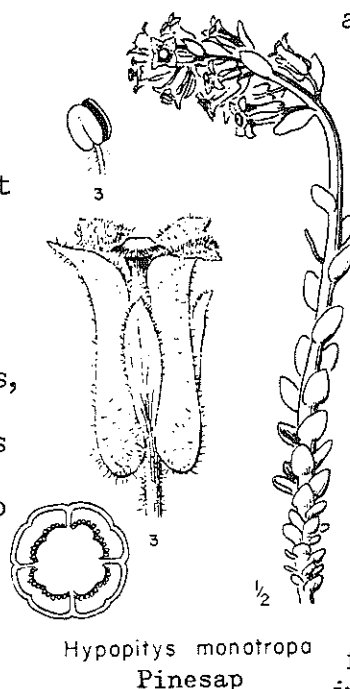
discover that those who named the pinesap long ago had at least as much understanding of the plant as did the scientists who later described saprophytes. Pinesap roots not only are connected with fungi, these same fungi have also penetrated tree roots. The fungi, which are decomposers, break down dead organic matter and furnish minerals to both tree and small forest flower. The tree furnishes other nutrients manufactured by its leaves, and so the "saprophytes" may be parasites of a sort, after all.

The jury is out on other kinds of "saprophytes," but it is strongly suspected they behave in similar ways. It is clear, however, that this group of plants can neither live without one or more hosts, nor can survive in full sunlight.

Pinesap is entirely yellowish or reddish, with flowers nodding in a bunch from the top of a thick stalk. It is common in the Park's mountain woods, while Indian

Pipe, similar in shape but white and having only one flower, was more common in lowland forests before they were cut. Tips of both these plants turn upward as seeds develop.

Pinedrops are taller, a rich brown color and (See "Flowers" p. 8)



Hypopitys monotropa
Pinesap

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Tacoma, WA

feliculously-named. Umb-shaped flowers similar to salal or madrona hang individually from the stem, as do the roundish seed capsules which remain on dried stems for a year or more after seeds have dispersed. Candystick, with a pink-and-white striped stem, is more scarce at Rainier, although apparently a mountain forest plant.

The plants mentioned so far are in the heath family, related to heathers and rhododendrons. Other leafless plants, the coralroots, are members of the orchid family. Again, there are differences between lower and higher elevation forests. The purple Mertens coralroot is more common in the Park, while the brown-spotted coralroot was more common in lowland forests outside. Other orchids are known to have root fungi, but possess green leaves. These are white-streaked in the case of the widespread rattlesnake orchid. The showy calypso orchid occurs infrequently in the Park, preferring like Indian Pipe (and spotted owl), slightly lower elevations. Park woods have very tiny, greenflowered orchids called tway-blades because they have one pair of opposite leaves.

Forest flowers which live more independently tend to be very leafy to make the most of the light available. Many have white flowers, presumably because these show up better in the shadows. Whatever their colors or lifestyle, most Northwest forest flowers seem to be pollinated by several kinds of bumblebees, a type of insect adapted to life in the boreal (northern coniferous) forest, which other pollinators are not.

While some of the complex interrelations of life in the old-growth are known, there is much more to be learned about how it all fits together into an ecosystem. The spotted owl hunts his prey here--the flying squirrel. The flying squirrel may need a place where he can glide to his food, which includes insects, fungi and lichens. Here are other connections with plants; some of the fungi, whose spores the flying squirrel helps to spread, are important to the growth of trees. Some of the lichens are known to fix nitrogen out of the air, thus providing for the forest some of this essential. Obviously, our understanding of the connections is not yet complete.

--Mary Fries

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(Illustrations from Vascular Plants of the Pacific N.W.,
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