

Public Version
Revised

**Cultural Resources Study Plan for
Energy Northwest's
Packwood Lake Hydroelectric Project
Lewis County, Washington**

Submitted to



**P.O. Box 968
Richland, Washington 99352-0968**

Submitted by



**Gail Thompson, Ph.D.
119 Pine Street, Suite 301
Seattle, Washington 98101-1952
206.343.0226 phone, 206.343.0249 fax**

August 22, 2005

Table of Contents

Section	Title	Page
1.0	INTRODUCTION	1
1.1	Goals and Objectives	1
2.0	EXISTING INFORMATION AND NEED FOR ADDITIONAL INFORMATION	3
2.1	Previous Studies.....	3
2.1.1	Archaeology and History	3
2.1.2	Ethnography.....	4
2.2	Culture History.....	4
2.3	Known Resources	6
2.3.1	Native American Archaeological Sites.....	7
2.3.2	Historic-Period Archaeological Sites and Trails.....	8
2.3.3	Traditional Cultural Properties	9
2.3.4	Historic Building.....	9
2.4	Need for Additional Information	9
3.0	NEXUS BETWEEN PROJECT OPERATIONS AND EFFECTS ON RESOURCES ...	10
4.0	STUDY AREA AND METHODS	10
4.1	Study Area	10
4.2	Archaeological Inventory.....	11
4.2.1	Archival Research.....	11
4.2.2	Field Survey	11
4.2.3	Data Analysis.....	12
4.3	Identification of Traditional Cultural Properties.....	12
4.4	National Register of Historic Places Evaluation.....	13
4.5	Analysis of Effects and Development of Historic Properties Management Plan	14
4.6	Study Products	15
4.7	Consistency with Generally Accepted Scientific Practice.....	15
4.8	Relationship to Other Studies	15
5.0	CONSULTATION WITH AGENCIES, TRIBES AND OTHER STAKEHOLDERS ...	15
6.0	PROGRESS REPORTS, INFORMATION SHARING, AND TECHNICAL REVIEW	16
6.1	Progress Reports	16
6.2	Information Sharing.....	16
6.3	Technical Review.....	16
7.0	SCHEDULE.....	16
8.0	LEVEL OF EFFORT	17
9.0	LITERATURE CITED	17

List of Figures

Figure	Title	Page
1-1.	Project Location.....	2

List of Tables

Table	Title	Page
Table 2-1.	Cultural Resources in the Packwood Lake Hydroelectric Project Area	6

1.0 INTRODUCTION

Energy Northwest's Packwood Lake Hydroelectric Project (the Project), FERC No. 2244, received its initial license in 1960. Much of it is located within the Gifford Pinchot National Forest. The Project 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 Project location is shown on Figure 1.

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 Goals and Objectives

The cultural resources study will identify historic properties within the Area of Potential Effects (APE) for the Project, assess potential relicensing effects on them, and develop a Historic Properties Management Plan. The work will be conducted in consultation with the Gifford Pinchot National Forest, the Cowlitz Indian Tribe, the Yakama Nation, and the State Office of Archaeology and Historic Preservation. Research tasks will include inventory of archaeological sites and traditional cultural properties, and evaluation of their eligibility for listing in the National Register of Historic Places. Archaeological sites include both prehistoric and historic-period sites that are 50 years of age or older.

Traditional cultural properties (TCPs) are associated with the cultural practices or beliefs of a living community that are rooted in that community's history and are important in maintaining the continuing cultural identity of the community. Examples of American Indian TCPs include locations where resources such as berries or basketry materials have traditionally been gathered; places associated with the traditional beliefs of a group about its origins, its history, or the nature of the world; and locations where religious practitioners have historically gone and are known or thought to go to today, to perform ceremonial cultural practices. Historical buildings and structures are not included in the study because those related to the Project are less than 50 years old; and others are not located within the Project Boundary, which constitutes the APE.

As a federal undertaking, FERC's licensing of the Project will permit activities that may cause changes in the character or use of historic properties. Historic properties are any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places. FERC therefore must comply with Section 106 of the National Historic Preservation Act, as amended, which requires the head of any federal department or independent agency having the authority to license any undertaking to take into account the effect of the undertaking on historic properties. Assessment of historic properties is conducted in consultation with the Gifford Pinchot National Forest, the Washington State Historic Preservation Officer, the Cowlitz Indian Tribe, and the Yakama Nation.

