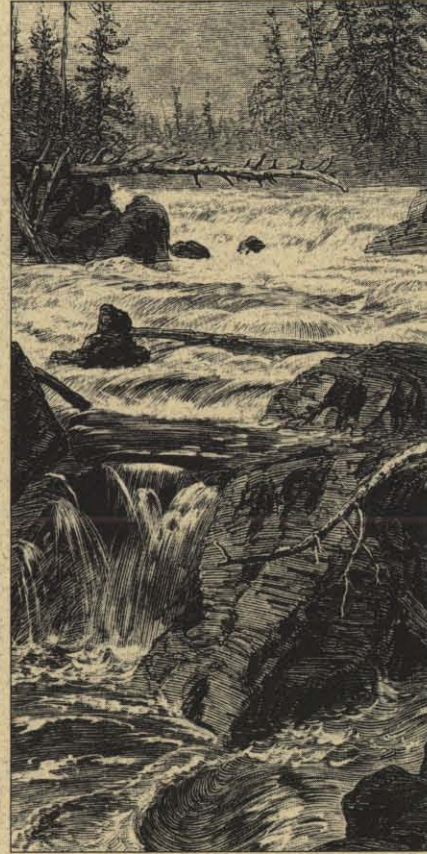


# The Pacific Northwest Rivers Study

A Cooperative River Resource Assessment by the Pacific Northwest's States, Federal Agencies, and Indian Tribes



# Study Overview

## Introduction

The rivers and streams of the Pacific Northwest are among our most valuable natural resources. Historically, these waters—some 350,000 miles of perennial stream—virtually determined the region's settlement and land-use patterns. Today they provide water for recreation, fish habitat, irrigation, municipal water supply, power generation and a variety of other beneficial public uses.

Large-scale hydropower projects have long been dominant features on the main stem and major tributaries of the Columbia River. More recently, attention has shifted to smaller rivers where a number of small-scale hydropower projects have been proposed. This activity traces its origins to the oil crisis of the 1970's and subsequent federal and state economic incentives aimed at accelerating the development of domestic energy supplies. In 1978, the Federal Energy Regulatory Commission was processing fewer than 20 hydropower permit applications nationwide. Since then, nearly 6,000 applications have been filed. One quarter of these applications—about 1,600—have been filed on sites in the four-state region of Idaho, Montana, Oregon and Washington.

Hydropower is recognized as a clean, renewable and reliable source of energy for the region. However, the recent surge in small-scale hydro development activity has created concern that new hydropower development may impact existing river values. Within the Pacific Northwest, people have voiced particular concerns about potential impacts on critical fish

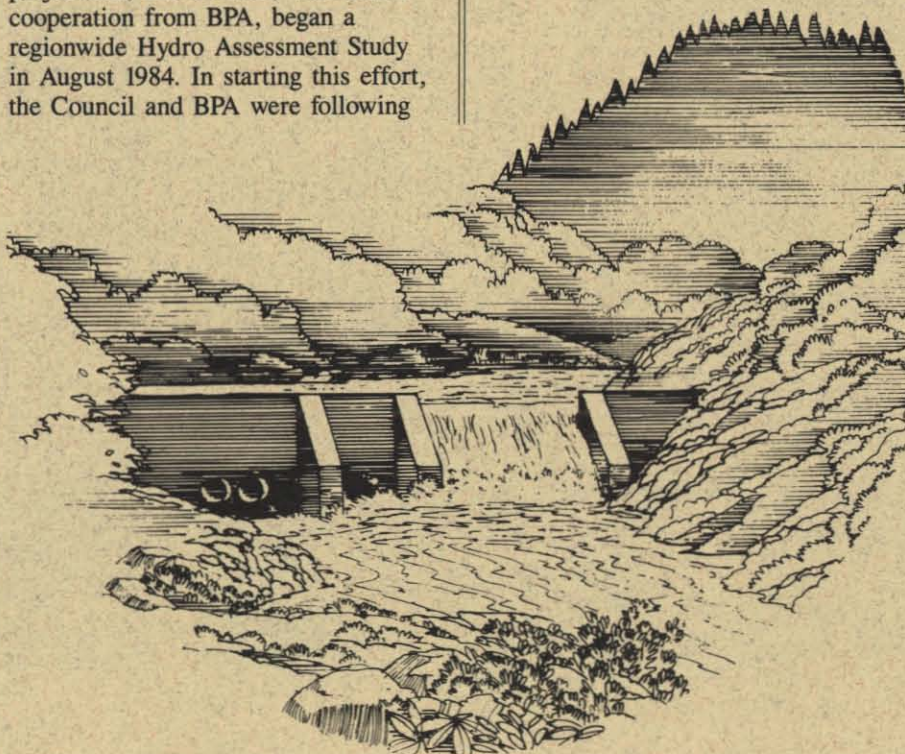
habitat. Concerns have also been expressed regarding conflicts with other environmental values, including wildlife, natural features, cultural features, and recreation.

