

*Revised*

**Bald Eagle and Osprey Nest Survey Study Plan  
for  
Energy Northwest's  
Packwood Lake Hydroelectric Project  
FERC No. 2244  
Lewis County, Washington**

Submitted to



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**August 22, 2005**

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## **1.0 INTRODUCTION**

Energy Northwest's Packwood Lake Hydroelectric Project, FERC No. 2244, received its initial license in 1960. The majority of the Project is located within the Gifford Pinchot National Forest and consists of an intake canal, a concrete drop structure (dam) and intake building on Lake Creek located about 424 feet downstream from the outlet of Packwood Lake, a 21,691-foot system of concrete pipe and tunnels, a 5,621-foot penstock, a surge tank, and powerhouse with a 26,125 kW turbine generator.

The source of water for the Project, Packwood Lake, is a natural lake situated at an elevation of approximately 2,857 feet above mean sea level (MSL), about 1,800 feet above the powerhouse. Water discharged from the Project is released to the Cowlitz River via a tailrace channel. Power from the Project is delivered over an 8,009-foot, 69 kV transmission line to the Packwood substation.

### **1.1 Study Plan Goals and Objectives**

This study will document the presence, number, status and location of bald eagle and osprey nest locations in the proximity of Packwood Lake, and record incidental observations of bald eagle and osprey during survey effort.

## **2.0 AGENCY AND TRIBE RESOURCE MANAGEMENT GOALS AND OBJECTIVES**

The Washington Department of Fish and Wildlife (WDFW), and USDA Forest Service requested the Bald Eagle and Osprey studies. Their resource management goals and objectives were stated in their study requests and are provided below.

### **2.1 WDFW Resource Management Goals and Objectives**

WDFW identified the following management objectives for bald eagles and osprey habitat along shorelines in their study request.

- Protect nest sites, perch trees, roost trees, and foraging habitat within all WDFW Priority Habitat and Species (PHS) breeding areas, communal night roosts, and regular concentration areas, as well as areas mapped as potential breeding habitat. This includes restricting timber harvests, road building, human development and recreational disturbances.
- Protect individual large (> 4 ft dbh) live trees and snags within 328 ft. (100 m) of the shoreline. If clearcuts are proposed adjacent to the roost, the border of the clearcut next to the roost should be designed with an evenly fluctuated edge as opposed to a straight edge, to reduce wind throw.

WDFW management objectives for these two species include:

- Continue to work with landowners to develop site-specific management plans for nesting territories and communal night roosts. Under Washington State Bald Eagle Protection Rules,

a cooperative site management plan is developed whenever activities that alter habitat are proposed near a verified nest territory or communal roost.

- Encourage landowners to retain old-growth habitat, and individual large live trees and snags within areas used, or likely to be used by eagles.
- Assist landowners in conducting habitat enhancement projects to create late-successional conditions in areas used, or likely to be used by eagles.
- Develop agreements with landowners to limit recreational activities near breeding areas, night roosts and concentration areas.
- Continue conducting surveys to assess occupancy of nest sites and nest productivity.
- Encourage timberland owners to close roads around eagle habitat during critical times of the year.

## **2.2 USDA Forest Service Resource Management Goals and Objectives**

The Forest Service management goals for wildlife species on National Forest Lands come from a variety of sources, including the National Forest Management Act, as amended, the Endangered Species Act of 1974, as amended, the Forest Service Manual, and forest planning documents.

The Gifford Pinchot National Forest Land and Resource Management Plan as amended by the Northwest Forest Plan (1995), provides management direction for all National Forest System lands and their associated resources directly affected, or in the vicinity of, the Packwood Lake Hydroelectric project. Page 2-71 states that 1) *All project areas affected by management activities will be reviewed for Sensitive, Threatened, or Endangered plant and animal species* and, 2) *A Biological Evaluation will be conducted before ground disturbing activities occur which may affect Sensitive species*. The goal for Sensitive species (Forest Service Manual 2600) is to prevent them from trending to federal listing as Threatened or Endangered species and a loss of viability.

## **3.0 EXISTING INFORMATION AND NEED FOR ADDITIONAL INFORMATION**

### **3.1 Existing Information**

The bald eagle (*Haliaeetus leucocephalus*) is currently state and federally listed as threatened and has recently been recommended for downlisting due to increasing numbers throughout the Western United States. Important habitat elements for the bald eagle are usually found within older, uneven-aged forests containing suitable nesting, perching, and roosting trees adjacent to suitable feeding areas (Anthony et al. 1982). Within western forested areas, nests are usually located near the top of dominant or co-dominant trees generally with commanding views of feeding grounds; habitual roosting and perching trees are also members of the forest overstory. Currently, regular small concentration areas, perch trees in breeding areas and communal roosting trees are managed as priority habitats by Washington Department of Fish and Wildlife (WDFW 2004). Suitable nesting, perching and roosting trees are almost exclusively located adjacent to open water bodies with nearly all of the active nests in Washington (97%) located within 1000 m of a lake or reservoir shoreline (Stinson et al. 2001).

There are no known bald eagle nests in the vicinity of Packwood Lake at present, although this may be due to the lack of any formal, comprehensive survey effort. The lake appears to offer ideal bald eagle nesting habitat, and the observations of immature birds in late summer may indicate that nesting may, in fact, be occurring.

Osprey (*Pandion haliaetus*) is currently a monitor species in Washington State with status intended for the protection of nesting locations (WDFW 2004). The osprey is not federally listed, although the Gifford Pinchot Land and Resource Management Plan, as amended by the Northwest Forest Plan (1995), does reference the osprey and prescribe a protective buffer of approximately 660 feet around each identified nest site. There are two identified nest sites in the vicinity of Packwood Lake, but only one of these has been monitored on an intermittent and opportunistic basis. Due to the lack of comprehensive survey effort, there is the potential that other active nests may exist. Ospreys roost and nest on poles or snags; they build massive and conspicuous stick nests immediately adjacent to fish-bearing waters (Henny et al. 1978). Ospreys feed almost exclusively on live fish captured at or near the water's surface (Bent 1937). Individual pairs show variation in the ability to tolerate human activity (Van Daele and Van Daele 1982).

Water bodies such as Packwood Lake usually provide excellent foraging opportunities for piscivorous (fish-eating) birds such as bald eagle and osprey. Bald eagle records at Packwood Lake indicate birds have been observed using the shoreline habitat for both foraging and roosting activities and birds have been observed recently along the Cowlitz River near the confluence with Lake Creek (personal observation). While there are no breeding records at Packwood Lake for bald eagle, nesting habitat appears to exist and immature birds have been observed in the area. As with bald eagles, Packwood Lake offers suitable nesting habitat for osprey and two nest sites have been documented with only one monitored infrequently.

### **3.2 Need for Additional Information**

Additional information for these two species is required as no documentation currently exists of the presence, number, status and location of bald eagle and osprey nest locations in the proximity of Packwood Lake.

## **4.0 NEXUS BETWEEN PROJECT OPERATIONS AND EFFECTS ON RESOURCES**

Impacts to the threatened bald eagle must be displayed and evaluated in the required Biological Assessment for the project, and the nesting survey data would be an integral part of the analysis process for this species.

## **5.0 STUDY AREA AND METHODS**

### **5.1 Study Area**

The study area includes the shoreline of Packwood Lake and an area extending a distance approximately 1,000 ft upslope perpendicular to the shoreline. The area may be locally

expanded if there are indications of nesting activity at a greater distance but still in close proximity to Packwood Lake.

## **5.2 Methodology**

A bald eagle and osprey nest survey will be conducted by aerial helicopter survey at Packwood Lake by an experienced biologist. The desired observation altitude is 600 ft above the ground, averaged for local topography. Surveys will not be conducted during severe inclement weather due to safety concerns. Timing of surveys will follow suggested breeding chronology (Watson and Rodrick 2001):

- Incubation/Early Nestling Period (first two weeks of April). Previous to this period, breeding pairs will have established territories and built or repaired nests. Pairs should be tending nests in the form of incubating or caring for nestlings.
- If nests are located, an additional survey will be conducted during late Nestling/Fledging Period (best period June 10 - 25). During this period the number of nestlings approaching fledgling stage can be determined for active nests.

If bald eagle or osprey nests are located, recorded data will include: observer notes of the survey, nest location, status, and any response to observer; photographs of the nest; and the position of the nest will be recorded. A hand-held GPS unit will be used to identify location. A dense forest canopy may require that nest locations be estimated and plotted on a map using triangulation techniques. If the nest is determined to be active, the nest will be documented using a nesting form, photographed and position recorded.

Energy Northwest and the agencies believe one year of aerial survey effort is sufficient to meet the study objectives.

## **5.3 Products**

Survey results will be summarized in a report presented to the agencies, tribes and stakeholders. Energy Northwest will consult with WDFW and the Forest Service regarding the release of information on the exact location of any active nest sites in order to protect their integrity.

## **5.4 Consistency with Generally Accepted Scientific Practice**

The proposed methods are consistent with scientifically accepted protocol (Watson and Rodrick 2001; Pendleton et. al. 1987). The level of effort is similar to that completed for other similar projects that do not propose an operational change.

## **6.0 CONSULTATION WITH AGENCIES, TRIBES AND OTHER STAKEHOLDERS**

Energy Northwest initiated consultation with the Forest Service in December 2003, and with other agencies and the tribes in 2004. Energy Northwest expects agency and tribal staff, and other interested stakeholders to participate in meetings with stakeholders to discuss, revise and

finalize the proposed study plan. Stakeholder representatives will also be invited to provide information for the study and technical reviews of the draft report.

## **7.0 PROGRESS REPORTS, INFORMATION SHARING, AND TECHNICAL REVIEW**

A draft report will be distributed mid-September 2006. Energy Northwest will consult with WDFW, USFWS, and USFS regarding the release of information on the exact location of any active nest sites in order to protect their integrity.

## **8.0 SCHEDULE**

Surveys will be initiated in April of 2006 with a draft report issued by mid-September 2006. If active nests are identified, late Nestling/Fledging surveys will be scheduled for early June through early July 2006, with the best period June 10-25.

## **9.0 LEVEL OF EFFORT AND COST**

The anticipated level of effort is one person day to complete the initial aerial survey. An additional survey in summer to determine productivity (one or two person/days) is necessary if nests are identified. Additional time is needed to prepare a draft and final report. The estimated cost for this study (based on one year of field studies) is \$7,115, which includes two days of follow up field surveys to determine nest productivity.

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