

Historic Properties Management Plan

**Swift No. 1 Hydroelectric Project (FERC No. 2111),
Yale Hydroelectric Project (FERC No. 2071),
and
Merwin Hydroelectric Project (FERC No. 935)**

Clark, Cowlitz, and Skamania Counties, Washington

Prepared for

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PacifiCorp
Lewis River Hydroelectric Projects
FERC Project Nos. 935, 2071, 2111

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1.0 INTRODUCTION

PacifiCorp (formerly Pacific Power and Light) has owned and operated three hydroelectric power production facilities on the Lewis River in southwestern Washington since the late 1920s under the regulations of the Federal Energy Regulatory Commission (FERC). Figure 1 shows the locations of these projects, the farthest upstream of which is the Swift No. 1 Project (FERC No. 2111), located within Skamania County just south of Mount St. Helens. The Swift No. 2 Project (FERC No. 2213), which is owned by Public Utility District No. 1 of Cowlitz County (Cowlitz PUD), is not included in this management plan because Cowlitz PUD is preparing a separate management plan for its project. The Yale Project (FERC No. 2071) lies downstream, followed by the Merwin Hydroelectric Project (FERC No. 935). The latter two Projects are located along the boundary between Clark County on the south and Cowlitz County on the north.

FERC regulations require that a Historic Properties Management Plan (HPMP) be developed to mitigate and manage Project effects on cultural resources. The HPMP pertains only to resources that are eligible for the National Register of Historic Places (National Register). Such eligible resources are referred to in this report as historic properties, regardless of age and type. Applicable FERC staff guidelines appear in the *Hydroelectric Project Relicensing Handbook* (April 2001) and in *Guidelines for the Development of Historic Properties Management Plans for FERC Hydroelectric Projects* (May 2002).

PacifiCorp secured the services of Historical Research Associates, Inc. (HRA) for this HPMP, as well as some of the cultural resources studies. The utility consulted with the Washington Office of Archaeology and Historic Preservation (OAHP), the Cowlitz Indian Tribe, and the Yakama Nation about the archaeological, historical, and traditional cultural properties (TCP) inventory and evaluation for the Project. The various Project inventories described in Section 5.3 found multiple cultural resources, many of which are considered historic properties and will need to be managed. During Cultural Resource Workgroup meetings for relicensing these projects, representatives of the Yakama Nation and Cowlitz Indian Tribe expressed their views that all of the prehistoric archaeological sites hold cultural heritage value to them (National Register Criterion A). Therefore, it is recommended that all the prehistoric archaeological sites be treated as historic properties unless or until Project effects on them make it necessary to conduct a formal determination of eligibility for the resolution of adverse effects.

This HPMP is intended to assist PacifiCorp's personnel in preserving and treating historic properties in the Project area over the term of the new license. Following the process established in Section 106 of the National Historic Preservation Act (NHPA), the HPMP is designed to mitigate the potential adverse effects of the Projects on historic properties and to manage the resources to preserve their integrity. This HPMP is a component of PacifiCorp's preferred alternative for the Projects. If relicensing results in significant changes to the existing projects, measures presented in this document may need to be reexamined.

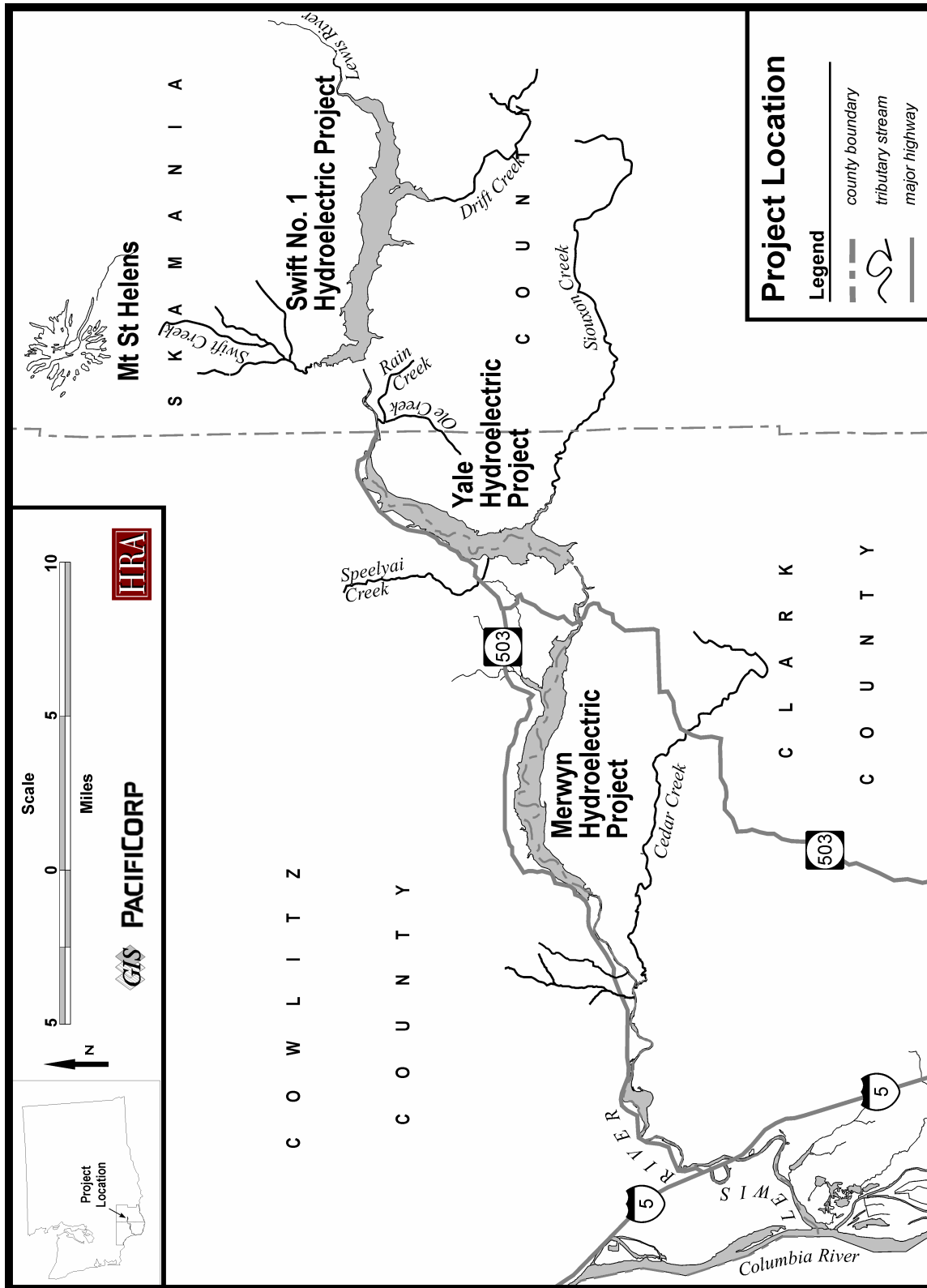


Figure 1. Location of Lewis River Hydroelectric Projects.

PacifiCorp values the cultural diversity and historical perspective represented in the Project's historic properties. This HPMP briefly reviews the research that the company undertook to identify and evaluate the historic properties, the effects of relicensing on these properties, and the measures that will be taken to manage them during the new license period. PacifiCorp is committed to exercising good stewardship over the Project's historic properties by following applicable federal, state, and local laws and regulations in consultation with oversight agencies and affected Indian tribes, consistent with PacifiCorp's responsibilities to their customers and to the natural and social resources it manages.

Section 2.0 of the HPMP discusses the federal and state laws and regulations pertaining to cultural resource management and identifies the agencies that oversee their implementation. A brief description of the Projects is provided in Section 3.0. Section 4 discussed the cultural context of the Project area, while Sections 5.0 and 6.0 provide background information on cultural resource studies that have been conducted for the Project, discussing the resources and their National Register eligibility. Impacts on these resources are described in Section 7.0, while proposed management measures and their implementation guidelines are provided in Sections 8.0 and 9.0. The list of references cited appears in Section 10.0.

Four appendixes include the description of a study to determine erosion/deposition at archaeological sites in reservoir drawdown zones (Appendix A), the protocol for the unanticipated discovery of archaeological resources (Appendix B), and the protocol for the treatment of human remains (Appendix C), and reference sources for appropriate techniques for treating historic structures (Appendix D).

2.0 CULTURAL RESOURCE LAWS AND REGULATIONS

The HPMP for the Lewis River Hydroelectric Projects is intended to ensure the management of National Register-listed or eligible archaeological sites, historical buildings and structures, and TCPs located within the Project's Areas of Potential Effects (APE). The plan provides for PacifiCorp's compliance with relevant federal and state laws and regulations, and supports the objectives of the Cowlitz Indian Tribe and Yakama Nation to protect archaeological sites. The HPMP also recognizes the tribes' traditional cultural importance and use of fish, plant, and wildlife resources in the Project area. Management measures for these resources are discussed in the Project's Draft Environmental Assessment (PacifiCorp and Cowlitz PUD *in press*). While the focus of the HPMP is on managing historic properties, most of its management strategies are applied broadly within the APEs and thus will benefit other cultural resources as well.

The Lewis River Hydroelectric Project's HPMP has been prepared within the context of both federal and state laws and regulations. Federal laws affect the Projects because they operate under licenses granted by FERC, and state laws apply because the Projects are located within Washington State. These laws often have very similar requirements, and both federal and state agencies and officials have roles in the oversight of the HPMP.

2.1 FEDERAL LAWS AND REGULATIONS

Federal Laws provide protection to cultural resources for projects that are subject to federal jurisdiction. Specific statutes relevant to the Lewis River Hydroelectric Project's HPMP include the following:

The National Historic Preservation Act of 1966 (16 U.S.C. 470 et seq.) (as amended)

This law establishes the statutory responsibilities of federal agencies to manage the cultural resources under their jurisdiction and authorizes the Secretary of the Interior to maintain a National Register of Historic Places. It also provides for the designation of State Historic Preservation Officers to facilitate the implementation of federal cultural resource policy at the state level. Section 106 of the Act requires federal agencies to take into account the effect of their proposed undertakings on properties listed in, or eligible for listing in, the National Register of Historic Places.

36 CFR Part 800, "The Protection of Historic and Cultural Properties"

These regulations implement Section 106 of the National Historic Preservation Act of 1966, as amended, by stating the requirements for inventorying cultural resources, determining which are eligible for listing in the National Register of Historic Places and are thus considered to be historic properties, evaluating project effects on the properties, and resolving adverse effects. These steps are implemented in consultation with oversight agencies, Indian tribes, and interested parties. The regulations were revised in June 1999.

The American Indian Religious Freedom Act of 1978 (42 U.S.C. 1996)

This law makes it a policy of the federal government to protect and preserve for American Indians, Eskimos, Aleuts, and Native Hawaiians their inherent right to exercise their traditional religions. To this end, it specifically allows them to possess and use sacred objects, and to access traditional sites for religious purposes.

18 CFR 4.51(f)(4), "Report on Historical and Archaeological Resources"

These are the regulations implementing FERC's responsibilities under the Federal Power Act regarding compliance with federal cultural resource laws and regulations in the agency's licensing of existing hydroelectric projects.