To ensure a secure energy future for the region, both the Northwest Power Planning Council and the Bonneville Power Administration need accurate estimates of the amount of energy that can be produced from all sources, including hydropower. The current awareness of the potential for conflict between new hydro development and existing river values has created uncertainty regarding the future of hydro development.

In order to provide accurate energy projections, the Council, with active cooperation from BPA, began a regionwide Hydro Assessment Study in August 1984. In starting this effort, the Council and BPA were following

guidelines set forth in the Pacific Northwest Electric Power Planning and Conservation Act of 1980, which directs these entities to ensure adequate consideration for environmental concerns in their energy planning activities, and more specifically to "protect, mitigate, and enhance" fish and wildlife resources.

The Hydro Assessment Study includes four distinct components: the development of a hydropower-site data base; an assessment of anadromous fish; an assessment of Indian cultural sites; and an assessment of environmental values. As the study component with the broadest range of resource and geographic coverage, the environmental-values assessment was organized into a distinct study called



the Pacific Northwest Rivers Study. BPA is coordinating and funding the Rivers Study. The Council is coordinating other aspects of the Hydro Assessment Study.

The Pacific Northwest Rivers Study is an intensive effort to evaluate and document the relative environmental significance of the region's rivers and streams. Rivers Study concepts and procedures were developed by BPA in consultation with the region's resource management agencies and Indian tribes. The study was designed to be compatible with other aspects of the Hydro Assessment Study.

## Goals and Objectives

The goal of the overall Hydro Assessment Study is to provide a basis for orderly hydropower development, consistent with protection of critical fish and wildlife habitat and conservation of other valuable river resources. As a major component of the Hydro Assessment Study, the Pacific Northwest Rivers Study will provide hydropower planners with comprehensive information about environmental values of rivers and streams in the Pacific Northwest. Specifically, the Rivers Study will:

- Determine the environmental significance of river segments and systems based on resident fish, wildlife, natural features, cultural features, and recreation;
- Identify existing institutional constraints that might influence hydropower development;
- Develop an understanding among state resource management agencies, Indian tribes, federal land management agencies, and the interested public regarding study findings; and
- Produce an information base that is consistent, verifiable, ongoing, and available to users throughout the region.

**U** Both BPA and the Council will consider the results of the Rivers Study in their energy-planning activities. These include:

#### **Energy Supply Forecasting.**

Both the Council and BPA produce forecasts of regional energy supply. Rivers Study results will increase the accuracy of regional hydropower supply forecasts.

#### **Protected Areas.**

The Rivers Study will provide information on the region's important resident fish and wildlife habitat. When combined with the results of the other elements of the Hydro Assessment Study, this information will enable the Council to designate protected areas (areas where hydropower development is deemed inappropriate). This is required by the Council's Fish & Wildlife Program.

#### **Hydropower Site Ranking.**

The Northwest Conservation and Electric Power Plan provides for the Council to rank hydropower sites based on fish and wildlife concerns. An interim site ranking was completed by the region's resource agencies in 1985; the results of the Rivers Study will be used to refine that ranking.

Beyond these specific uses, the Rivers Study will produce a consistent, interagency information base which should help to promote understanding among hydropower developers, environmental organizations, management authorities, and the general public. While participating agencies and management authorities are not obligated to use study results, it is anticipated that the study information will be used by these entities in their efforts to make decisions regarding hydropower facility siting and development.

### **Study Components**

The Rivers Study will evaluate the region's rivers for the following resource values:

#### **Resident Fish**

"Resident fish" refers to game and nongame fish species that reside in fresh water throughout their lives. The assessment focuses on habitat, species composition, and public use.

#### **Wildlife**

"Wildlife" refers to game and nongame animals and birds that inhabit river and stream corridors. Habitat types, species composition, and public use are the major assessment criteria.

#### **Natural Features**

"Natural features" refers to river-related endangered or threatened plants, unique plant communities, and geologic and hydrologic features. Assessment criteria include scarcity, scientific value, recreational use, and vulnerability.