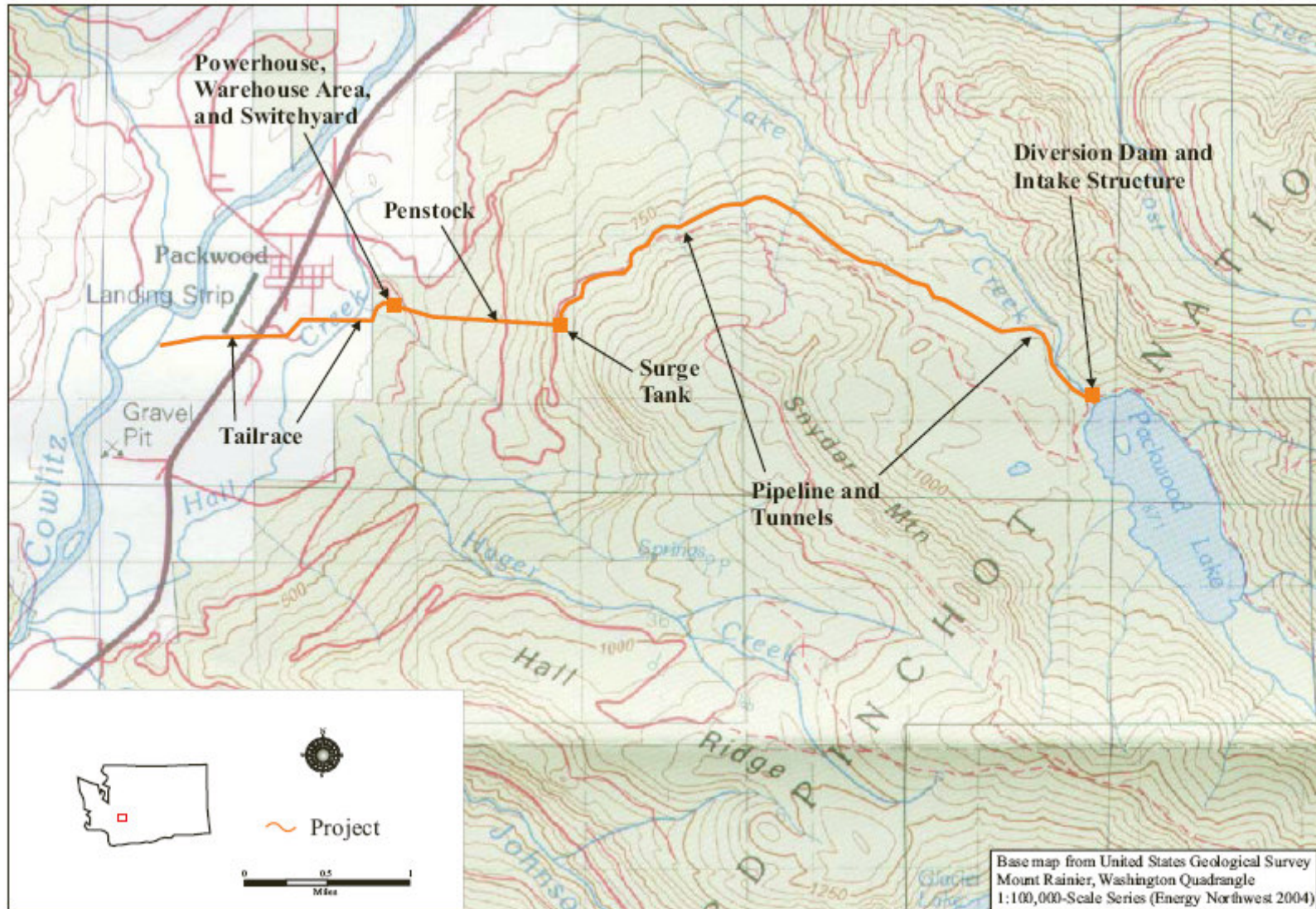


Figure 1-1. Project Location

The study will be used to determine if licensing of the Project will have an adverse effect upon National Register-listed or eligible archaeological properties or traditional cultural properties and to develop a Historic Properties Management Plan. Several steps are typically undertaken to meet this goal:

- An inventory to identify and evaluate the prehistoric and historic-period archaeological sites within the APE (the area in which the Project could affect historic properties);
- Consultation with tribal representatives to document traditional cultural properties or areas that are currently being used for cultural or religious purposes within the APE;
- Evaluation of National Register eligibility to determine which resources are historic properties;
- Documentation of Project-related impacts to eligible properties; and
- Development of a Historic Properties Management Plan with measures to avoid, reduce, or mitigate impacts to historic properties.

Following this introduction, Section 2 of this Study Plan summarizes existing information on the cultural resources near the Project and identifies additional information needs, while Section 3 notes the nexus between Project operations and effects on cultural resources. Section 4 sets out the planned studies and methods, and Section 5 discusses consultation with the tribes and agencies. Section 6 describes the progress reports, information sharing, and technical review, while Section 7 outlines the schedule, and Section 8 discusses the approximate level of effort and cost. A bibliography containing references cited and other relevant works is included in Section 9.

2.0 EXISTING INFORMATION AND NEED FOR ADDITIONAL INFORMATION

The following sections discuss previous cultural resources studies in the Project Area, followed by an overview of the area's culture history, the known resources, and need for additional information.

2.1 Previous Studies

2.1.1 Archaeology and History

Since 1980, a series of heritage resources surveys has been conducted within the vicinity of the Project. Forest Service personnel carried out these surveys in conjunction with specific agency projects in the general area of Packwood Lake and the Project's penstock route. Initial work involved documentation in 1982 of the historic Packwood Lake Guard Cabin/Ranger Station (McClure 1982).

Forest Service personnel identified prehistoric lithic artifact material in 1986 and documented the site as 45LE285. Archaeologists conducted a more detailed investigation of the site in April and May of 1987. This survey included test excavations (McClure 1987a). In August of that year, additional test excavations took place in a nearby location. Jeffrey Markos analyzed the artifact material from the 1987 test excavations and reported the work in his 1990 Master's thesis, which was subsequently published by the Forest Service (Markos 1990). In 1991, Forest Service

archaeologist Janet Liddle supervised a cultural resources survey at 45LE285 in conjunction with the installation of a new well (Liddle 1991). Her work involved subsurface shovel probes designed to identify the horizontal extent of subsurface lithic artifact material.

In 1992, Forest Service archaeologist Dale Fournier conducted a survey. This work documented the resort's history and recorded historic-period features in the general area (Fournier 1993). Forest Service archaeologist Richard McClure supervised archaeological sampling and monitoring in the area (McClure 2004a).

Two previous cultural resources surveys have involved the area in which the Project's pipeline route and penstock are located. A reconnaissance survey conducted in 1980 identified remains of the ca. 1910 Valley Development Company tramway hoist house. A 1990 cultural resources survey identified several historic-period features, including the flume bed, tramway grade, and trail constructed by the Valley Development Company (Liddle 1990). Other historic features associated with Valley Development Company activities were noted in the vicinity.

In the summer of 1987, Forest Service staff coordinated an archaeological investigation of site 45LE285 to assess the significance of the site in terms of eligibility to the National Register of Historical Places, and to determine if the site would be affected by a proposed project.

2.1.2 Ethnography

Information pertaining to the Cowlitz Indian uses of the Packwood Lake basin comes from the accounts of Taidnapam informants, all born in the 19th century. Martha Hardy, a Bellevue teacher, conducted interviews with Taidnapam elder Mary Kiona in September 1964 and August 1965. Additional information has come from Taidnapam elder Jim Yoke, who gave interviews to anthropologist Melville Jacobs in 1927 and 1928.

2.2 Culture History

Packwood Lake formed about 1100 years ago when a landslide from Snyder Mountain blocked the Lake Creek valley (Energy Northwest 2004:29). Archaeological evidence demonstrates Native American use of the Packwood Lake area in the late prehistoric period, as early as ca. 1100 years Before Present (AD 850). The cultural affiliation of the prehistoric people who used the lake basin is not known, but evidence suggests continuity with historic-period Indian inhabitants of the upper Cowlitz River watershed. In the early 19th century, the Project area lay within the territory of the Taidnapam, or Upper Cowlitz Indians. Taidnapam settlements were located along the upper Cowlitz River and included *chawachas*, near present-day Packwood. Seasonal camps in the Packwood area were located at Muddy Fork, Skate Creek, and Hall Creek (Combs et al. 1954).

Taidnapam use of the Packwood Lake basin is well documented. Born in the late 1840s, local Taidnapam elder Jim Yoke described the original name of the lake as *cuyu'ik* (Yoke 1934:231). The earliest known map of the lake shows the name as Ackushnesh Lake (Cunningham 1910).

Packwood Lake was important to local native people for its resident trout (*ay'witcin* or *aytmín*). Taidnapam oral traditions recorded in the early 20th century include two variations of a legend regarding the introduction of trout to the lake (*Chehalis Bee-Nugget* 1909; Jacobs 1934). Fishing occurred from late May to early July, when trout entered streams around the lake to spawn, and likely involved the use of small weirs or basket traps. Racks were set up over fires to dry the fish; some were also skewered and roasted (McClure 1987a). In late summer, native people also visited the lake to pick huckleberries (Irwin 1994; Kiona 1965). Huckleberry patches were probably located on south-facing slopes and ridges around the lake. Taidnapam use of the lake in the period ca. 1820-1850 included the occupancy of one or more temporary camp locations (McClure 1987a:10,12).