*Guidelines for the Development of Historic Properties Management Plans
For FERC Hydroelectric Projects*

These guidelines were prepared in conjunction with the Advisory Council on Historic Preservation to assist hydropower project licensees in the development of HPMP, in order to consider and manage the effects of the project on historical properties. The FERC typically develops a Programmatic Agreement (PA) with the State Historic Preservation Office to implement the HPMP. The Project applicant and Indian Tribes often are invited to concur in the PA.

Archaeological Resources Protection Act (ARPA)

ARPA protects archaeological resources on federal land by prohibiting the removal of archaeological artifacts without a permit from the land managing agency. It is applicable to Gifford Pinchot National Forest land at Swift Reservoir.

*Native American Graves Protection and Repatriation Act of 1990
(NAGPRA)*

NAGPRA establishes regulations regarding the treatment of any Native American graves, human remains, and/or funerary objects, sacred objects, or objects of cultural patrimony on federal, tribal and trust lands. Knowingly disturbing or removing gravesite remains or these objects is a felony under federal law and can result in criminal prosecution. This legislation applies to Gifford Pinchot National Forest land at Swift Reservoir.

2.2 STATE LAWS AND REGULATIONS

Washington State laws provide protection to archaeological sites on both public and private lands. Specific statutes relevant to the Lewis River Hydroelectric Projects' HPMP include the following:

The Indian Graves and Records Act (RCW 27.44)

This law recognizes the fundamental and intrinsic value of Native American burial grounds and historic graves as a part of the cultural heritage of the people of Washington. It makes the disturbance of Native American burial grounds and/or historic graves a criminal act, identifies criminal penalties, and provides for the possibility of civil action -- apart from any criminal prosecution -- by an Indian Tribe or an enrolled member of one.

The Archaeological Sites and Resources Act (RCW 27.53)

This law recognizes that the public has an interest in the conservation, preservation, and protection of the state's archaeological resources. It stipulates that a permit is required to dig into or otherwise disturb (including the removal of artifacts exposed on the surface of) an archaeological site and describes the circumstances under which such a permit may be issued. It makes the disturbance of an archaeological site a criminal act and identifies criminal penalties.

The Public Lands Act (RCW 79.01)

This law addresses a range of activities on the public lands of Washington. It states that it is a criminal act to take or remove any valuable materials from public lands. The Office of Archaeology and Historic Preservation has determined that archaeological objects are valuable materials under the provisions of this act and that anyone removing such objects from public lands could be charged.

2.3 AGENCIES AND INDIAN TRIBES

The federal agency with primary oversight for the Lewis River Hydroelectric Projects is the FERC. This agency maintains its own cultural resources staff and can consult with the Advisory Council on Historic Preservation on matters affecting historic properties. The concerned Indian tribes are the Cowlitz Indian Tribe and the Yakama Nation. The Gifford Pinchot National Forest manages a small amount of land at Drift Creek and the Pine Creek Ranger Station within the boundary of Swift No.1 Project.

The state agency with primary oversight for the Lewis River Hydroelectric Projects' cultural resources is the Office of Archaeology and Historic Preservation (OAHP), which includes the Washington State Historic Preservation Officer (SHPO). The OAHP also includes a State Archaeologist and an Assistant State Archaeologist who provide review and technical expertise.

Consulting parties for this Historic Properties Management Plan include the FERC, the OAHP, the Cowlitz Indian Tribe, the Yakama Nation, and the Gifford Pinchot National Forest.

3.0 PROJECT DESCRIPTION

The Lewis River, a southwesterly-flowing tributary of the Columbia River, is 110 miles long and has a drainage area of approximately 1,050 square miles. The drainage basin is in an area of heavy rainfall, in excess of 80 inches per year, and also is fed by the glaciers of Mount St. Helens and Mount Adams (Miller 1930:1). The Swift No. 1 Project is located farthest upstream (River Mile 47), followed by the Yale (RM 34) and Merwin

(RM 19.4) (originally known as the Ariel Project)¹ projects. Cowlitz PUD's Swift No. 2 Project is located between the Swift No. 1 and Yale projects at RM 44. The Swift No. 1 and No. 2 projects straddle the boundary between Skamania County on the east and Cowlitz County on the west. The Merwin and Yale projects span the boundary between Clark County on the south and Cowlitz County on the north.

PacifiCorp's interests in the Lewis River basin date to 1929, when it began operating facilities associated with the Merwin Project (FERC No. 935), Yale Project (FERC No. 2071) and Swift No. 1 Project (FERC No. 2111). Each project operates under a separate FERC license. The licenses for Merwin and Swift No.1 expire on May 1, 2006. The Yale Project operates under an annual license pending concurrent environmental evaluation of the new license applications being prepared for Merwin, Swift No. 1 and Swift No. 2.

4.0 CULTURAL SETTING OF THE LEWIS RIVER HYDROELECTRIC PROJECTS AREA

The cultural setting of the Lewis River Hydroelectric Project area includes the various human groups who have inhabited this region, and the studies of them. The following sections consider the Native American and Euroamerican histories of the Project area and archaeological research pertaining to the Project area.

4.1 NATIVE AMERICAN HISTORY

4.1.1 Distribution of Ethnic Groups

Because of differences between Euroamerican and Indian land tenure practices, it is often difficult to accurately describe the boundaries of areas inhabited by any one Indian group during the early historic period. People moved frequently during the spring, summer, and fall, and they inhabited a wide range of environmental zones. Marriages created relationships between different villages, and these relationships often crossed linguistic boundaries. Linguistic differences, however, did little to hinder visits between relatives, and trips to visit relatives in other areas were common.

At the time of first direct European contact in the 1790s, three main ethnic groups inhabited the Lewis River drainage. The villages near the mouth of the Lewis River just across the Columbia from present-day St. Helens, Oregon, were occupied by the Cathlapootles who spoke Upper Chinookan. Other speakers of Upper Chinookan could be found in villages ranging from Grays Bay in the Columbia Estuary to Celilo Falls in the middle reaches of the Columbia River at the junction of the dry, east-side ecozone and the wet, west-side ecozone (Silverstein 1990). The Upper Chinookan people had more direct contact with early European traders than most other groups in the Pacific

¹ Ariel Dam was renamed Merwin Dam in 1948, after Northwestern Electric Co. engineer and vice president L. T. Merwin. In accordance with National Register guidelines, the dam is referenced by its historic name.

Northwest (Ruby and Brown 1976), and they appear to have suffered more heavily from epidemic disease. By the 1830s, malaria, smallpox, and other European diseases completely wiped out the Cathlapootles (Boyd 1975).

Two other ethnic groups that occupied the upper Lewis River drainage, the Taidnapam and the Klickitat, spoke closely related dialects of the same language, which was also spoken by the Yakama, Wayampam, Sk'in, Umatilla, and other peoples living east of the Cascades. The Taidnapam or Upper Cowlitz, while speaking a language closely related to the languages spoken east of the Cascades, occupied a core area in the upper reaches of the Cowlitz and Lewis River drainages on the west side of the Cascades. Although other speakers of this same language (e.g., the Yakama) were known to visit locations west of the Cascades for short periods of time, only the Taidnapam and the Mishalpam on the upper reaches of the Nisqually River were thought to have been truly resident west of the Cascades. They were well integrated into the social fabric of western Washington, and shared many cultural traits with the Lower Cowlitz, who spoke a different language and occupied the lower reaches of the Cowlitz River (Kinkade et al. 1998; Schuster 1998; PacifiCorp 1999).

During the period after the establishment of Ft. Vancouver in the 1820s until about the mid-1850s, many early historic accounts mention the presence of the Klickitat along the Lewis River. The Klickitat core area has traditionally been identified as stretching from about Mount Adams to the mouth of the White Salmon and Klickitat Rivers along the Columbia (Schuster 1998). While many of the early historic period occupants of the Lewis River drainage were likely to have been Klickitats, distinguishing them from the (potentially) resident Taidnapam in early historic period records is complicated by the fact that early Euroamerican observers tended to use generic terms for speakers of this Taidnapam/Klickitat/Yakama language. Just about any speaker of this language east of the Cascades was likely to be called a "Walla Walla" (Boyd 1996), while just about any Sahaptin-speaker west of the Cascades was usually referred to as a "Klickitat" (Ray 1966).

4.1.2 Settlement Pattern

Taidnapam or Klickitat settlement patterns in the Lewis River drainage are not well known, especially in comparison to the documentation that exists for the Cowlitz River drainage (see McClure 1992 for a good summary). A map showing the "U.S. Military Road from Columbia Barracks to Fort Steilacoom" dating to the mid-1850s shows three "Indian Villages" along the lower Lewis River:

1. at the mouth of the Lewis River;
2. along the Lewis River near present-day Paradise Point State Park; and
3. on the southern side of the Lewis River in the vicinity of Finn Hall (Derby and Gibbs 1855).

There are no “Indian Villages” listed as being located above Finn Hall on this 1855 map, and the ethnic identity of the people occupying these three villages is not recorded on the map. It is likely that the village at the mouth of the river is the same one documented by Lewis and Clark as Cathlapootle village, which was occupied by Chinookan speakers. The other lower Lewis River villages may have also been occupied by Chinookan speakers.

Most of the areas known to have been used by Indians in the Lewis River drainage are linked to the “Klickitat Trail” that ran from Ft. Vancouver to the Yakama area. Captain George B. McClellan’s expedition went up the Klickitat Trail in 1853, documenting the route of the trail and Indian use of the Lewis River drainage. Interpretation of the route maps is difficult given McClellan’s incomplete understanding of local topography. Leading out of Ft. Vancouver, the trail went northward, crossing the Cedar River and Chelatchie Prairie on its way to the North Fork of the Lewis River. After crossing onto the north side of the North Fork somewhere in the eastern third of Lake Merwin, the trail ran north up Speelyai Creek, then it turned east and rejoined the Lewis River somewhere near the western end of present-day Yale Lake. It continued along the north side of the river until it crossed back to the south somewhere between Northwoods and Curly Creek Falls. After this crossing, the trail continued east and into the present-day Indian Heaven Wilderness.

During their trip up the Klickitat Trail, McClellan’s party found the travel difficult, particularly through heavily wooded sections. Travel became somewhat easier, particularly through fern-covered prairies like Chelatchie Prairie. Indian place names for locations along the Klickitat Trail generally coincide with these fern-covered prairies. Chelatchie Prairie takes its name from the Klickitat or Yakama word *ch’alacha*, (lit. “of bracken fern”) (Hajda et al. 1995). McClellan’s party noted an open area along Speelyai Creek containing both grass and ferns. This location has the Indian place name *spily?y* (lit. “coyote”) (PacifiCorp 1999). Further up the trail, Lt. Duncan (1855), a member of the expedition, mentions a “place called by the Indians Lakas” that would have been somewhere between the present-day towns of Yale and Cougar. Duncan’s “Lakas” is probably an Anglized version of *ilik-ash* (lit. “place of kinnikinnick”). “Lakas” probably coincides with the zone of xeric-adapted vegetation that grows on the Yale Lava Flow, which would provide the only habitat for kinnikinnick in the area.