#### **Cultural Features**

"Cultural features" includes archeological, architectural, and other historic sites located within river corridors. These resources are evaluated in terms of the criteria for the National Register of Historic Places.

#### **Recreation**

"Recreation" refers to leisure activities that are directly or indirectly dependent upon flowing waters. Boating and water activities are emphasized.

#### **Institutional Constraints**

"Institutional constraints" includes laws, policies, plans, ordinances, and other administrative mechanisms that prohibit, limit, or otherwise impose conditions on hydropower development. Federal constraints are explicitly identified. State, local and Indian tribal constraints are also identified.

## Study Process

### **Concept**

Resource inventory and comparative resource assessment are the fundamental components of the Rivers Study process. Conceptually, the study is based on the recognition that perceptions about the relative significance of a river's environmental features will play a major role in determining whether a given development project succeeds or fails. While the decision to develop or prohibit specific hydropower facilities must, of course, consider project design and operation, a resource assessment can identify relevant environmental considerations and indicate the potential for adverse impact and use conflict.

The Rivers Study will produce a comprehensive and consistent product that will have utility as a strategic planning tool. Information can serve as an initial environmental scoping for developers and regulators by identifying areas where minimal adverse environmental impact can

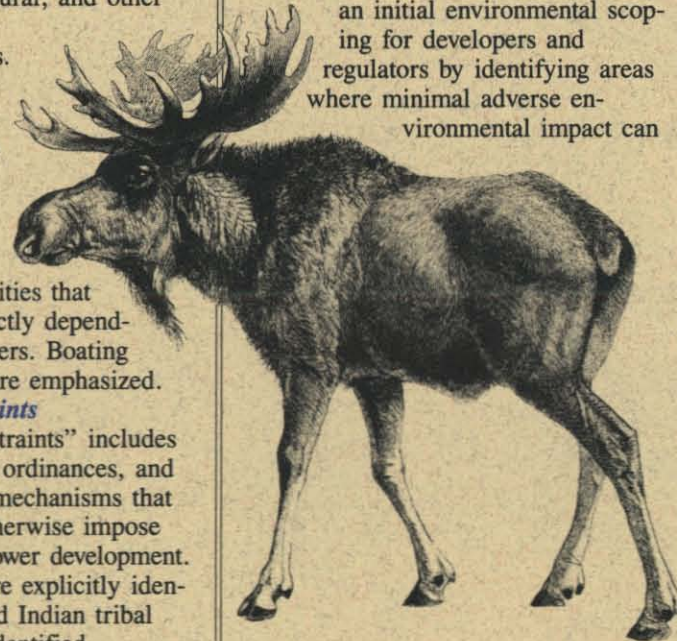
be anticipated—and thus, where development might be most appropriate.

The scope of the study is restricted to inventory and assessment. The study will not set policy or make site-specific development decisions. It is not the intent of the project to dilute the existing management responsibilities of participating agencies and Indian tribes, nor to eliminate the need to consult with these agencies and Indian tribes in accordance with existing laws and regulations during the hydropower licensing process.

### **Organization**

The Pacific Northwest Rivers Study utilizes existing governmental programs and structures. It divides responsibilities among participants, emphasizes the role of resource experts, and provides for public input and review.

Separate yet coordinated assessments are being conducted within the geographic boundaries of each of the four Northwest states. State governors have appointed coordinators with responsibility for overseeing the project. In turn, coordinators have designated a resource expert to oversee the assessment within each distinct resource category. While state agencies are providing project coordination, the actual assessment is a joint undertaking by resource specialists from federal and state resource agencies and the region's Indian tribes. Emphasis is placed on cooperative efforts, though there is no requirement that a consensus be reached regarding findings. Comments from the interested public are also welcomed.



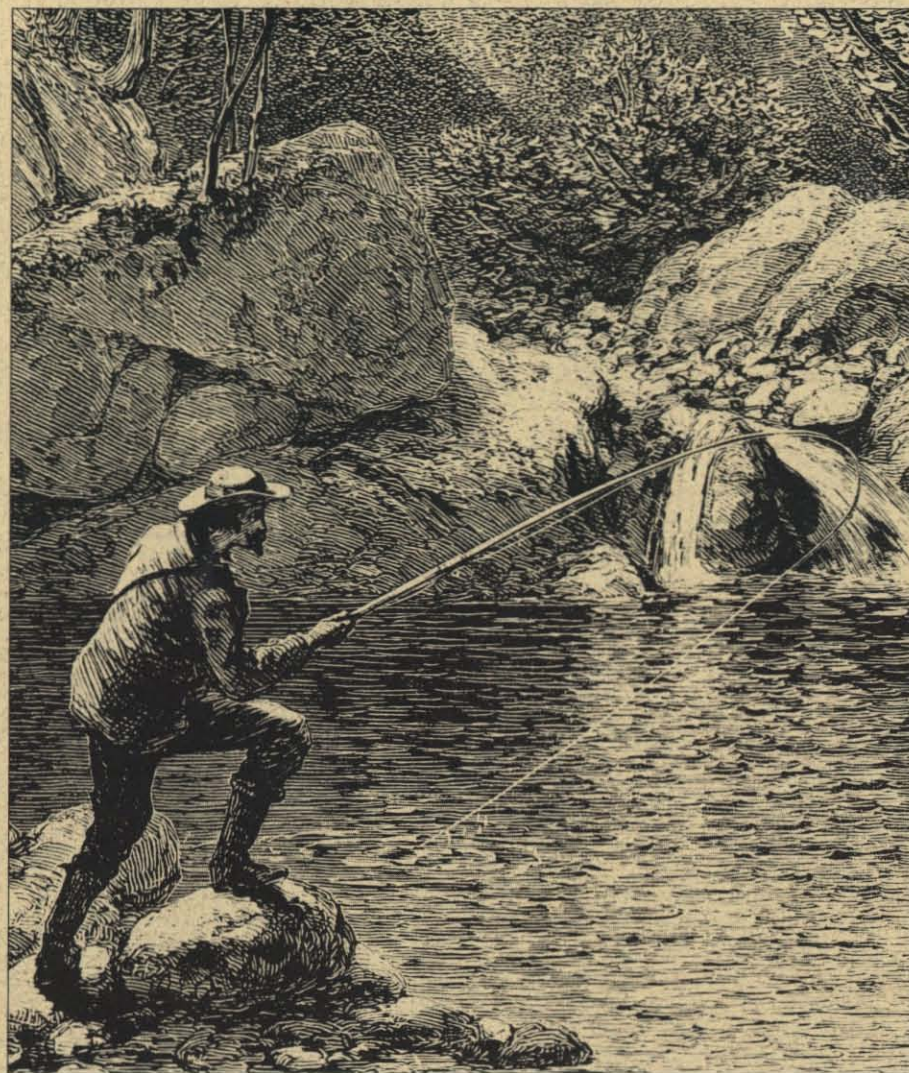
## **M**ethods

The assessment model used in this study was initially developed by the National Park Service and the State of Maine for use in the Maine Rivers Study. The method stresses objectivity and the development of verifiable results. To accomplish this, all river resources are evaluated without regard to specific development proposals. Extensive field work is not necessary; evaluation relies on existing information, expert evaluation, and input from users and the public.

The ultimate result is the determination of the relative significance of each of the region's river and stream segments based on environmental values. Segments are not ranked numerically. Rather, they are placed into one of four value classes: "Outstanding," "Substantial," "Moderate," or "Limited." (Two additional classes, "Resource Not Present" and "Unknown or Unclassified" are available for use.)

Fundamental to the study method is the emphasis on separate resource assessments for each of a number of predetermined resource categories. For each category, specialists devise assessment guidelines and conduct the assessment process.

While maintaining their status as separate study components, all category evaluations are coordinated to achieve consistent results. All use the same maps and produce compatible graphic and tabular information. Findings are verified through participant and public review. After review, findings from all resource categories will be compiled into a comprehensive information system. A detailed discussion of study methods and evaluation criteria appears in the *Assessment Guidelines* document, available from BPA and state coordinators.



## **P**roducts

Separate products will be produced for each resource category within each state. These include a detailed explanation of the method employed to conduct the assessment, including a list of information sources and participants; a tabular listing of study findings and the information used to derive findings; a series of 1:100,000-scale maps which graphical-

ly depict study findings; and 1:500,000-scale summary maps.

The information will be incorporated into a computerized data management system, which will provide the capability for update, analysis, and data transfer. Maps and resource information will be made available to participants and other interested parties.

## **Participants**

State of Idaho  
State of Montana  
State of Oregon  
State of Washington  
Northwest Indian Tribes  
USDA Forest Service  
USDI Bureau of Land Management  
USDI Fish and Wildlife Service  
USDI National Park Service  
Northwest Power Planning Council  
Bonneville Power Administration

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