In 1861, James Longmire and William Packwood were the first non-natives to travel into the area (Delacy 1861). William Packwood is credited with the Euro-American discovery of Coal Creek and Lake Creek in 1869 (Combs et al. 1954). The decline of traditional use at Packwood Lake seems to coincide with the initial period of Euro-American settlement in the upper Cowlitz River “Big Bottom” area near Randle. By 1900, local settlers were attracted to the lake “for recreation and pleasure as well as to catch large amounts of fish” (Combs et al. 1954).

In 1906, the Portland Railway Light and Power Company (now Portland General Electric) started preliminary surveys for construction of a hydroelectric power plant at Packwood Lake. The Valley Development Company ultimately planned construction of a 100-foot-high dam near the outlet of Packwood Lake with a flume to transport water to a generating plant near the present community of Packwood. The company planned to sell electricity to the City of Tacoma.

Construction began in 1910, but was subsequently suspended when City of Tacoma officials determined the project was infeasible (Combs et al. 1954). Construction included a trail to the lake, and a temporary power plant (dismantled and removed to Portland in 1920) that was put in on Snyder Creek. Also in 1910, four log buildings were constructed in the area: a cookhouse, two bunkhouses, and an office building. All supplies and equipment were brought in on packhorses (Combs et al. 1954).

By 1917 the Forest Service established a public campground at Packwood Lake and at the same time assumed ownership of the Valley Development Company holdings at the lake. The Forest Service used a former Valley Development Company cabin as a seasonal ranger station. During the summer, a forest guard was stationed at the lake to conduct fire patrols, trail maintenance, and general recreation management activities (USDA Forest Service 1936). For many years, horseback rangers and fire patrolmen used the cabin as a staging area for trips into the backcountry of the Goat Rocks Wilderness and Cascade Mountains (USDA Forest Service 1993). Following construction of the Packwood Lake Hydroelectric Project in 1963, the Forest Service built a new guard station at the lake. The other three buildings no longer exist; one building was destroyed by fire and two were dismantled in the 1930s (McClure 1987b, 2004b).

Recreational use of the lake continued to increase throughout the 20th century. The popularity of the lake among anglers led to the development of a tent camp resort under permit to the Forest Service near the outlet in 1921. The proprietor of the resort, M.O. Higgins, in addition to providing meals, rented handmade cedar boats. Cabins eventually replaced the tents. In 1935, Ralph and Agnes Neeley and

Charles Sawyer purchased the concession, constructing a two-story cedar lodge complete with store, kitchen, and dining area. They also constructed a floating dock and a boathouse, and had new rowboats packed in to the lake on the backs of mules (McClure 1987a; Neeley and Neeley 1968). The owners built 11 small wood cabins and rented them to overnight guests. Electricity to the resort originally came from a water-driven generator on Lake Creek.

The concession changed hands several times from 1946 until the Neeleys returned in 1965 (Cardwell 1966). They ran the concession again from 1965 to 1967, when they leased the concession to Mrs. Hunter (Morton Journal 1974). In 1972, when Virginia Hunter owned the resort, the main lodge, the utility room, and the boiler building were damaged by fire (Chehalis Chronicle 1972). In 1974, when the Neeleys again took over the concession, they removed most of the old cabins and replaced some of the old boats with fiberglass boats (Lange 1977). The boat concession, with boathouse and dock, continued until 1991.

2.3 Known Resources

A total of 16 heritage resources have been identified in the vicinity of the Project, most included in the inventory database maintained by the Heritage Program, Gifford Pinchot National Forest. Table 2-1 lists the sites. Previous heritage resources surveys have included about 10-20 percent of the water conveyance route (McClure 2004b).

Table 2-1. Cultural Resources in the Packwood Lake Hydroelectric Project Area

FS Number	Name	Significance	Reference
13092303	Valley Development Company telephone line	Not evaluated	Liddle 1990
13092304	Valley Development Company tramway hoist house	Not evaluated	Liddle 1990
13092305	Valley Development Company road and flume bed	Not evaluated	Liddle 1990
13092401	Valley Development Company road/flume bridge	Not evaluated	Liddle 1990
13092601	Valley Development Company Smoothrock Creek Bridge	Not evaluated	Liddle 1990
13102101	Packwood Lake Guard Cabin	NRHP-eligible	McClure 1982
13102102	Packwood Lake Resort Site	Not eligible	Fournier 1993
13102103	Big Sleep Peeled Cedar	NRHP-eligible	Freymond 1992
13102115	45LE285	NRHP-eligible	McClure 1987a, 1987b
13102801	Fishtrap	Not evaluated	McClure 1982
13102802	Game Department Cabin Site	Not evaluated	McClure 1982
13102803	Cuyu'ik Site	Not evaluated	Jensen & Liddle 1987
13102804	Lithic isolate artifact	Not evaluated	Jensen 1988
13103301	Fishtrap	Not evaluated	McClure 1982
45LE271	Prehistoric Site	Not evaluated	Rice 1969
45LE415	Prehistoric Site	NRHP-eligible	McClure 1992, 1998

2.3.1 Native American Archaeological Sites

Two Native American archaeological sites, one isolate prehistoric artifact, and a historic-period peeled cedar tree have been recorded in the area (McClure 2004b). Two prehistoric sites have been recorded in the vicinity of Packwood.

45LE285. This site consists of prehistoric lithic artifact material, identified in 1986. The 1987 test excavations at the site determined it to be eligible for listing in the National Register (McClure 1987b). Some of the work produced quantities of prehistoric artifact material from a stratum beneath the Mount St. Helens subset *Wn* tephra (dating to about 470 years ago). Early 20th century artifacts came from the stratum overlying the tephra (Markos 1990). The excavation of 54 subsurface probes in 1991 found that the site covers about 1,575m² (Liddle 1991).

Researchers concluded that 45LE285 primarily represents utilization of the lakeshore area approximately 500 to 1,100 years ago (Markos 1990). Activities in the area focused on the production of tools, and the data do not suggest hunting or processing activities. It is likely that seasonal use of the lake area began with the onset of trout spawning sometime during late spring to early summer. As the season progressed, additional resources such as huckleberries became available in the surrounding hillsides. Later, when access to the upper elevations of the Goat Rocks area was possible, people traveled there to procure mountain goats as well as other game. Resource acquisition in the vicinity of Packwood Lake probably ended about the time the fall fish-runs began in the upper Cowlitz River, when the people returned to the villages in the valley (McClure 1987b). The Forest Service determined the site to be eligible for the National Register of Historic Places (USDA Forest Service 1993).

Cuyu'ik Site (13102803, 45LE286). Cuyu'ik consists of lithic artifact material (USDA Forest Service 2003). Material collected by the Forest Service includes 82 pieces of debitage and 5 formed tool fragments, including 3 projectile point fragments, a biface preform fragment, and a scraper.

Big Sleep Peeled Cedar Site. The Big Sleep Peeled Cedar site has been determined eligible for the National Register of Historic Places (McClure 2004b; USDA Forest Service 1993).

45LE271. David E. Rice (1969) recorded a small, single component site containing approximately 300 projectile points in the vicinity of the Cowlitz River. In addition to an assemblage of projectile points diverse in form (triangular and leaf-shaped points to corner-notched points) and raw material (obsidian and local red jasper), cultural materials including “calcined bone fishing barbs, some end scrapers, and pieces of ground realgar” were also collected (McClure 1998; Rice 1969).

45LE415. Inadvertently discovered in 1990 following backhoe trenching, 45LE415 contains one of the largest archaeological samples from the upper Cowlitz River valley area (McClure 1992, 1998). Lithic raw materials in the assemblage are predominantly andesite, dacite, and argillite, with smaller quantities of jasper, chalcedony, chert, and obsidian. Representing all stages of lithic reduction, the collection includes bifacial blanks, preforms, projectile points, unifacial tools, and cobble choppers. Although no radiocarbon dates were obtained, results of obsidian hydration analysis, tephra identification, and projectile point typology suggest that the

assemblage represents a period of prehistoric use spanning from ca. 6,000 to 2,000 Before Present Based on factors including relatively low elevation, proximity to a permanent water source, and a diverse artifact assemblage, McClure (1992) concluded the site was likely a settlement or field base camp.

2.3.2 Historic-Period Archaeological Sites and Trails

Valley Development Company Sites. Several sites contain remains related to the Valley Development Company dating between 1909 and 1912, although only minimal documentation exists. Remnants of the tramway hoist house (FS 13092304) were identified in 1980. Other facilities related to the Valley Development Company were identified in 1990, including a telephone line (FS 13092303), road and flume bed (FS 13092305), and road/flume bridge (FS 13092401). Much of the tramway site was disturbed during the 1960s (Liddle 1990; McClure 2004b).

A small amount of historic-period archaeological debris from the area of the four log buildings was encountered during field investigations at site 45LE285 (McClure 1987a). The Forest Service recovered a small number of historic-period artifacts from excavating subsurface probes during monitoring in the area (McClure 2004a).

Packwood Lake Resort (FS 13102102). Forest Service Archaeologist Dale Fournier (1993) documented Packwood Lake Resort site features consisting of packed earth foundations and small amounts of glass and wood debris. A Forest Service environmental assessment conducted in 1993 concluded that the resort had lost its integrity as a historic site/district for three reasons: 1) buildings had been moved or dismantled; 2) many of the original buildings were covered with later structures; and 3) much of the original building timber was reused for construction of the new structures or, in some cases, was used for firewood. In 1964, Forest Service personnel buried the trash dump. Today there are no extant structures or intact dumps from the Packwood Lake Resort site. Since much of the material was reused or removed during the previous five decades, there is very little cultural material remaining from the site. Because of the absence of standing structures and intact refuse dumps, and the overall loss of integrity of the site, the Packwood Lake Resort site can no longer yield information concerning the building and use of historic resort complexes or their role in the development of the region. The site is considered ineligible to the National Register of Historic Places and Office of Archaeology and Historic Preservation has agreed (USDA Forest Service 1993).

Fisheries Management Sites. Three sites, reported only in surveyor field notes, are related to fisheries management activities of the State Game Department in the early 1900s. They include a reported cabin site and two fishtrap features. A fish-egg eyeing station was also believed to be located in the area (USDA Forest Service 1993).

Historical Trails. Three historical trails are located in the area: Trail #69 “Three Peaks Trail” first appears on a 1924 map and portions are currently maintained near the end of Road 1266 to Mosquito Lake. Trail #78 “Packwood Lake Trail” was built in 1909 by employees of the Valley Development Company, was re-routed in 1963-1964, and is currently maintained. Trail #81

“Upper Lake Trail” was first noted on a 1931 map; it runs along the east side of Packwood Lake and is currently maintained (USDA Forest Service 1993).

2.3.3 Traditional Cultural Properties

A map dating to 1910 shows the name of Packwood Lake as Ackushnesh Lake (Cunningham 1910), and Taidnapam elder Jim Yoke reported the name of the lake as *Cuyu'ik*, recounting a legend about the introduction of trout into it (Yoke 1934:231). The lake was important to local native people for its resident trout (*ay'witcin* or *aytmin*). A comprehensive inventory of ethnographic sites within Gifford Pinchot National Forest, conducted between 1992 and 1995, acknowledged traditional use of Packwood Lake, but identified no specific cultural places (Hadja et al. 1995). Traditional fishing sites could occur in the area (McClure 2004b). Base camps, associated with picking berries on mountain slopes or ridges also may be located in the vicinity.

2.3.4 Historic Building

Packwood Guard Station (#1166; FS#13102101). One of the log buildings built in 1910, the Packwood Guard Cabin, still stands. The Valley Development Company used this cabin for its construction camp, and it later served as a seasonal Forest Service Ranger Station. Forest Service personnel documented the structure in 1982, finding it eligible for listing in the National Register of Historic Places (McClure 1982). The State Historic Preservation Officer concurred with the finding, and although the Forest Service nominated the property (formal notice published in the *Federal Register* in August 1982), it has not been listed in the National Register. The building is located outside the APE.

2.4 Need for Additional Information

According to the Forest Service Existing Information Analysis for the Packwood Lake cultural resources work (McClure 2004b), archaeological surveys have included virtually all of the lake shoreline, and 10-20 % of the water conveyance route has received survey. Subsurface sampling was not utilized as a survey strategy except in determining the boundaries of site 45LE285 (McClure 2004b).

The Forest Service archaeologist has expressed concern that the resources inventory for the Project area is incomplete and that Project operation could be causing lakeshore erosion, which could expose artifacts and necessitate archaeological monitoring and/or protection measures.

The State of Washington Office of Archaeology and Historic Preservation has stated that an archaeological survey should be conducted for any area proposed for disturbance and that a Cultural Resources Management Plan (the equivalent of the FERC-required Historic Properties Management Plan) be prepared to comply with 36 CFR 800. Both the Cowlitz Tribe and the Yakama Nation have asked that if operation or maintenance of the Project causes an exposure of human remains and/or artifacts that the services of a professional archaeologist be retained and that the tribes be consulted.

The planned cultural resources study will include field survey of the Packwood Lake draw down area and shoreline within the Project Boundary. The fieldwork will check the lakeshore for erosion of archaeological materials. The survey will use subsurface shovel probes as needed at the mouths of creeks located in the APE. The survey also will include previously unsurveyed, non-tunnel portions of the water conveyance system. The field survey will inventory archaeological remains, including information on their condition and Project effects.