Moving upstream, McClellan’s party crossed the Swift River, which they gave the name “Noompt-nah-mie” (Minter 1855) or “Noomptnamie” (Stevens 1861), which probably corresponds to the place name “Loompt-nee-mee” recorded by McWhorter (n.d.), a Klickitat word meaning “belongs to the blue.” Hajda et al. (1995:46) suggest that the name “refers to a ‘blue-looking’ mountain, perhaps Marble Mountain,” which is about 6.8 km (4.2 miles) to the northeast of the mouth of the Swift River. Minter reported that the party “crossed the Noompt-nah-mie near its mouth, and encamped at the crossing; no grass; crossing difficult in low water; impossible in high water...” The next day, the party made camp at a location called “Wininepat” (Minter 1855). The exact location of Wininepat is not clear, but it appears to have been somewhere in the vicinity of Swift Forest Park. No translation for this place name is currently available. Soon after leaving

Wininepat, the trail crossed the Lewis River and continued to the east toward the southwest and McClellan Meadows.

An account of a Mt. St. Helens climbing expedition during the last week of September 1860 discusses a few Indian families encountered along the Lewis River. The expedition met the Indians along a tributary creek (called “Sum-na-ma”) that appears to be near the confluence of the Muddy River and the Lewis River (Loo-Wit Lat-Kla 1991[1861]: 15-17; Mack 2002). The Indians had been fishing for salmon and were proceeding to collect berries. Two Indians pressed into service as guides spoke of the powerful spirit at Mt. St. Helens that caused the volcanic activity, which had destroyed their traditional hunting ground, and the spirit questing that took place on the mountain. They also mentioned other Indian names – Spil-ye-i Prairie (Loo-Wit Lat-Kla 1991[1861]: 21) and She-quash-a-quash (“rocky place”) as the name of the lava bed along Lewis River (Mack 2002).

Aside from this information about use of the Klickitat Trail, little specific information is known about the duration of residence at these sites or the number of occupants. It is well known that Taidnapam and Klickitat people typically occupied winter villages from late fall to mid-spring and then dispersed to other areas during the rest of the year. Taidnapam winter villages likely consisted of relatively small concentrations of houses. For the Cowlitz River drainage to the north (which serves as a good analogue for the Lewis River drainage), Ellis et al. (1991) estimate that local village populations ranged from about 20 to 50 people. Village locations were relatively stable features and were regularly reoccupied. Most winter villages were probably located relatively close to the Lewis River channel, but not directly alongside because of concerns about flooding. When dispersed in spring, summer, and fall, the people occupied a number of still smaller and less formalized camps that supported various economic activities. Seasonal camps were much more wide-ranging and would have included higher elevation areas.

4.1.3 Subsistence

Subsistence practices for the groups living along the Lewis River have been summarized in PacifiCorp (1999). Although it is the general impression of anthropologists that the Lewis River was not used heavily for fishing (Ray 1966), it is likely that fishing was one of the primary subsistence activities of people living along the Lewis River. Deer and elk were the principal terrestrial prey species, but some hunting of mountain goats also occurred in upland areas. Important plant species would have included camas, salmonberry, huckleberry, blackberry, hazelnuts, and fern sprouts (Hajda 1990).

4.1.4 Interactions with Euroamericans

The first direct interactions between occupants of the Lewis River drainage and Euroamericans occurred early in the 1800s. Lewis and Clark’s party passed the mouth of the Lewis River in November 1805, and they documented a “Quathlapotle” village with 14 houses near the river’s mouth (Moulton 1990). During the 1810s, most of the interaction between Native American and Euroamerican groups occurred near the mouth of the Columbia River in territory claimed by the Lower Chinook. In 1824, the Hudson’s Bay Company (HBC) established Ft. Vancouver along the Columbia River just across

from the mouth of the Willamette River. This inland site was selected, in part, to eliminate Lower Chinookan middlemen in the fur trade, increasing the HBC's profit margin (Dodds 1986). The establishment of Ft. Vancouver attracted many Native Americans to the Portland Basin area, including "Klickitat" groups from the southern Washington Cascades and eastern Washington. Many of these groups used the "Klickitat Trail" which led from Ft. Vancouver to the Lewis River Drainage, and thence to Klickitat territory east of the Cascade crest. Use of this trail probably declined dramatically after the HBC abandoned Ft. Vancouver in 1846 in favor of a new base of operations on Vancouver Island (PacifiCorp 1999).

During the 1830s and 1840s, the intensity of Euroamerican use of southwestern Washington increased, bringing increased tensions between native groups and settlers. With the passage of the Donation Land Act of 1850, the pace of Euroamerican settlement increased even more, and the new government soon saw a need to address the question of Indian lands. Territorial Governor Isaac Stevens was appointed in 1853 and began treaty negotiations with tribes soon thereafter. The Cowlitz and other tribes from west of the Cascades met with Governor Stevens at the Chehalis River Treaty Council in 1855. This meeting ended without agreement because the Cowlitz and neighboring groups refused to relocate to Quinault territory.

The failure of Stevens to come to a treaty agreement with the Cowlitz people had a profound effect on their historic experience. Shortly after the Chehalis River Treaty Council, many Cowlitz people were grouped together with the Chehalis Indians. Some came to take up residence on the Chehalis Indian Reservation, but never accepted it as their true home. Other Cowlitz people – particularly Taidnapam – called on their relations east of the mountains and moved to the Yakama Indian Reservation. Finally, a significant number of Cowlitz people rejected both reservations and remained either in the Cowlitz Valley or elsewhere in western Washington. Despite this dispersion, the Cowlitz community worked to maintain its cohesion. A formal tribal gathering ("the Meeting") was established in 1915 and has continued ever since. Attaining federal recognition and the clarification of its aboriginal rights was a principal focus of the tribe during the 20th century (Fitzpatrick 1986). This effort began in 1916 and appears to be in its final stages at this writing. A federally recognized Cowlitz Indian Tribe should be a feature of western Washington in the near future.

Governor Stevens's negotiations with the Yakama were conducted in May and June of 1855 at Ft. Walla Walla, resulting in the approval of a treaty that called for the creation of a reservation including over one million acres in central Washington. The treaty also called for the federal government to supply the tribes living on the reservation with cash payments, food, tools, physicians, and educational services. With Stevens' approval, Euroamerican settlement of eastern Washington began soon after the completion of treaty negotiations, but before the treaty had been formally ratified. This precipitated the "Yakima War" of 1855 and 1856, when members of the Yakama, Klickitat, and other groups banded together under Kamiakin to oppose government forces. The Indian alliance grew to include Salish-speaking groups in the southern part of Puget Sound, and

Euroamerican settlers quickly became fearful of an expansion of the war to west of the Cascades.

These fears were amplified when a group of hostile Indians was reported to be coming west along the Klickitat Trail after having attacked the settlement at the Cascades along the Columbia River in 1856. “Indian Zack,” who has been identified as either a Cowlitz or Taidnapam hunting in the Chelatchie Prairie area, rode down the Klickitat Trail and along the Lewis River to warn settlers about the approaching group. This warning allowed the settlers to escape to the Oregon side of the Columbia River (Jermann and Mason 1976). Later that year, Taidnapam and Klickitats living along the Lewis River were “requested” to stay at Ft. Vancouver for their own protection. A tragic chain of events during this period led to the death of Umtux, a Taidnapam leader living on the Upper Cowlitz River. He was shot near Battle Ground, Washington, in Clark County, while trying to tell members of his group that they should not engage government forces in battle (Kirk and Alexander 1990; PacifiCorp 1999). The Yakima War continued sporadically until 1858, when it was brought to a close by Colonel George Wright’s scorched earth campaign that featured the summary execution of multiple Native American leaders (Beckham 1998).

Following this period of warfare between the Yakama and their allies and the federal government, the Yakama dealt with a series of laws that eroded their land base, especially the Dawes Severalty Act of 1887. During the 1930s, the Yakama established a tribal council, but they rejected the provisions of the Indian Reorganization Act of 1934, fearing its potential impact on tribal sovereignty. Other important political issues facing the tribe have included maintaining fishing rights to traditional locations throughout the Northwest and negotiations with the government about compensation for damage to those fishing rights caused by construction of dams along the Columbia and other rivers (Schuster 1998).

4.2 EUROAMERICAN HISTORY

Early events in Euroamerican history in the Project area have been described above. The first Euroamericans in the area were early nineteenth-century explorers, fur traders, and their associates. The discovery of gold along the Lewis River banks and tributaries led to an outbreak of “gold fever” in the early 1850s. During this period, employees and associates of the Hudson’s Bay Company reported finding gold along the Lewis River tributaries, and word spread quickly. Indeed, early prospectors had good luck with mining the riverbeds just below the surface of the Lewis River, and stories of their good fortune encouraged others to follow suit. Arriving without adequate tools, munitions, and shelter, the surge of new prospectors obtained implements from area farmers, who had already abandoned hopes of discovering gold along the river. These prospectors were rarely successful, but were not discouraged by the lack of findings – and nor were their followers.

During the Indian Wars of 1855-56, volunteers who were stationed on the Cha-la-Cha Prairie (Chelatchie Prairie) (Loo-Wit Lat-Kla² 1991[1861]: 3-16), attempted mining in the North Fork of the Lewis River, and its tributaries. Results from these efforts varied from \$10 worth of gold nuggets to a negligible amount of gold dust that could fill a “common match box.” Despite generally meager returns, those with “gold fever” continued to mine the riverbeds with unabashed optimism, often citing poor environmental conditions as the reason for their bad luck (1991[1861]:3-5). Loo-Wit Lat-Kla describes a failed expedition in 1860, when a party of six to eight men headed to the Lewis River to investigate “new mines” (1991[1861]:7). The party camped at Cha-la-Cha, met a miner who advertised his findings, and hired him as their “guide.” Despite his alleged experience and luck at the mining site, the outing was “one of the most laborious, vexatious and unprofitable trips conceivable” (1991[1861]:10). Continued expeditions yielded similar results. Although mining was a draw during the second half of the nineteenth century, it did not yield the returns necessary for sustained activity along the Lewis River.

4.2.1 Settlement Patterns

The establishment of Ft. Vancouver on the Columbia River in 1824 stimulated development in Clark County, but much of the early settlement was restricted to the margins of the river. The real stimuli to Euroamerican settlement were the shift from British to American jurisdiction below the 49th parallel in 1846 and the passage of the Donation Land Act in 1850. The Donation Land act offered 320 acres to every man arriving in Oregon Territory before December of 1850. The alluring coastal valleys soon swelled with newcomers taking advantage of the government’s offer. The majority of earlier pioneers had staked their claims south of the Columbia, especially along the Willamette River Valley. But in 1850 what had been a trickle of westward immigrants swelled to an estimated 55,000, straining the already crowded valley to its limit and forcing homesteaders to look elsewhere for land. The population increase created a need for more manageable administrative jurisdictions, and in 1853, lawmakers created Washington Territory out of the northern half of Oregon Territory (Dodds 1986:94).

While Euroamerican settlement rose dramatically throughout the Oregon and Washington territories during the 1850s and 60s, the Lewis River Valley, especially the upper valley from Ariel to Speelyai Creek, did not initially attract large numbers of people. The rough topography and fast flowing river made settlement difficult in the Project area. The lower Lewis River drainage, around present day Woodland, was first settled under the Donation Land Act, with penetration further up the river occurring as transportation networks improved and logging activity cleared new land.

Retired Hudson’s Bay Company employee A. Le Lewes’ land claim near the present town of Woodland was the first Euroamerican settlement on the Lewis River. Lewes, who gave his name to the Lewis River, took up residence on his claim in 1846. His

² Pseudonym. True authorship of the manuscript is unknown, but is thought to be James Burk of New York State, who was a prominent resident of Cowlitz County and one of the first climbers of Mount St. Helens (1860).

brother Frederick joined him in 1849 and together they opened a small general store. The Bozarth and Strong families followed in 1850, staking their claims nearby, and raising orchard fruits and vegetables. Starting in 1854, the 50-foot sidewheel steamboat, *The Fashion*, began to ply the river as far up as A. Le Lewes' place, linking the area to the larger communities along the Columbia River and Portland, and bringing increased settlement to the lower Lewis River valley (Gardner 1959). Christopher Columbus Bozarth gave Woodland its name in 1881, after constructing a store and post office and naming it for the abundant surrounding Douglas fir. Woodland was not incorporated until 1906, but in the half century between Le Lewes' first claim and the town's incorporation, a school, post office, blacksmith shop, saloon, and several stores as well as the connection to greater transportation networks made Woodland the center of the Lewis River community (Gardner 1963).

Settlement in the lower Lewis River Valley increased throughout the 1880s. Woodland had some competition from the small town of Kerns, which was founded in 1882 by Adolphus Lewis, Jr., a nephew of C.C. Bozarth. Kerns was located just one mile upstream from Woodland and also offered Cowlitz County residents such amenities as stores, a blacksmith shop, a post office, and a shoe shop. Serial patent files show that many residents of the middle Lewis River Valley listed Kerns as their address before moving further upriver. Like Woodland, Kerns served as a launching point for prospective settlers (Serial Patent File Nos. 7485, 89040, 260720).

The middle and upper Lewis River drainage, from present-day Ariel to Speelyai Creek, was settled later than the lower valley. Filled with imposing timber, fast flowing rivers and streams, choking underbrush, and sandy, mostly third-rate soil, the upper valley was rugged. With the exception of some of the fern-covered "prairies" and flat valley-bottom lands that could easily be converted to agricultural production, the middle and upper Lewis River drainage offered few attractions to early settlers. An early account of the area comes from Captain George B. McClellan's 1853 railway survey (PacifiCorp 1999). McClellan's party worked its way along the Klickitat Trail north from Ft. Vancouver, crossing Chelatchie Prairie and Green Mountain before descending to the Lewis River and crossing somewhere near the mouth of Speelyai Creek. McClellan describes the rough terrain encountered on his expedition:

From Vancouver to the Cathlapoot'l [Lewis River] there is but little to invite settlement. With the exception of a few small tracts, the country is generally covered with dense forests and thick undergrowth; the trees often attaining an immense size . . . The valley of the Cathlapoot'l above, and at our crossing is utterly worthless for any purpose (PacifiCorp 1999:Appendix 5.3-1, pp.6-7).

At the time of the expedition, no Euroamerican settlements were recorded in the upper Lewis River drainage – the only people observed in the area were Native Americans (Minter 1855).

This started to change in the 1880s and the 1890s, when the timber industry began to make headway up the valley, creating treeless “prairies” where none had existed previously. By 1890, a logging camp was established in the Speelyai Prairie area, clearing land that was later taken up by “stump farmers” following the economic depression of the 1890s (Jermann and Mason 1976; PacifiCorp 1999). Surveyors for the General Land Office documented small farmsteads throughout the Project area by the early 1890s. By the end of the 19th century, steamboat traffic on the river was a regular and integral part of life in the valley, moving farmers and loggers, their goods, mail, and produce as far up as Speelyai Creek (PacifiCorp 1999).

Settlers took advantage of the Homestead Act of 1862 to move farther up the Lewis River Valley. The Homestead Act offered pioneers 160 acres at no charge after five consecutive years of residency, provided they agreed to settle and make improvements to their chosen plot. Homesteaders also had the option of purchasing the land for \$1.25 per acre after only six months residence (Lewarch et al. 1999). The historic-period archaeological sites in the Project area are consistent with this time period and related to land claims made under the Homestead Act.

Serial patent files and GLO maps depict Lewis River Valley homesteaders as light agriculturists, often occupying small groups of farms near the river. Most properties were modest, with farmers growing and selling a combination of orchard crops and vegetables, raising sheep and cattle, and hunting and tracking (Serial Patent Files; GLO Maps for T6N R3E and T6N R 2E). Some settlers, such as the Strait family, served as guides, escorting tourists up the Lewis River to Mount Saint Helens and Spirit Lake (Gardner 1955).

The Cedar Creek Gristmill was built in 1876 about two miles to the southwest of the present Merwin Dam (Kirk and Alexander 1990), suggesting that the harvest of grains was occurring near the Project area by this time. Margaret Hepola, who was born near the town of Ariel in 1917, prepared a history of the valley, describing the area the way she remembered it as a child before construction of the dam. Her account is consistent with serial patent information, with settlement made up of farms that raised seed potatoes for sale along with corn, hay, garden produce, and fruit trees. Small herds of milk cows grazed on meadows now inundated by the dam. A school was located at Marble Creek, and about eight miles upriver from the site of Merwin Dam was a cemetery called “Dart of Ariel” (also referred to as the “Old Lone Pine Cemetery”). Its graves included two Indian women buried in the early 1900s (Hepola 2000) and at least 25 early Lewis River settlers (Cowlitz County Washington, Cemetery Records 1989). The graves were later moved to the Lone Pine Cemetery to avoid flooding after construction of the Merwin Dam.

4.2.2 Logging

As mentioned above, logging was a stimulus to early settlement, but logging also was an industry and economic force in the valley, where river transportation played an important role in the industry’s growth. Early loggers used oxen and greased skids to move logs

from hillsides to log chutes. Trimmed logs were sent hurtling down the slippery chutes, traveling up to two miles before splashing into a river or stream. They were then rafted to a nearby sawmill for local use, or down to the Columbia River and on to the Pacific Ocean to waiting markets in California. The logging industry brought new people to the area. Men from all over the country filled camps and saw mills, working for \$40 a month sawing lumber, floating logs, driving oxen, running steam donkeys, and building roads. Enterprising businessmen also arrived in the valley, looking for a way to make the industry more efficient and profitable (Urrutia 1998).

Frederick Weyerhaeuser eyed the Pacific Northwest from St. Paul Minnesota, visualizing the wealth locked in its dense forests. Where Captain McClellan had seen a land devoid of any practical use, Weyerhaeuser saw unlimited board feet and millions of dollars. On January 3, 1900, Weyerhaeuser and his partners bought 900,000 acres of timberland from the Northern Pacific Railroad, paying \$6 an acre – a total expenditure of \$5,400,000 (Urrutia 1998). Weyerhaeuser initially preferred the Puget Sound for his base of operations, because of its deep-water harbors and connections to the large markets of Seattle, Tacoma, and California via the Pacific Ocean. The great fire of September 12, 1902, known as the Yacolt Burn, changed his mind. The fire – which blackened the skies of southern Washington, killed 35 people, burned 30 farms, and destroyed 230,000 acres of forest and farmland – started out as a tragedy for residents of the Lewis River Valley. The burn, however, turned into an economic boom as lumbermen set out to salvage acres of blackened old-growth forest. George Long of the Weyerhaeuser Company recognized an opportunity and quickly turned his attention from the Puget Sound to Clark and Cowlitz counties. Yacolt, a small town located near Cedar Creek 30 miles north of Vancouver, became the center of the timber salvage operation. The step-up in logging brought modernity to the area's timber industry, with railroads and steam donkeys taking the place of oxen and greased skids. Salvaging the burned timber took 14 years, and the harvest of green timber in the area went on until 1924 before Weyerhaeuser began to look elsewhere for a new base of operations (Urrutia 1998).

The lumber industry played a pivotal role in the growth and economy of Clark and Cowlitz counties. On a small scale, timber operations brought an increased market for the local produce and livestock of Lewis River homesteaders. On a larger scale, the industry accelerated the growth of towns and new cities along the Columbia, such as Kalama, where the Weyerhaeuser mill was located. Population swelled as loggers and mill workers flocked to new jobs. The lumber industry also modernized transportation, fostering the growth of railroads, logging roads, and riverine transportation.

4.2.3 Forest Service

The rush of land privatization during the early nineteenth century – particularly by large corporate interests – led to the misuse of U.S. forests, including exploitive logging, mining, grazing, and agriculture (Hirt 1994:xvii). Mid- and late- nineteenth century reformers began to advocate for public land ownership, ultimately convincing politicians of the need to protect national forestland from private interests. In 1891, Congress authorized President Benjamin Harrison to sign the Forest Reserve Act, which created 14

million acres (less than two percent of the unclaimed forest land in the country) of “forest reserves” from the public domain (Hirt 1994:29). In most cases, designated forests did not include economically productive or accessible forestlands that were highly coveted by private landowners. Instead, the forest reserves were valued for their role in protecting watersheds, preserving big game habitat, and providing a back-up timber supply when private landowners could not meet the demand for lumber.

Although the 1891 Forest Reserve Act called for the identification of forest reserves, it did not stipulate a management plan or supervising agency for them. In response, President Grover Cleveland enacted the 1897 Forest Management Act, also called the Organic Administration Act, and widely known as the “Organic Act.” Under this act, the General Land Office (GLO) assumed responsibility for the forest reserves. The Act also stipulated that the two main purposes of the forest reserves were “securing favorable conditions of water flows [and maintaining] a continuous supply of timber” (Hirt 1994:34-35). However, early use of national forests did not focus so much on timber harvesting as on protection of watersheds and habitat, and the curbing of corporate ownership of forestland.

Connecticut-born Gifford Pinchot became Chief of the Division of Forestry in 1898. In 1905, the Department of Agriculture assumed management over the forest reserves, and the Division of Forestry was renamed the Forest Service. The same year, Pinchot became the first Chief Forester of the Forest Service, and “forest reserves” were renamed “national forests” two years later. Pinchot soon adopted a management policy that allowed for active timber harvesting within the national forests, paving the way for widespread logging practices, particularly in the western states, following the forest depletion in the Great Lakes Region (Williams 2000:54). Timber harvesting increased steadily through World War II. The post-war baby boom and sudden demand for housing in the United States highlighted the need for increased logging in Federal lands. The trend for non-sustainable forestry practices continued until 1992, when the Forest Service adopted a policy of ecosystem management, a “new goal for the national forests, which was more philosophical and addressed the larger societal questions and values surrounding the management of the national forests” (Williams 2000:56).

Gifford Pinchot visited the Pacific Northwest in 1896 as a representative of the Special Commission Studying National Forest Land. Upon seeing the forests west of the Cascade Mountains, he recommended that the reserve be expanded to include over 2 million acres of forest in southwest Washington. The 2,234,880-acre reserve between the Columbia River and Snoqualmie Pass originally was designated for national forest use in 1897. It was known as the Mount Rainier Forest Reserve, one of 13 new ones dedicated as a result of the special forest commission study (Jermann and Mason 1976:1; www.fs.fed.us/gpnf/ 1). In 1908, just one year after the Forest Service had been created, the Mount Rainier National Forest was split into the Rainier National Forest to the north and the Columbia National Forest to the south. After many boundary changes, the Columbia National Forest, as well as newly annexed forest territories, was renamed the Gifford Pinchot National Forest in 1949 (McClure and Mack 1999).

Trail access played an integral role in the Gifford Pinchot National Forest, particularly within the Lewis River Project Area. The Lewis River trail provided a vital means of mobility. Sections of the Lewis River trail appear to have been developed along an existing Indian trail, which was used by McClellan and his party during the 1853 expedition. Other portions of the trail, particularly those leading to the Spirit Lake mining district, were probably built by local landowners and anglers. Between about 1912 and 1920, the trail was extended past Muddy River (Hastings 1914; McClure 2002). The Lewis River Trail was closely associated with Ranger Station development in the area. Early forest guards were headquartered in Cougar, at the end of the wagon road from the town of Woodland. Forest guard Fritz Sethe was headquartered there in 1909, and is credited with building the Lewis River Ranger Station, a single-story front-gabled log cabin, along the trail the same year³. During the first half of the twentieth century, Forest Service personnel extensively used the Ranger Station facility, which included a store garage, store house, bunk house, gas house, and a barn and pastures for Forest Service livestock (Plat Showing Location of Lewis River Guard Station Buildings Sec. 30, T 7 N, R 5E, W.M. Surveyed, Columbia National Forest, 1935).

During the first half of the twentieth century, the trail was further developed to provide fire protection within the forest. In the early 1930s, fire watchmen and telephone line crews regularly used the Lewis River trail. The 1933 and 1934 diaries of former District Ranger Harvey Welty provide a first-person account of the Lewis River area. According to Mr. Welty, the telephone line played a critical role in fire protection throughout the forest, connecting fire lookout stations to guard stations and district headquarters. However, fire protection methods advanced rapidly, and the Forest Service began to rely on aerial fire detection, radio use, and maintained roads. Eventually, the former system of fire protection, including the trail, lookout tower, and phone line, became obsolete and by 1960, the guard station had been removed (Hastings 1914; McClure 2002, personal communication).

4.2.4 Hydroelectric Power

Plans for hydroelectric developments along the Lewis River began in the first decade of the twentieth century, and even the old Cedar Creek Gristmill was converted to generate electrical power (Kirk and Alexander 1990). Inland Power and Light Company (a predecessor of Pacific Power & Light, which later took the name PacifiCorp) obtained a permit to begin construction of the Merwin facilities (historically called the Ariel Project) in 1929, and construction began soon after. Land acquisitions along the Lewis River, though, began in the early 1920s to secure the property that would be inundated by the Merwin Reservoir, displacing numerous families. Construction of the Merwin hydroelectric facilities was completed in 1931. Workers occupied temporary housing located throughout the Project area. Another influx of workers came during the Great Depression, when the Civilian Conservation Corps set up a camp along Speelyai Creek for laborers working on Forest Service lands (PacifiCorp 1999). Additional camps were set up along the Lewis River during the construction of the hydroelectric facilities at Yale

³ The Ranger Station was located in Township 7 North, Range 5 East, Section 20.

and Swift in the 1950s. Logging and the generation of hydroelectric power have remained important in the local economy since that time.

4.3 ARCHAEOLOGY

4.3.1 History of Research

The purpose of this review of the history of archaeological research is to provide a broad outline of the progress of research in the Lewis River basin, which extends back to only the 1950s. No records of archaeological investigations at Lake Merwin predating its construction in 1929 are known. While pre-inundation archaeological investigations did occur prior to a few projects dating to the 1930s (e.g., Cressman's surveys of the Wickiup Dam area [Cressman 1937]), this did not become standard practice until much later.

The earliest work in the upper portions of the Lewis River basin is Alan Bryan's survey of the Yale Reservoir project area in 1953. He recorded six sites including four camps, which contained lithic debitage, and conducted excavations at one housepit site, 45CL420. The artifact sample from this site include 51 tools such as scrapers, knives, drills, projectile points, cobble choppers, arrow-shaft smoothers, and several hundred pieces of debitage. Bryan also identified a large hearth and a burial cairn, which contained fragments of human bone, possible charred human bone, a layer of ash, a scraper, and a chopper. Bryan speculated that the cairn might contain a post-burial or partial cremation (Bryan 1953, 1955:281-282, 1992:61). This site is important to an understanding of Lewis River prehistory because it indicates that late prehistoric Native American groups occasionally used sites along the upper Lewis River for long-term residential bases. An artifact analysis from three of these sites, 45C420, 45CW3, and 45CW4, was conducted by Gary Wessen and can be found in Appendix I of the HRA 2003 report.

In another early study, Clayton Denman, a graduate student in archaeology from the University of Washington, surveyed the Swift Nos. 1 and 2 project areas in 1957 at the invitation of Pacific Power & Light Company and Cowlitz County Public Utility District No. 1. In his survey notes for the Swift No. 1 Project, Denman mentions several rockshelters formed in "disintegrating breccia," one of which contained a red ochre deposit. Homesteaders informed Mr. Denman that they had collected pestles stained with red ochre in the vicinity. He excavated a test pit in a rockshelter located across from the mouth of Pine Creek. The probe extended four feet below "a 150 year old ash fall from Mount St. Helens," but did not yield any cultural materials. Denman's work at the Swift No. 2 project area also discovered several small "lava cones," which had not "been used as occupation sites" (Denman 1957a, 1957c, 1957d; Hamilton 1957; Mandley 1957; Osborne 1957a).

Denman also notes that records indicate "a large Indian campsite and a war in [the] 1880s in one location here," but he states that the logging activities in the area have obscured the ground surface. In addition, flooding of the Lewis River had eroded other areas. Other informants related that they had discovered projectile points around the bases of

trees in what is now Yale Reservoir. Denman searched for, but was unable to locate, a tree that loggers described as having “had [a] date of 18 – something[g]-or-other.” Denman speculates that this tree may have marked the “old McClellan ford site, [located at] the beginning of the trail to Klickitat County used by the Indians for trade.” He mentions seeing traces of an overland trade route along the western bank of Drift Creek and an Indian trail along the eastern bank. As a result of the survey, Douglas Osborne, curator of the Washington State Museum, concurred that the Swift Nos. 1 and 2 areas contained “no archaeological values” and that the project construction could commence (Denman 1957a, 1957b, 1957c; Osborne 1957b, 1957c).

A few sites were investigated in the lower portion of the Lewis River basin during the late 1960s and 1970s. In 1968, David Munsell located 45CL26 along the river near Woodland. This site consists of several cultural strata beneath ca. 0.5 meter of sterile alluvium. Salvage excavations undertaken there produced a collection of chipped stone artifacts dominated by projectile points and other small flake tools (Schalk 1969). Only a few flaked cobbles were present. None of the cultural deposits were dated, but a stylistic assessment of the projectile points suggests that many of them are relatively recent. In the mid-1970s Hal Kennedy and Jerry Jermann worked at 45CL117, a site located close to the Lewis River’s confluence with the Columbia River. Much of their effort focused upon cultural materials exposed on the beach in front of the site, but they also noted the presence of two cultural strata. A charcoal sample from the upper of the two produced a date of $2,800 \pm 105$ B.P. (UW-473). Kennedy and Jermann (1978) recovered a collection of 139 chipped stone tools and 253 pieces of debitage. Large flaked cobbles account for 102 of the chipped stone tools, while only three projectile points and a small number of flake tools were encountered.

In the 1980s and early 1990s, several studies focused upon 45SA27, a site located at the Lower Lewis River Falls (Brauner et al. 1997; Gowan and McClintock 1993; Pederson 1983). The combined efforts produced a very large sample of chipped stone artifacts, almost all of which are pieces of debitage. The tool assemblage includes microblades, small cutting and scraping tools, and bifacial performs. Strikingly, it contains only a few projectile points and no flaked cobbles. All of the cultural materials at 45SA27 were encountered beneath the ca. 3,350 B.P. Mt. St. Helens ‘Y’ Tephra and stratigraphic evidence suggest that some of these objects could have been deposited as much as 11,000 years ago.

Archaeological investigations have continued at a steady pace in the 1990s. In mid-September 1990, a Gifford Pinchot National Forest (GPNF) archaeologist reported to PacifiCorp the occurrence of unauthorized excavation of archaeological deposits along the exposed shoreline of Merwin Reservoir during an unusually deep drawdown. Subsequently, PacifiCorp contracted the Oregon State Museum of Anthropology (OSMA) to survey high probability areas, evaluate the known deposits, and assess the damage to cultural resources at Merwin Reservoir (O’Neill 1991). The OSMA staff conducted a brief reconnaissance, resulting in the discovery of an archaeological site at Speelyai Bay (45CW100), and a second site at the mouth of Buncombe Hollow Creek (45CL403). Excavations in Lake Merwin Shelter, which is near the eastern end of Lake

Merwin, failed to uncover any prehistoric cultural materials, so this rockshelter is not considered an archaeological site. The lack of cultural materials in Lake Merwin Shelter closely follows the results of Denman's excavations upstream, which also failed to find cultural materials in most of the tested rockshelters.

Additional test excavations were undertaken at the Speelyai Creek Site, and cultural materials were found up to a depth of 80 cm below the surface in some units. Artifact densities throughout the site were low, and the density of debitage per cubic meter exceeded 300 pieces in only one 10-cm level. The recovered assemblage was limited to only flaked stone artifacts – no features, ground stone tools, or faunal remains were discovered. O'Neill did not make any formal recommendations regarding the site's eligibility for inclusion in the National Register.

The other archaeological site, an extensive scatter of debitage and cobble tools in the Buncombe Hollow area on the south side of Lake Merwin, was not subject to any excavations, and no recommendations regarding its eligibility were presented in O'Neill's report. The six isolated finds consisted of nine or less flaked stone artifacts, all of which were on the north side of the reservoir.

O'Neill also conducted a brief survey of a historic-period Native American cemetery in the Woodland Park area. Despite the fact that the bodies were removed prior to the construction of the reservoir, O'Neill found evidence of disturbance:

Graves were excavated into the compact conglomerate that forms a [usually submerged] low mound to the south of Woodland Park. It was noticed that some unauthorized probing had been done at this location, exposing wooden grave liners. No aboriginal cultural material was located in this area [O'Neill 1991:32].

No other historic-period archaeological sites were recorded during this survey, and the hydroelectric structures were not evaluated.

More extensive investigations were conducted in the two other reservoirs that make up the Lewis River Hydroelectric Project – Yale Reservoir and Swift Reservoir. During 1996 and 1997, Heritage Research Associates (different from Historical Research Associates) conducted a survey of the drawdown zone and the surrounding APE of the Yale Reservoir, and recorded eight prehistoric sites, five historic-period sites, and nine isolated finds. The sites and isolates consisted of lithic debitage and formed tools. Ground stone tools were found at five of the sites, one of which (45CW102) contains evidence of a pithouse similar to the one documented earlier by Bryan. Excavations conducted at 45CW102 produced a large sample of chipped stone artifacts dominated by debitage (Minor and Musil 1998). Most tools are either bifaces or small cutting and scraping forms. A radiocarbon sample associated with the pithouse produced a date of $3,690 \pm 80$ B.P. (Beta-91260). Related excavations at the nearby site of 45CW101 included the recovery of a radiocarbon sample that produced a date of $4,300 \pm 90$ B.P. (Beta-91258). The latter is the oldest radiocarbon date yet to be obtained from a cultural

deposit in the Lewis River Valley. Historic-period features included a ditch, trash scatter, road grades, and house/cellar site. Heritage Research Associates concluded that the buildings and structures associated with the Yale Hydroelectric Project are not eligible for listing in the National Register (PacifiCorp 1999).

PacifiCorp contracted with Historical Research Associates to conduct a survey of the drawdown area of Swift Reservoir. The survey team identified two sites and nine isolated finds, all of which contained flaked stone artifacts. Test excavations conducted in one of the sites, W-1, showed that it should not be considered eligible for inclusion in the National Register. Due to problems in transporting bulky excavation equipment to the other site, J-2, the crew was not able to conduct test excavations. Its eligibility for inclusion in the National Register remains unknown. None of the isolates was considered to be eligible. No historic-period sites were identified.

HRA (2002) also conducted historical assessments of the Merwin and Swift hydroelectric projects. This work identified some National Register-eligible resources based on their importance in regional history as well as engineering and architectural design. The Merwin Project (referred to historically as the Arial Hydroelectric Project) has a National Register-eligible historic district consisting of the Dam and Water Conveyance System, Powerhouse, and Control House.

The work initially concluded that the Swift Hydroelectric Project (including the Swift No. 1 and Swift No. 2 plants) formed an eligible National Register district. However, after a canal failure in April 2002, it was determined that the Swift No. 2 resources no longer retained the physical integrity necessary for National Register listing. The Swift No. 1 remained eligible, and its resources consist of the Swift Dam (including outtake structure, spillway, surge tank, and power tunnel), Swift No. 1 Powerhouse and Penstocks, and the Swift No. 1 Transmission Line (HRA 2002).

The Lewis River Fish Hatchery and the Speelyai Fish Hatchery are both considered ineligible for the National Register, along with the Merwin Park Comfort Station, and the Beaver Bay and Cougar Campground comfort stations, which are located on Yale Reservoir. The same is true for several bridges including the State Highway 503 Bridge, the IP Bridge, and the FS Road 90 Bridge (HRA 2002).

4.3.2 Archaeological Resources

The following section summarizes the types of archaeological resources, both sites and isolates, which have been found in and around the Project area. This summary indicates the kinds of archaeological resources that are likely to occur in the Project area. This information also helps to determine what research questions may reasonably be addressed through archaeological investigations in this area. Research themes are discussed in the following Prehistory section.

Before the survey reported here, 43 archaeological resources were recorded in the Lewis River Hydroelectric Project's APE, including Lake Merwin, Yale Reservoir, Swift

Reservoir, and attendant facilities. For descriptive purposes, these archaeological resources can be divided into six classes:

- ? Prehistoric lithic scatters with ground stone tools;
- ? Prehistoric lithic scatters without ground stone tools;
- ? Isolate finds with flakes and tools;
- ? Isolated finds with tools only;
- ? Isolated finds with flakes only; and
- ? All historic-period sites.

These site classes can be correlated with particular prehistoric activities. Ground stone tools are found primarily where intensive processing of plant foods occurred, and this suggests that the occupants of the site stayed for a relatively long period of time. In fact, two of the lithic scatters with ground stone tools produced evidence of pithouses (45CL420 and 45CW102), an architectural feature that only occurs in sites that were occupied for substantial periods of time. Following Binford's (1980) terminology, these sites, especially the ones with pithouses, should be considered *residential bases*. The sites with ground stone but without evidence of dwellings or storage features probably should be considered *field camps*. A field camp is a temporary or short-term residential site occupied by a group while they are away from their primary place of residence.

The lithic scatters without ground stone tools may represent field camps where no intensive plant food processing was undertaken, or they may represent *stations*, which are information-gathering sites where limited manufacturing and maintenance activities may occur. Field camps should contain a higher density of cultural materials than stations, but lower densities of cultural material than those found in residential bases (Binford 1980).

The isolated finds should probably be considered task-specific *locations* where a limited range of activities was undertaken. Those isolated finds that contain only flakes or cores may represent places where raw materials for flaked stone tools were procured and assayed. Isolated finds with tools or a mix of tools and flakes are probably more related to subsistence resource acquisition (Binford 1980).

Another class of cultural resource that may be present in the Project area is culturally modified trees (CMTs), which can be Native American or Euroamerican and date to the prehistoric or historic period. The most common form of CMT in the Pacific Northwest is the peeled cedar. Cedar bark was an important material for many baskets, clothes, and other carrying devices in the Pacific Northwest, and Indian groups often took bark from trees to construct these artifacts. In many cases, peeled cedars feature a triangular-shaped area on one side of the tree from which bark has been removed up to a height of several feet. Cut marks from the initial removal of the bark can often be found at the base of the peeled area, and a second set of cut marks can sometimes be found at the upper end of the

peeled strip. Another form of CMT is the “blazed tree” that marks the location of trails. Sites with CMTs can be eligible for listing in the National Register of Historic Places. The Gifford Pinchot National Forest has developed a management plan for peeled cedar trees (Hollenbeck 1985).

Fires can sometimes kill the bark on one side of a cedar, resulting in a barkless strip on one side of a tree that resembles a peeled cedar, meaning that it is important for cultural resource surveyors to inspect all potential CMTs carefully for cut marks and other signs of human behavior. At present, no CMTs have been recorded around any of the reservoirs on the Lewis River, and this may be due to the fact that there is a long history of logging and fires in the Lewis River drainage, and that most cultural resource surveys have been limited to the drawdown zones.

Historic-period sites make up less than 14 percent (6 out of 43) of the total number of archaeological resources, and they do not appear in sufficient frequency to develop a meaningful typology. Site types include two transportation-related features (i.e., grades), a ditch, a house foundation or cellar, a trash scatter, and an abandoned historic-period Native/Euro American cemetery. Substantial historic-period settlements are not expected in the Project area, given the narrow nature of the Lewis River floodplain and the steep slope of the adjacent valley walls. Nevertheless, historic-period accounts of life in the area prior to the construction of Merwin Dam suggest that remains of individual farmsteads and related structures may be present.

As one might expect, the frequency of prehistoric sites that may represent residential bases is much lower than the sites representing resource acquisition. The database includes 37 prehistoric archaeological resources, and almost two-thirds of these (24 out of 37) are isolated occurrences of less than nine prehistoric flaked stone artifacts (Table 4.3-1). Of the remaining 13 archaeological resources, 11 are prehistoric lithic scatters, one is a prehistoric pithouse (45CL420), and one is a possible prehistoric pithouse (45CW102).

The previous research in the Lewis River drainage also helps establish expectations about the kinds of artifacts that occur in sites or isolates in the Project area. Unmodified flakes (debitage) are far and away the most common class of artifact found in the Lewis River drainage. All of the prehistoric sites contain varying amounts ofdebitage, as do most (15 out of 24) of the isolated finds. Eight of the isolated finds contain only flaked stone tools. Other types of remains are rare. Ground stone tools, including manos, metates, stone bowls, and pestles, have been found in only five of the known sites, and all of those sites were located in the Yale Reservoir. Only one of the sites, 45CW105, has produced substantial amounts of animal bone. Features suitable for radiocarbon dating have only been found at one site, 45CW101, which produced a date of 4300 ± 90 B.P. (PacifiCorp 1999). If the prehistoric cultural resources in the Merwin Hydroelectric Project APE follow this pattern, research questions that use flaked stone artifacts as primary sources of data are more likely to be addressed than research questions that depend on other, rarer classes of data. Appropriate research questions and required data categories for

addressing those questions are discussed in the Project’s archaeological research design (HRA 2003).

Table 4.3-1. Summary of Archaeological Resources Recorded in the Lewis River Hydroelectric Projects APE.

Site Type	Merwin	Yale	Swift	Totals
Lithic Scatters w/ Ground Stone Tools	0	5	0	5
Lithic Scatters without Ground Stone Tools	2	4	2	8
Isolates w/ Flakes & Tools	1	2	1	4
Isolates w/ Tools Only	4	4	1	9
Isolates w/ Flakes Only	1	3	7	11
All Historic-Period Site Types	1	0	5	6
Totals	9	18	16	43

Moving beyond the simple content of the archaeological resources, the standards for National Register eligibility also require that researchers consider the integrity of the cultural resources. Most of the sites in the Project APE are likely to be found in the drawdown zone. Sites in this area are often subject to erosion. As noted earlier, most sites in the area are likely to consist of concentrations of chipped stone debris in one or more related settings in a reservoir drawdown zone. A site area may be one of three things:

- 1) simply a concentration of lagged-out stone materials on an eroded surface;
- 2) a concentration of lagged-out stone materials on or associated with an eroding, apparently intact, cultural deposit in the drawdown zone; and/or
- 3) a concentration of lagged-out stone materials associated with an eroding, apparently intact, cultural deposit located immediately adjacent to the drawdown zone.

The limitations on the data notwithstanding, many recorded sites appear to be of the first type. Note that all three elements of this classification accept that if an identified site is located in the drawdown zone of a reservoir, then it is eroding. While other factors may also be involved, one can assume that reservoir pool level fluctuations are the principal engine driving erosion in the drawdown zone. Deposition of silt and tephra (volcanic ash) from the 1980 eruption of Mount St. Helens is documented in some areas, particularly the upstream portions of the Swift Reservoir (Goetz et al. 2003). Similar areas of silt and tephra deposition in the Lake Merwin area are likely to be limited to deep water portions of the reservoir, in part because much of the coarser sediment would have been deposited upstream in the Yale and Swift reservoirs.

The phrase “apparently intact” is used because survey records rarely provide insight into depositional structure and it is necessary to recognize that a variety of effects may have disturbed deposits here. In fact, most deposits in and near the reservoirs have probably been disturbed by one or more effects. Recent land use history prior to the reservoirs certainly affected archaeological resources. Areas along the Lewis River now inundated

by the reservoirs contained homes, farms, roads, bridges, and other structures until the late 1920s. This infrastructure undoubtedly impacted archaeological sites, especially in heavily used areas like the Speelyai Prairie. Based on the experience of the last major drawdown in 1990-1991, many of the archaeological sites in the drawdown zone have been at least surface collected regularly, and unauthorized excavations have occurred in other areas. All things considered, the phrase “apparently *in situ*” suggests that a cultural matrix is present, but does not necessarily imply that the deposit is intact or that the objects present on the surface have not been picked over before. These gloomy caveats notwithstanding, each site represents unique conditions and that many sites – or perhaps portions of many sites – in the Project area may have survived all that has happened and still remain potentially significant archaeological resources.

Despite the apparent rarity of historic-period archaeological sites, it is important that this account also include some mention of historical archaeology. Aside from the assessments of the Yale hydroelectric facilities, there was little effort given to systematically considering the Project area for such archaeological resources. It is nevertheless clear that the Project area may contain potentially significant historic-period archaeological resources. Possible candidates may include intact segments of the original Lewis River Road, remains of the Speelyai ferry landing, and other historic-period features of Speelyai Prairie. In short, there appears to be a variety of historic features and materials – representing late-nineteenth through mid-twentieth century occupation – in the Project area, and some of these may be significant archaeological resources.

4.3.2 Prehistory of the Lewis River Basin

The archaeology of the upper reach of the Lewis River basin is not well known. Investigations have been undertaken in each of the major hydroelectric project areas (see above), as well as in selected sites in the Chelatchie Prairie, which is on the southern side of Green Mountain (Marden 1989; HRA 1997). While presenting their research in the context of previously completed projects, each of these preceding projects has focused primarily on individual sites. Few efforts have been made to synthesize the archaeological record of the Lewis River basin, creating a holistic picture of prehistory in this area.

In many ways, archaeological research in the Cowlitz River drainage to the north has reached a more advanced state of development than the work in the Lewis River drainage, primarily because of the completion of large archaeological inventory and evaluation projects associated with hydroelectric developments. McClure (1992) has also produced an excellent overview of sites in the Cowlitz River drainage that synthesized individual research projects into a unified, understandable whole.

Because of the proximity of the Cowlitz River drainage to the Merwin Project area, and the presence of similar environmental conditions, many of the research issues that were identified in that area are also germane here. Especially important are the efforts that were made to integrate individual site data into broader regional perspectives. Such reconstructions are important vehicles for visualizing cultural behaviors and directing the

conduct of further research. Regional studies in western Washington have thus far tended to focus upon the cultural chronology and land use history. For the most part, such studies have worked in areas other than the Upper Cowlitz Valley and their findings are only broadly relevant to this Project area. Some work has, however, been based in this area and is worth considering here.

Of particular interest is a cultural chronology for the Upper Cowlitz Valley proposed by McClure in 1992. McClure's approach recognizes both the volcanic history and the widespread volcanic tephra in this region, and groups that are dated archaeological assemblages in terms of dated volcanic intervals. This approach links cultural behavior to important environmental effects, and provides a basis to date archaeological materials by means of their associations with particular volcanic tephra. McClure's (1992:7-16) chronology for the Upper Cowlitz Valley is based upon the Holocene eruptive history of nearby Mount St. Helens and it groups the archaeological assemblages into three intervals between eruptive episodes noted earlier (Figure 2). His groups include the following: the Swift Creek Interval (ca. 9,000 to 4,000 years ago), the Castle Creek Interval (ca. 1,600 to 500 years ago), and the Kalama Interval (ca. 500 to 200 years ago). Note that the three intervals do not span the entire Holocene, and that they include a significant gap between the Swift Creek and Castle Creek Intervals (i.e., between ca. 4,000 and 1,600 years ago). In fact, only the first of these intervals (Swift Creek) separates two eruptive stages; the next two really separate eruptive periods within the Spirit Lake Eruptive Stage.

The Swift Creek Interval – following the Swift Creek Eruptive Stage – marks a relatively quiet period for Mount St. Helens during the Early and Middle Holocene. McClure begins the interval ca. 9,000 years ago⁴ and uses it as his basal unit because there are no dated archaeological assemblages from the Upper Cowlitz Valley that are older.⁵ Archaeological assemblages attributable to the Swift Creek Interval are characterized by a variety of leaf-shaped lanceolate and large stemmed projectile points, small unifacial cutting and scraping tools, and flaked cobbles. Stylistically, these assemblages are very much like Early to Middle Holocene Cascade and Vantage Phase assemblages from eastern Washington and contemporaneous Olcott Complex materials from western Washington. Faunal materials associated with Swift Creek Interval assemblages indicate that a variety of large and small terrestrial mammals, fish (especially salmonids), birds, and plants were being used. Swift Creek Interval peoples are seen as hunting and gathering foragers who were closely related to Early to Middle Holocene foragers over much of the Pacific Northwest.

⁴ Note that this date is not in precise agreement with Pringle (1993:26) who ends the Swift Creek Eruptive Stage at ca. 10,000 years ago.

⁵ There are, however, undated projectile points in private collections that suggest the presence of people as much as 11,000 years ago.

Proposed Cultural Sequences			
Age in Years B. P.	Kidd (1964)	Warren (1968)	McClure (1992)
0	Late	Plateau Pattern	Kalama Interval
500			?
1,000			Castle Creek Interval
1,500			
1,950	Middle	Selah Springs Pattern	hiatus
2,950			
3,950			
4,950			
5,950	Early	Cold Springs Pattern	Swift Creek Interval
6,950		Old Cordilleran	
7,950			
8,950			
9,950	Windust-Lind Coulee		?
10,950			

Figure 2. Chronological Sequences for the Western Washington Cascades Foothills Area.

The following Castle Creek Interval begins after a hiatus of as much as ca. 2,400 years. The hiatus begins around the time of the onset of the Smith Creek Eruptive Period (the beginning of the Spirit Lake Eruptive Stage: ca. 3,900 years ago). The Castle Creek Interval assemblages reflect important stylistic and technological differences from the earlier Swift Creek Interval assemblages. Most notably, smaller triangular stemmed points now replace the leaf-shaped lanceolate and large stemmed projectile points common in the earlier period. The latter are much like contemporaneous points from eastern Washington and the Lower Columbia River area to the southwest. From a technological point of view, the lanceolate and large stemmed points are thought to represent spears and/or atlatl darts; the small stemmed points are thought to represent bows and arrows. Despite this technological change, the resource base of the Swift Creek and Castle Creek Intervals appears to have been similar.

The Kalama Interval is the last of the three units and begins after a very brief eruptive period thought to have occurred ca. 1480-1482 A.D. Kalama Interval assemblages share much with the preceding Castle Creek assemblages. For the most part, small stemmed projectile points, scrapers, and other chipped stone forms characterize these assemblages. While these volcanic events were significant, they do not appear to have been anywhere near as dramatic as the earlier events. Thus, linkages between the Castle Creek and Kalama Intervals are considerable, and there are no indications of major changes in technology, economy, or settlement patterns. There can be little question that Kalama Interval assemblages represent the late prehistoric Taidnapam people; given the strong ties between Castle Creek and Kalama, the earlier Castle Creek materials may well also represent them.

The chronology ends with the beginning of the historic period. While it has no named early historic unit, it is important to emphasize that Native American occupation of the Lewis River Valley continued after the arrival of Euroamericans. Early historic Native American assemblages have not been extensively studied, but they appear to be essentially Kalama Interval assemblages with Euroamerican trade goods added to them. Nevertheless, it is likely that substantial changes in technology, economy, and settlement patterns were all occurring during this period.

The McClure chronology is a useful tool that embraces a number of ideas about the prehistory of the region. One such idea is that of a change in cultural patterns that occurred sometime between the Early/Middle Holocene and the Late Holocene. Many Northwest Coast researchers (e.g., Ames 1985, Schalk 1988, Matson and Coupland 1995) have discussed similar changes. Various ideas have been proposed for why such a change occurred. Environmental change, technological change, and human population growth are all cited, but no consensus exists.

Such changes are often considered with the terms and concepts of Lewis Binford's (1980) forager-collector continuum. This is a model of hunter-gatherer organization that contrasts land use systems that did not employ the intensive use of food storage technology (i.e., foragers) with those that did (i.e., collectors). Foragers are seen as having a small group size and inhabiting only small and relatively transitory settlements. Collectors, alternatively, were often concentrated in larger groups and occupied larger, more varied, and sometimes relatively stable and permanent settlements. A number of interesting demographic, material culture, and social organization characteristics are suggested to be associated with each type. In interior areas of the Northwest Coast, some researchers have substituted the 'forager vs. collector' distinction with what is termed the 'broad spectrum foraging vs. semi-sedentary foraging' distinction (e.g., Mierendorf 1986 and Burtchard 1991). While the names are different, the concepts are quite similar; for example, compare Binford (1980:5-13) with Mierendorf (1986:50-60).

The McClure chronology recognizes a change in cultural patterns and suggests that this change occurred between the Swift Creek and Castle Creek Intervals, or sometime between ca. 4,000 and 1,600 years ago. While McClure does not go into great detail regarding the land use strategies thought to be associated with the noted assemblage

changes, he clearly relates them to this idea. McClure (1992:11) refers to the earlier pattern as “broad-spectrum foraging” and suggests that the later pattern may have been a “collector” type of strategy.

A related idea in the McClure chronology is the notion that temporally different cultural assemblages are marked by different types of artifacts. This idea is also common in Northwest Coast archaeology. Principal dimensions of such variation include the preference for stone chipping materials and the styles of projectile points used. With respect to the latter, McClure accepts the widespread view that leaf-shaped lanceolate and large stemmed projectile points mark early assemblages, while smaller, triangular stemmed points characterize later assemblages. The idea is particularly relevant to the Project area because the excavation of two sites just to the east led Daugherty et al. (1987a and 1987b) to suggest that such a replacement of projectile point styles did not occur in the Upper Cowlitz Valley. Rather, they argue that the leaf-shaped lanceolate and large stemmed points persist until quite recently and that the smaller triangular stemmed points are associated with them in later deposits. While this conclusion has not found much support from other sites in the southern Washington Cascades, excavations in sites in the Oregon Cascades have documented a long temporal span for leaf-shaped projectile points (Connolly and Baxter 1986; Flenniken 1991).

Another aspect of the McClure chronology addresses yet another regional issue. The McClure chronology includes a hiatus of as much as ca. 2,400 years beginning sometime around the onset of the Smith Creek Eruptive Period (ca. 3,900 years ago). A similar hiatus has been reported elsewhere in southwestern Washington and this break in the occupation sequence may be related to volcanic activity in the region. Lewarch and Benson (1991), for example, have suggested that the massive explosion that Mount St. Helens experienced ca. 3,500 years ago may have caused human groups to abandon much of the area for as much as ca. 2,000 years. A number of sites in the Upper Cowlitz Valley appear to contain evidence of this abandonment, and do not begin to show activity again until ca. 1,600 years ago.

5.0 PROJECT CULTURAL RESOURCES STUDIES

The following sections discuss the Areas of Potential Effects for cultural resources, consultation with Indian tribes and oversight agencies, and cultural resource studies which have been conducted within the APEs.

5.1 AREAS OF POTENTIAL EFFECTS

The cultural resources studies identified Areas of Potential Effects (APE) for archaeological resources, historical buildings and structures, and traditional cultural properties. The APEs varied by projects, as well.

5.1.1 Archaeological APE

The archaeological APEs essentially follow the FERC Project boundaries and are shown in Figure 3a-c. The Swift No. 1 APE is approximately 1,200 acres, including lands exposed during reservoir drawdown, some land downstream of the dam, and recreational campsites above the high-pool level. Several creeks flow into the Swift Reservoir,

including Range Creek, Drift Creek, and Camp Creek. The normal full pool level for the Swift Reservoir is 1000 feet (304.8 meters) above sea level (asl). Typical winter drawdowns are between 30 and 40 feet. The level was down to about 950 feet (289.56 meters) ASL at the time of the most recent archaeological resources inventory (Goetz et al. 2003).

The Yale Hydroelectric Project APE focuses on the land between the normal winter drawdown (approximately 470 feet [197 meters] asl) and the major access roads around the reservoir. It includes the fluctuation zone, reservoir margin, recreation areas, and Project facilities. The APE comprises approximately 2,280 acres, ca. 700 acres in the drawdown zone and ca. 1580 acres above it. The latter include the area below the high water line, the area between the reservoir margin and the main access roads, and the area associated with the Merwin-Yale 115 kV transmission line. Several creeks flow into Yale Lake, including Dog Creek, Cougar Creek, Siouxon Creek, and Ole Creek. The normal full pool level for Yale Lake is 490 feet (149.35 meters) asl, although the reservoir pool was drawn down on average to 464 feet (141.43 meters) asl during the archaeological survey (PacifiCorp 1999). Typical winter drawdowns are approximately 20 feet.

The Merwin Hydroelectric Project has both primary and secondary APEs. In addition to lands in the immediate vicinity of the reservoir, the primary APE for Lake Merwin also includes several facilities downstream of the dam, such as boat ramps and a fish hatchery, covering about 720 acres. The secondary APE includes about 5,000 acres of PacifiCorp-owned land around the reservoir, which is managed for wildlife enhancement. The dominant feature of the primary APE is the reservoir itself, which extends east from the dam at Lewis River Mile 19.4 to River Mile 32. Several creeks flow into the reservoir; traveling east from the dam, the larger creeks are Marble Creek, Cape Horn Creek, Jim Creek, and Rock Creek. Speelyai Bay, located at River Mile 29, is the submerged mouth of Speelyai Creek. The normal operating elevation of Lake Merwin is 239 feet (72.8 meters) asl. Typical winter drawdowns average about 4 to 6 feet.

5.1.2 Historical Resources APE

The historical resources APE contains the facilities associated with the three projects, including those for power production and transmission, administration, and worker housing. The APE also includes the fish hatcheries and recreation facilities associated with the projects (HRA 2002a; PacifiCorp 1999). Generally, the APE for historic resources corresponds with those for archaeology.

5.1.3 Traditional Cultural Properties APE

The traditional cultural properties APE defined a primary and secondary APE for the Lewis River Hydroelectric Projects. The primary APE extends along the North Fork of the Lewis River from its mouth to its headwaters, including its tributaries and land within 1-mile of the river channel. The secondary study area is bordered by the Columbia River to the south and west, by the Cowlitz River to the north, and by Mt. Adams to the east (HRA 2002b; PacifiCorp 1999).

5.2 CONSULTATION WITH INDIAN TRIBES AND OVERSIGHT AGENCIES

During the relicensing process, PacifiCorp consulted with the Cowlitz Indian Tribe, Yakama Nation, Washington SHPO, and the Gifford Pinchot National Forest (HRA 2002b). The Cultural Resource Work Group held 15 meetings in Portland, Toppenish, Seattle, and Longview, to discuss a number of topics including study plan development, the status of field studies, and potential project effects and management measures, including curation options. The Work Group also reviewed and commented on the APE maps, archaeological research design, and cultural resource reports.

5.3 CULTURAL RESOURCE STUDIES

Prior to the Lewis River relicensing investigations, cultural resource studies conducted in the Project area were almost exclusively archaeological. The relicensing effort included intensive archaeological survey of broad areas in the reservoir drawdown zones and other locations that revealed many archaeological sites. The work also broadened the focus of such studies in order to include consideration of historical buildings and structures as well as traditional cultural resources and properties.

5.3.1 Archaeological Studies

5.3.1.1 Previous Archaeological Studies

The earliest work in the upper portions of the Lewis River basin is Alan Bryan's survey of the Yale Reservoir Project area in 1953. He recorded six prehistoric sites including one site with a housepit, 45CL420⁶. Artifacts at this site included scrapers, knives, drills, projectile points, cobble choppers, and arrow-shaft smoothers. Bryan also identified a large hearth, which contained fragments of human bone, possible charred human bone, a layer of ash, a scraper, and a chopper. Bryan speculated that the cairn might contain a post-burial or partial cremation. This site is important to an understanding of Lewis River prehistory because it indicates that late prehistoric Native American groups occasionally used sites along the upper Lewis River for long-term residential bases (Bryan 1953, 1955:281-282, 1992:61; Wessen 2003).

⁶ Bryan originally recorded this site as 45CL1; when this proved to be a duplicate assignment, the site number was changed to 45CL420.

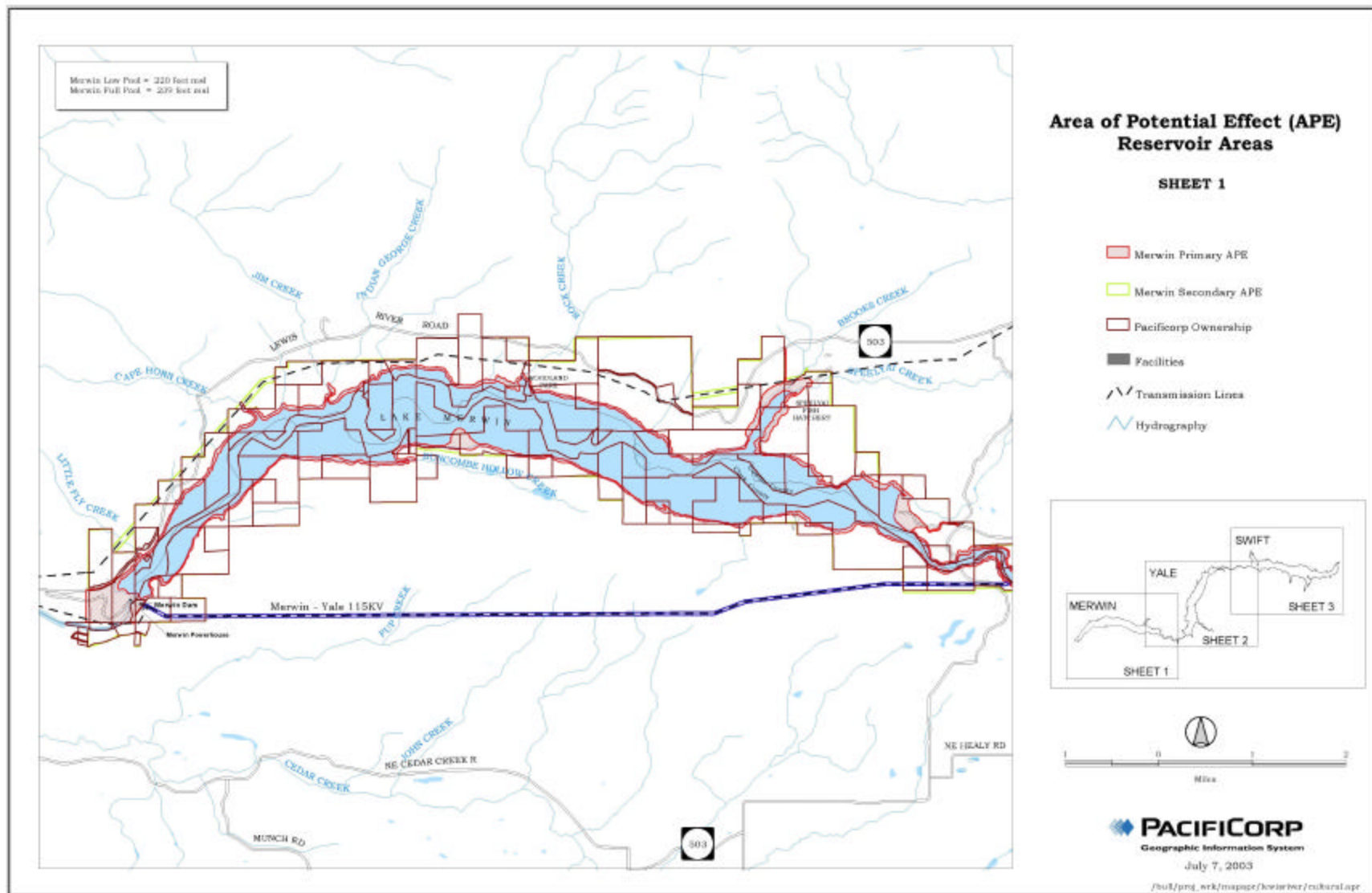


Figure 3a. Archaeological Area of Potential Effects, Sheet 1.

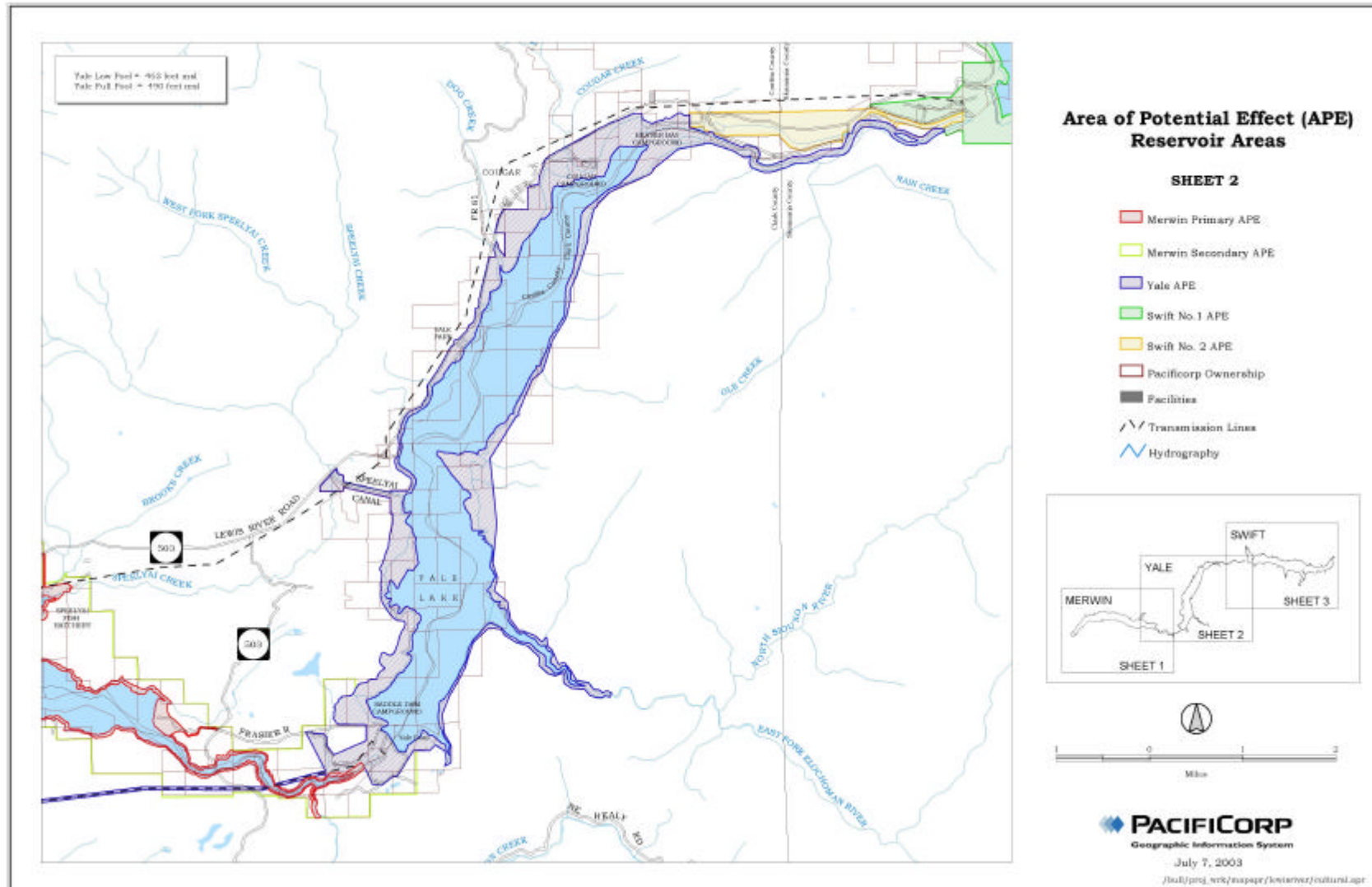


Figure 3b. Archaeological Area of Potential Effects, