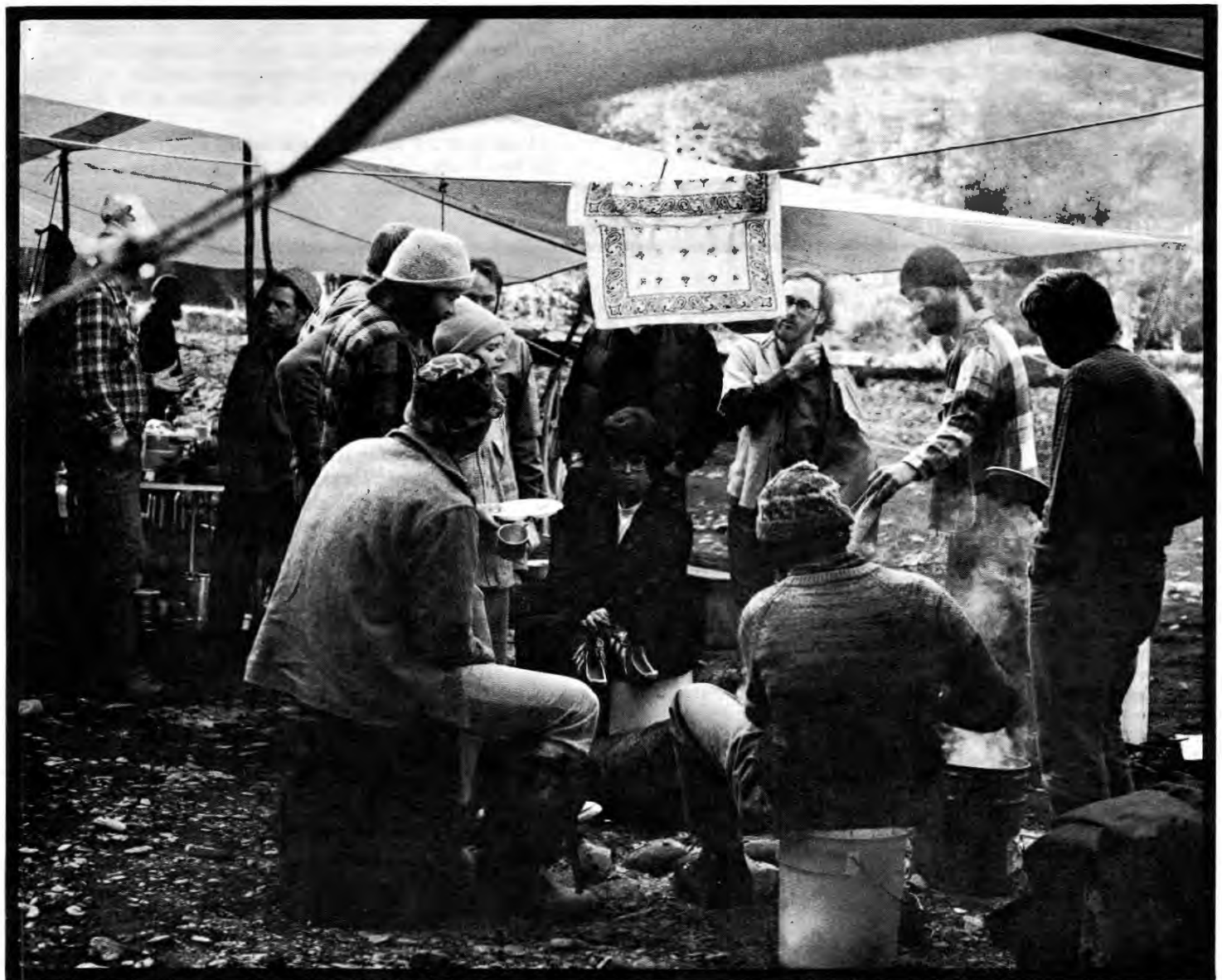




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Cover

A place to eat and exchange information, "the camp" was the heart of the Hoh River pulse study. (Story begins on opposite page.)

Cooperative Research Mix Aids Users, Preservers

The gathering of data on undisturbed land and the application of research results in managing for both multiple use and preservation is the crux of a cooperative research program involving the National Park Service, the U.S. Forest Service and two universities in the Pacific Northwest – Oregon State and the University of Washington.

Three cases in point – the Hoh river “pulse study” in Olympic National Park, the prescribed burn study at Lava Beds National Monument, and the on-board interpretation study of cruiseship travelers to Alaska, illustrate the two kinds of interaction involved – that among government agencies and universities, and that across scientific disciplines.

Managing an enormous, relatively pristine park in the face of equally enormous problems such as acid rain, air pollution and disappearing gene pools calls for measures based on knowledge as holistic as the set of circumstances that give rise to the problems.

An attempt to gain just such a knowledge base was made when Dr. Jerry Franklin of the USFS Forestry Sciences Laboratory at Oregon State University, Corvallis, organized a team of scientists to “take the pulse” of a wilderness drainage lying mostly within Olympic NP.

Results of the intensive research that filled 11 days and involved scientists, technicians and graduate students from 11 different organizations and a broad range of disciplines, will appear early next year as part of the first cooperative publications between USFS and NPS. As a General Technical Report, it will be published through the Pacific Northwest Forest and Range Experiment Station in Portland, Oregon.

In addition to an opening paper by Franklin, outlining the rationale and objective for the short-term intensive research effort in the Hoh drainage, six papers discuss various aspects of the research conducted during the pulse, one paper deals with closely related work done in the area at another time, and a final paper by Franklin, Frederick Swanson, USFS, and James R. Sedell, Weyerhaeuser Co., summarizes relationships within the valley floor ecosystems.

All seven of the individual “beats” of this pulse study contain information essential to management,

and together they extend understanding of north-western ecosystems to a distinctive variant (the rain-forest) and a larger scale (a river drainage).

Papers in the study deal with (1) Habitat and Food Resources for Invertebrate Communities, (2) Ecology and Habitat Requirements of Fish Populations, (3) interactions Among Fluvial Processes, Forest Vegetation, and Aquatic Ecosystems, (4) Structure, Composition and Reproductive Behavior of Terrace Forests, (5) Biomass, Coverage and Decay Rates of Dead Boles in Terrace Forests, and (6) Home Range and Habitat Use of Non-migratory Elk. Each of the papers contains management-specific discussion of research results.

At this stage of the search to bring science-based knowledge into the mainstream of park planning and management, the Hoh River pulse study is important for its demonstration of the numbers and types of data that can be gathered by an interdisciplinary research team in a short time span.

In their summary, Franklin, Swanson and Sedell deal with both the specifics and the generalities of the project. Specifically, they state that “the South Fork study demonstrates the use of a National Park and Biosphere Reserve as a benchmark site for scientific research and a control area for adjacent manipulated landscapes. The only remaining natural examples of river valleys in the coastal region are within the Olympic National Park.”

Generally, they describe the way they feel similar studies can be organized to produce maximum benefits for both science and management: “A successful project,” they say, “is based on substantial logistical planning and a balance between careful definition of objectives and ample opportunity to pur-

sue promising leads and for serendipitous discoveries.”

Prescribed Burning

The prescribed burning research at Lava Beds National Monument is another case where research and management objectives both have been met through cooperative effort – Monument and Modoc NF personnel, working with Dr. Robert Martin and his USFS staff in forest ecology from the Silvicultural Laboratory at Bend, Oreg.

Historically, fires started by Indians or lightning occurred every 5 to 15 years prior to the advent of successful fire control. Fire control and a catastrophic outbreak of western pine beetles in the late 1920's, coupled with heavy grazing at the turn of the century had contributed to heavy fuel accumulations and a greatly modified vegetation cover.

Management objectives for the Lava Bed burns were four: to restore “historic” vegetation sequence, to reduce accumulated fuels, to train personnel in fire use, and to develop fire management plans and programs.

Research objectives, which dovetail and in some cases overlap those of management, were to develop burning techniques and prescriptions appropriate to achieve management objectives for fuel and vegetation, to record effects of fire under differing conditions, and to develop cost data.

Burning techniques have been developed over the years from 1974 to the present and effects on vegetation have been measured. The information NPS management with its problems of preservation and maintenance, state park and wildlife agency personnel – all usually restricted to their own institu-



Nurse log gives rise to this standing row of trees, mute testimony to the essential role of dead wood in forest regeneration. (page 1.)

tional bailiwicks — can interact beneficially as they deal with mutual or overlapping problems in an economic, holistic way.

The total knowledge gained in such efforts has more meaning than the mere sum of its parts. In addition, such efforts sometimes can incorporate previously gathered data that may have lain around for years, uninterpreted and unused.

The human squeeze for space and resources impacts national parks, national forests, fish and wildlife — preservers and manipulators alike. Add the crunch of shortened funds and energy and the impetus emerges to bring together scientists from a wide variety of missions in ways that are startlingly different from the patterns of the immediate past.

In the Hoh River study, for example, the Forest Service recognizes the relatively untouched national park natural areas as gene pool repositories and as benchmarks for environmental monitoring, providing information that cannot be found in managed, highly manipulated forests. On the other hand, the intensive management research the Forest Service has pursued from the beginning has produced and continues to provide important knowledge that can show NPS managers how to maintain and perpetuate the natural resources it is their mission to protect.



Parklike lower terrace (above) of the Hoh River valley is dominated by Sitka spruce. Upper ter-

race (below) consists of denser stand of mixed Sitka spruce and Western hemlock. (page 2.)



gathering will continue regarding the effects of fire on flora and fauna over the long term. Larger burns fit into plans for fire management planning and have provided cost data for planning future burns.

Of interest to managers is the finding that even two or three prescription fires to reduce fuel loadings in one area to manageable levels are less expensive on a per hectare basis than the cost of the catastrophic wildfires they can prevent.

Cruiseship Study

The sociological research undertaken jointly by the NPS and the University of Washington's College of Forest Resources adds the important "user" or "visitor" dimension to the scientific research programs underway in the Pacific Northwest. Animal/human encounters as part of backcountry experiences, profiles of backcountry campers and their perceptions of "crowding," and studies of the characteristics of hiking parties, for example, are aiding management at such parks as McKinley and Olympic to assess the extent to which users are complying with backcountry regulations as well as how they can influence and then meet user expectations.

Better preparation of visitors and improved interpretive processes could result from the study recently completed of cruiseship passengers traveling to Southeast Alaska. Five types of tourism — ethnic, cultural, historic, environmental and recreational — were found to contribute to the overall lure that brings visitors in this way to such places as Glacier Bay. The study pinpoints peaks and valleys of traveler interest and suggests several better ways to arouse enlightened curiosity and then when and how to satisfy it.

Analysis of the study by a University of Washington research assistant, Barbara Koth, and Roger Clark, recreation research project leader with the USFS Pacific Northwest Range and Experiment Station, working with Dr. Donald Field, suggests specific ways that interpretive offerings can be matched to passenger behavior patterns. Periodic updates and modifications can make cruiseship interpretation sensitive to both shortterm and longrange management goals.

It is the Cooperative Park Studies Unit approach now in effect throughout the Pacific Northwest and the Western Regions of NPS that provides the process pathways where creative synergism can work — to the benefit of both science and management. University faculty and graduate students, research scientists from the National Park and other Services,