3.0 NEXUS BETWEEN PROJECT OPERATIONS AND EFFECTS ON RESOURCES

This study will document archaeological sites and seek to identify traditional cultural properties within the APE, evaluate their National Register status, and assess Project-related impacts.

Following completion of the study, Energy Northwest proposes to draft for FERC a Programmatic Agreement (PA) among FERC, the Washington State Historic Preservation Officer, Gifford Pinchot National Forest, and Energy Northwest, with concurrence of the Cowlitz Indian Tribe and the Yakama Nation, which will provide for the implementation of a Historic Properties Management Plan. The Historic Properties Management Plan will provide for the avoidance or protection of specified archaeological sites and traditional cultural properties whenever feasible. The document will provide both general and site-specific treatment measures. General treatment measures include a process and protocol for any cultural resources monitoring, employee education, and management of the APE to reduce Project-related impacts. The Historic Properties Management Plan will also identify measures to be undertaken should impacts to National Register-eligible resources be unavoidable. The Historic Properties Management Plan will remain in effect throughout the term of the new license, and its implementation will satisfy FERC's Section 106 responsibilities.

4.0 STUDY AREA AND METHODS

The Project's cultural resources studies will focus on archaeological properties and traditional cultural properties, to inventory them, determine which are eligible for listing in the National Register of Historic Places, evaluate potential Project effects on them, and develop a Historic Properties Management Plan. The single building/structure exceeding 50 years old, the Packwood Lake Guard Cabin, has been inventoried and determined eligible for listing in the National Register, but is located outside the Project Boundary. Buildings and structures associated with the Project will be inventoried and evaluated in 2013/2014, when they attain 50 years of age. The following sections discuss the planned studies.

4.1 Study Area

A project's APE is defined as "the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historical resources if any such cultural resources exist" (36 CFR 800.16). For the Packwood Lake Hydroelectric Project, the APE consists of the land within the Project Boundary. At Packwood Lake, the Project Boundary is at elevation 2860 ft MSL, which encompasses three vertical feet above the usual summer water level. The Project Boundary also includes the water conveyance system that extends from

Packwood Lake to the town of Packwood. Energy Northwest believes that the Project does not affect cultural resources outside the Project Boundary.

4.2 Archaeological Inventory

The archaeological inventory will consist of archival research and field survey.

4.2.1 Archival Research

Archaeologist/Heritage Program Manager Richard McClure of the Gifford Pinchot National Forest has summarized survey and resources information for the APE and general vicinity. Additional archival research will be used as needed to obtain more detail. Archival research will focus on identifying previous studies and information to be used to understand the local environments, the culture history of the area, the additional types of resources that might be found, and their locations. To guide the field survey, as discussed below, researchers will use the background information to develop a map showing the archaeological sensitivity of places within the APE. The information also will be used to develop a prehistoric, ethnographic, and historic-period context within which the Project's archaeological and historical properties can be evaluated. The work will seek published and unpublished written, map, and photographic sources. The places to be contacted or visited include:

- Gifford Pinchot National Forest
- State Office of Archaeology and Historic Preservation
- Cowlitz Indian Tribe
- Yakama Nation
- Lewis County Historical Society
- University of Washington Suzzallo Library, Microforms and Special Collections

4.2.2 Field Survey

The archaeological contractor will apply to the Gifford Pinchot National Forest for a Special Use Permit to conduct the field survey. Before the survey, the contractor will prepare a sensitivity map showing the high, medium, and low probability areas for containing prehistoric and historic-period archaeological resources. Mapping will be based on information from the Gifford Pinchot National Forest (Hollenbeck 1985; McClure 2004b) predictive model criteria for high, moderate, and low probability environmental locations. The work will take into consideration the Gifford Pinchot National Forest's later experience, including that at the Packwood Lake Hydroelectric Project and similar locations. The map will set out, to the extent feasible, areas too disturbed to contain archaeological resources with integrity, areas that have received adequate previous survey, and the sensitivity of areas to be surveyed. This map will be provided to representatives of the Gifford Pinchot National Forest, the tribes, and Office of Archaeology and Historic Preservation for review and comment before the survey takes place.

The field survey will be intensive and will take into consideration the survey methods of the Gifford Pinchot National Forest. Pedestrian transects will be spaced at 5-meter intervals in areas of high site probability. Transects will be spaced at 20-meter intervals in areas of medium and

low probability. Field archaeologists will use shovels or trowels to clear 20-centimeter by 20-centimeter areas of duff at 20-meter intervals to examine the mineral soil for evidence of artifacts, features, soil discoloration, and so on. In areas of sediment accumulation, such as along streams, the archaeologists will excavate shovel probes of approximately 30-centimeter diameter up to a depth of about 50 centimeters to search for archaeological remains. Augers may be used to reach deeper alluvial areas.

When the fieldwork encounters cultural evidence, the archaeologists will excavate and screen (through 1/8-inch mesh) shovel test probes to sterile soil along radiating transects to define the horizontal boundaries and depth of the find area. The survey crew will record the methods and results of work with notes, maps, photographs, and drawings, as appropriate. They will use Gifford Pinchot National Forest forms to record isolated artifacts, sites, and features such as culturally-modified trees. Information on sites will include notes on apparent past and ongoing impacts, distinguishing those that appear related to the Project.

The Cowlitz Tribe and Yakama Nation have previously expressed opposition to archaeological excavations, and Project work will avoid such excavations to the extent feasible. This may mean stipulating the eligibility of archaeological sites for National Register listing, as discussed below. If archaeological test excavations or other additional work is needed, the methods will be established, depending on the nature of the resource and location to be researched, and will be submitted to the tribes and agencies for review in advance of the work.

The archaeologists will inform representatives of the Cowlitz Tribe and Yakama Nation about the schedule for the fieldwork, which is expected to take place in the late spring and during the fall lake drawdown of 2005. They will invite tribal representatives to participate in or observe the work.

4.2.3 Data Analysis

Materials collected in the field will be brought to the HRA laboratory and analyzed to generate useful data in addressing local and regional archaeological research questions. Description and analysis of recovered artifact material will be conducted as appropriate to the Project's research goals and consistent with approaches used for previous archaeological reports in the general area. Materials will be cleaned and sorted into technological and functional categories identical to those used in previous studies to facilitate effective comparison. Once information regarding provenience, function, and chronology has been entered into computer databases, the artifacts will be catalogued, photographed, and returned to the Gifford Pinchot National Forest for long-term storage.

4.3 Identification of Traditional Cultural Properties

The identification of potential TCPs involves tribal consultation. This work will take into consideration National Register Bulletin No. 38, *Guidelines for Evaluating and Documenting Traditional Cultural Properties* (Parker and King 1990). This Study Plan anticipates that the tribes will obtain any tribal information on traditional cultural properties that may be needed as part of consultation for the Project. The Yakama Nation obtained an oral history interview from

Mr. Johnson Meninick that includes the upper Cowlitz River area, and Project researchers will review that information. If tribal representatives believe that specific interviews are needed with tribal members, the tribes should provide a proposed scope of work and cost to Energy Northwest.

Indian tribes often are reluctant to disclose the location of potential TCPs due to their confidential and sometimes sacred nature. Disclosure of these locations can be a violation of their sacredness, and disclosure of resource gathering locations could lead to overuse and possible depletion of a particular resource. If the tribes do not wish to disclose the locations of any potential TCPs due to religious or other confidentiality concerns, Energy Northwest will instead work with the tribes to identify the general issues and concerns that the tribes may have regarding potential impacts of the Project upon resources known to the tribes and work to develop agreeable measures to alleviate these concerns. These measures will be addressed in the Project Historic Properties Management Plan.

4.4 National Register of Historic Places Evaluation

Section 106 of the National Historic Preservation Act does not require future management of cultural resources that are not eligible for the National Register and thus not considered to be historic properties. Ineligible sites can be removed from any future consideration in the Historic Properties Management Plan. National Register of Historic Places evaluations will be undertaken through consultation with the tribes, Gifford Pinchot National Forest, Office of Archaeology and Historic Preservation, and the Federal Energy Regulatory Commission. National Register eligibility forms will be completed by the Forest Service upon submittal of draft copies of the study products to the tribes and agencies for review and comment.

Whenever feasible, as discussed above, National Register assessments of Native American archaeological sites will be undertaken without ground-disturbing archaeological test excavation. The same is true for Euro-American archaeological sites that are primarily located outside the Project Boundary, with a small portion located within it. If non-intrusive evaluation is not feasible, and the tribes or agencies oppose test excavations, Energy Northwest will assume that unevaluated sites are eligible for the National Register and make only informal recommendations of eligibility. The Historic Properties Management Plan will address identified Project-related impacts to eligible or potentially eligible sites to develop appropriate protection, management, and mitigation measures. If identified impacts to prehistoric sites cannot be avoided or eliminated, formal National Register evaluation and archaeological test excavation of some sites may be necessary.

National Register evaluations will be site specific. Individual site significance can be defined in a number of ways. Sites must possess integrity, and the criteria for evaluating National Register eligibility are codified in 36 CFR 60.4:

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, fleeing, and association and:

- a) that are associated with events that have made a significant contribution to the broad patterns of our history; or
- b) that are associated with the lives of persons significant in our past; or
- c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- d) that have yielded, or may be likely to yield, information important in prehistory or history.

In addition to the criteria set out in 36 CFR 60.4, properties can have other cultural values that need to be considered. Amendments to the National Historic Preservation Act in 1992 specify that properties of traditional religious and cultural importance to an Indian tribe may be determined eligible for inclusion in the National Register because of their “association with cultural practices or beliefs of a living community that are (a) rooted in that community’s history, and (b) are important in maintaining the continuing cultural identity of the community.” Therefore, a property may also be significant if it has traditional or ethnographic significance because of its ties to the cultural past of Native Americans.

When formal evaluations are deemed appropriate, these criteria will be used to analyze the identified archaeological and historic-era properties identified within the Project APE in order to provide National Register evaluations to be presented to Office of Archaeology and Historic Preservation for concurrence.

If the tribes or Gifford Pinchot National Forest oppose formal evaluation of any identified locations, unevaluated resources will be identified as “potential” TCPs, and only informal recommendations of eligibility will be made. The Historic Properties Management Plan will address potential TCPs, and the informal recommendations will provide the basis for developing appropriate protection or other management measures for identified Project-related impacts. If identified impacts to potential TCPs cannot be avoided or eliminated, formal National Register evaluation may be necessary.

4.5 Analysis of Effects and Development of Historic Properties Management Plan

Following determination of eligibility for the resources, cultural resources specialists will analyze potential Project effects and will develop measures for the Historic Properties Management Plan. The effects analysis will consider such impacts as planned changes to the Project over the new license period, natural effects such as erosion, and human effects such as inadvertent recreation damage as well as unauthorized artifact collection and vandalism. Management measures will include some combination of avoiding impacts, protecting resources, monitoring their condition, and conducting mitigation as needed. The measures will provide for appointing and training an Energy Northwest Project Cultural Resources Coordinator, inventorying and evaluating the Project's buildings and structures when they attain 50 years of age, conducting inventory and evaluation of resources for future changes to the Project, and a decision-making process for future effects on historic properties. The measures will include an Unanticipated Discovery Plan for archaeological and human remains.

The Historic Properties Management Plan will summarize the culture history of the area and provide information on the inventory and evaluation of the resources. It will discuss Project impacts on historic properties and provide measures for managing them. The Historic Properties Management Plan will include an Unanticipated Discovery Plan for archaeological and human remains.

4.6 Study Products

Products of the inventory and evaluation work will include an archaeological sensitivity map, an application to the Gifford Pinchot National Forest for the archaeological fieldwork, and a technical report discussing the methods and results of the archival research and fieldwork, including a natural and cultural overview. Standard Office of Archaeology and Historic Preservation Washington Archaeological Site Inventory Forms will be used to record identified sites; Gifford Pinchot National Forest Isolate Record Forms will be used to document isolated artifacts and features. The final product will be a Historic Properties Management Plan that will include the results of both inventory and evaluation.

National Register eligibility forms will be completed by the Forest Service upon submittal of draft copies of the study products to the tribes and agencies for review and comment. Following production of final study products, copies will be provided to the tribes and agencies for their files.

4.7 Consistency with Generally Accepted Scientific Practice

The planned study methods discussed above are consistent with the methods followed in the Lewis River Hydroelectric Project and the Cowlitz River Hydroelectric Project relicensing and have been accepted by the participating Indian Tribes, agencies, and parties in those projects. These methods comply with the requirements of FERC and Section 106 of the National Historic Preservation Act.

4.8 Relationship to Other Studies

As discussed above, the results of the Cultural Resources Study Plan will be used to develop the Historic Properties Management Plan for the Project. Consultation with the Indian tribes may reveal particular plants and animals with cultural importance. Project studies of such resources could thus relate to the cultural resources studies.

5.0 CONSULTATION WITH AGENCIES, TRIBES AND OTHER STAKEHOLDERS

Energy Northwest initiated consultation with representatives of the Gifford Pinchot National Forest in December 2003; the Cowlitz Indian Tribe and Yakama Nation in March 2004; and the State Office of Archaeology and Historic Preservation in September 2004. Consultation meetings have taken place in the Project's Water Quality and Aquatic Resources Study Group, which includes representatives of the tribes and agencies. Energy Northwest has offered to meet with the tribal councils of the two tribes. Meetings with the stakeholder representatives will take place periodically in the Cultural Resources Study Group, beginning on February 11, 2005. This will

include one or more field visits to the Project and cultural resources, as needed. The stakeholder representatives will be invited to provide information for the study and technical reviews of draft Project cultural resources reports.

6.0 PROGRESS REPORTS, INFORMATION SHARING, AND TECHNICAL REVIEW

The following sections discuss progress reports, information sharing, and technical review. These activities pertain to the Project's cultural resources stakeholders: designated representatives of the Gifford Pinchot National Forest, Cowlitz Indian Tribe, Yakama Nation, State Office of Archaeology and Historic Preservation, and FERC.

6.1 Progress Reports

The technical reports, including the draft and final Study Plan, the draft and final Overview/Inventory Report, and the Historic Properties Management Plan will discuss the progress of the studies. In meetings with the tribal and agency representatives, Energy Northwest and its consultant will report on the methods, progress, and results of the cultural resources tasks.

6.2 Information Sharing

Information on cultural resources that could endanger the properties through vandalism or impede the use of a traditional religious site by practitioners is exempt from disclosure under Section 304 of the National Historic Preservation Act of 1966, as amended. The Gifford Pinchot National Forest maintains strict confidentiality of such information. Reports containing this information will be marked "confidential" and shared only with the stakeholders listed in the introduction to this section and with the FERC cultural resources specialist. Confidential information will be removed from documents that are shared with the public.

6.3 Technical Review

Energy Northwest will provide copies of the draft cultural resources reports to agency and tribal representatives for review. Review periods will be 30 days, after which Energy Northwest and its consultant will take review comments into consideration when making revisions and producing final reports.

7.0 SCHEDULE

Additional background research to prepare the cultural resources overview and the archaeological survey are scheduled for spring through early fall of 2005. During the same time, meetings and field visits will take place with representatives of the Cowlitz Indian Tribe and Yakama Nation to ask for their concerns about traditional cultural properties. Data analysis will take place during the mid-late fall of 2005 and result in recommendations about the National Register eligibility of identified resources. The methods and results of the background research, field survey, and discussions with tribal representatives will be presented in a technical report near the end of 2005. The Historic Properties Management Plan, which will discuss Project

effects on National Register-eligible resources and measures to avoid, reduce, or mitigate them, will be completed in mid-2006.

8.0 LEVEL OF EFFORT

Energy Northwest will follow 36 CFR 800.4 to make a reasonable and good faith effort to carry out appropriate identification efforts, including background research, meetings with tribal representatives, and field survey. Energy Northwest will take into account past planning, research, and studies; the likely nature and location of historic properties within the APE; and the nature and extent of potential Project effects on historic properties. This consideration will also include other applicable professional, State, tribal, and local laws, standards, and guidelines and will respect confidentiality concerns raised by the tribes. The level of effort will be appropriate to the size of the Project and its limited potential for effects on cultural resources. The estimated cost to complete the field study is approximately \$28,000. It is anticipated that the level of effort discussed in the study plan will be satisfactory and that following completion of the resulting report and its transmittal to the State Historic Preservation Officer, Energy Northwest will request the State Historic Preservation Officer's concurrence.

9.0 LITERATURE CITED

Burtchard, Greg C. 2003. US National Park Service. *Environment, Prehistory & Archaeology of Mount Rainier National Park, Washington*. Report prepared for the National Park Service, Seattle, Washington.

Cardwell, Rod. 1966. "A Tale About Wild Goat's Milk." *The Tacoma News Tribune and Sunday Ledger*. Tacoma, Washington. June 5, 1966.
<http://www.energy-northwest.com/gen/packwood/reference/cardwell.htm>

Chehalis Bee-Nugget [Chehalis, Washington]. 1909. Story of Packwood Lake Interesting One to Anglers. 10 December 1909.

Chehalis Chronicle. 1972. "Flames Level Resort at Packwood Lake." *Chehalis Chronicle*. Chehalis, Washington. October 24, 1972.
<http://www.energy-northwest.com/gen/packwood/reference/chehalischronical.htm>

Combs, Mrs. Sherman et al. 1954. History Committee Report. Packwood, Washington.
<http://www.energy-northwest.com/gen/packwood/reference/combs-sherman.htm>

Cunningham, Harry. 1910. Map of Packwood Lake dated December 10, 1910. Record Group 95, Records of the Forest Service. National Archives and Records Administration, Alaska Pacific Region, Seattle.

Delacy, W.W. 1861. "Journal of the Exploring Expedition for a Pass Through the Cascade Mountains South of Mount Rainier." *Pioneer and Democrat*, p. 3. Olympia, Washington. March 29, 1861.

- Energy Northwest. 2004. Packwood Lake Hydroelectric Project. FERC Project No. 2244. Pre-Application Document. Supplement No. 1. December 6, 2004.
- Fournier, Dale M. 1993. Cultural Resource Survey Report, Packwood Lake Resort EA. USDA Forest Service, Gifford Pinchot National Forest, Packwood Ranger District. Report on file, Heritage Program, Gifford Pinchot National Forest, Trout Lake, Washington. OAHF Log No. 012093-02.
- Freymond. 1992. *Big Sleep Peeled Cedar (13N10E-21/03)*. Washington Archaeological Site Inventory Form. On file, Heritage Program, Gifford Pinchot National Forest, Trout Lake, Washington.
- Hadja, Yvonne. 1990. Southwestern Coast Salish. In *Handbook of North American Indians*, Vol. 7 Northwest Coast, edited by Wayne Suttles, pp. 503-517. Smithsonian Institution, Washington, D.C.
- Hajda, Yvonne, David V. Ellis, John L. Fagan, Douglas C. Wilson, and Bonnie J. Mills. 1995. Ethnographic Sites of the Gifford Pinchot National Forest, Washington, Volume I. *Archaeological Research Investigations Northwest, Inc, Report No. 59*. Heritage Program, Gifford Pinchot National Forest, Vancouver, WA.
- Hollenbeck, Barbara J. 1985. Boundaries of Prediction in the Gifford Pinchot National Forest. In *Archaeological Inventory and Predictive Modeling in the Pacific Northwest*, Proceedings of a Conference Sponsored by the USDA-Forest Service, compiled and edited by Richard F. Darsie, James D. Keyser, and Stephen Hackenberger, pp. 71-75.
- Irwin, Judith W. 1994. "The Dispossessed." *The Cowlitz Indians in the Cowlitz Corridor. The Columbian*, 1994 Summer. Copyright 2002, Cowlitz Indian Tribe. Reprinted to <http://www.cowlitz.org/history/disposed.htm>
- Iyall, Mike. 2004. Personal communication to Laura Schinnell. August 23, 2004. <http://www.energy-northwest.com/gen/packwood/reference/iyall-mike.htm>
- Jacobs, Melville M. 1934. Northwest Sahaptin Texts, Part I. *Columbia University Contributions to Anthropology, 19(1)*. Columbia University Press, New York.
- Jensen, Chris. 1988. *Packwood Lake Island (13N10E-28/04)*. USDA Forest Service, Gifford Pinchot National Forest Isolate Site Form. On file, Heritage Program, Gifford Pinchot National Forest, Trout Lake, Washington.
- Jensen, Chris and Janet Liddle. 1987. *Cuyu'ik (45LE296)*. Washington Archaeological Site Inventory Form. On file, Heritage Program, Gifford Pinchot National Forest, Trout Lake, Washington.

- Jermann, Jerry V. and Roger D. Mason. 1976. A Cultural Resource Overview of the Gifford Pinchot National Forest, South Central Washington. *Reconnaissance Reports No. 7*, Office of Public Archaeology, University of Washington, Seattle.
- Kiona, Mary. 1965. Oral history interview conducted by Martha Hardy. Audiocassette copy of original reel-to-reel tape on file, Heritage Program, Gifford Pinchot National Forest.
- Lange, Larry. 1977. “Packwood: It’s worth the hike.” *The Columbian*. Vancouver, WA. September 11, 1977. <http://www.energy-northwest.com/gen/packwood/reference/lange.htm>
- Liddle, Janet L. 1990. Cultural Resource Survey Report, Pack Rat Salvage Sale. USDA Forest Service, Gifford Pinchot National Forest, Packwood Ranger District. Report on file, Heritage Program, Gifford Pinchot National Forest, Trout Lake, Washington. OAHP Log No. 1664-F-FS-GP-08.
- Liddle, Janet L. 1991. Cultural Resource Survey Report, Packwood Lake Well. USDA Forest Service, Gifford Pinchot National Forest, Packwood Ranger District. Report on file, Heritage Program, Gifford Pinchot National Forest, Trout Lake, Washington. OAHP Log No. 1815-F-FS-GP-01.
- Markos, Jeffrey A. 1987. Archaeological field notes, test excavations, site 45LE285, August 30, 1987. Original records on file, Heritage Program, Gifford Pinchot National Forest, Trout Lake, Washington.
- Markos, Jeffrey A. 1990. Packwood Lake: The Lithic Technology of a Multi-Resource Acquisition Site in Southwestern Washington. Pacific Northwest Region. Masters Thesis Published by Department of Anthropology, Washington State University, Pullman.
- McClure, Richard H. Jr. 1982. *Packwood Lake Guard Cabin (45LE238)*. National Register of Historic Places Inventory Nomination Form. On file at Washington State Office of Archaeology and Historic Preservation, Olympia, Washington
- McClure, Richard H. Jr. 1987a. Cultural Resource Survey Report, Packwood Lake Trail Bridge Replacement. USDA Forest Service, Gifford Pinchot National Forest, Packwood Ranger District. Report on file, Heritage Program, Gifford Pinchot National Forest, Trout Lake, Washington. OAHP Log. No. 950-06.
- McClure, Richard H. Jr. 1987b. *Significance Evaluation of Archaeological Site 45-LE-285, Packwood Lake, Lewis County, Washington*. USDA Forest Service, Gifford Pinchot National Forest, Packwood Ranger District. Report on file, Heritage Program, Gifford Pinchot National Forest, Trout Lake, Washington.
- McClure, Richard H. Jr. 1992. *An Archaeological Assessment of the Beech Creek Site (45LE415), Gifford Pinchot National Forest*. USDA Forest Service, Region Six. Gifford Pinchot National Forest, Vancouver, Washington.

- McClure, Richard H. Jr. 1998. Prehistoric Archaeology in the Southern Washington Cascades. In *Environment, Prehistory & Archaeology of Mount Rainier National Park*, Washington, by Greg C. Burtchard. Report prepared for the National Park Service, Seattle, Washington.
- McClure, Richard H. Jr. 2004a. Heritage Resource Survey Report, Packwood Lake Guard Cabin Rehabilitation. USDA Forest Service, Gifford Pinchot National Forest. Report on file, Heritage Program, Gifford Pinchot National Forest, Trout Lake, Washington. OAHF Log. No. 042804-03-USFS-GP.
- McClure, Richard H. Jr. 2004b. Packwood Lake Hydroelectric Project, FERC Project No. 2244, USDA Forest Service, Gifford Pinchot National Forest, Existing Information Analysis for Heritage Resources, September 7, 2004. To be available on USDA Forest Service web site at <http://www.fs.fed.us/gpnf>
- McKay, Kathy L. 1990. Valley Development Company: Brief History. Manuscript on file, Heritage Program, Gifford Pinchot National Forest, Trout Lake, Washington.
- Morton Journal*. 1974. "Lake Concessions to Open Again." *Morton Journal*. Morton, Washington. February 21, 1974.
<http://www.energy-northwest.com/gen/packwood/reference/mortonjournal.htm>
- Neeley, Agnes and Ralph Neeley.1968. Interview by Martha Hardy. 17 March. Transcript on file, Heritage Program, Gifford Pinchot National Forest, Trout Lake, Washington.
- Packwood Community Study Proceedings (PCSP). 1954. The Valley Development Company. In *Packwood on the March*, Part 4, History Committee Report. University of Washington Community Development Bureau, Seattle.
- Parker, Patricia L. and Thomas F. King. 1990. Guidelines for Evaluating and Documenting Traditional Cultural Properties. *National Park Service Bulletin* 38. National Park Service, Washington, D.C.
- Rice, David G. 1969. Archaeological Reconnaissance, South-central Cascades, Washington. *Washington Archaeological Society Occasional Paper* No. 2.
- Schuster, Helen H. 1998. Yakima and Neighboring Groups. In *Handbook of North American Indians*, Vol. 12 Plateau, pp. 327-351. Smithsonian Institution, Washington, D.C.
- Smith, Allan H.1964. Ethnographic Guide to the Archaeology of Mt. Rainier National Park. Final Report Submitted to National Park Service under Contract No. 14-10-0434-1422.
- Snyder, R.V. and L.C. Meyer.1971. *Gifford Pinchot National Forest Soil Resource Inventory*. USDA Forest Service, Pacific Northwest Region, Portland.

USDA Forest Service. 1936. Packwood Lake Recreational Unit Plan. In *Columbia National Forest Recreation Atlas*. Report on file, Heritage Program, Gifford Pinchot National Forest, Trout Lake, Washington.

USDA Forest Service. 1993. Cultural Resource Survey Report, Packwood Lake Resort EA. Report on file, Heritage Program, Gifford Pinchot National Forest, Trout Lake, Washington. OAHP Log No. 012093-02.

USDA Forest Service. 2004. “PIT-WA-03 Packwood Lake Guard Station Restoration.” <http://www.volunteer.gov/gov/uidetail.cfm?ID=3710>

Yoke, Jim. 1934. Upper Cowlitz Geographic Notes. In *Northwest Sahaptin Texts Part I*, by Melville Jacobs, pp. 228-237. Columbia University Press, New York.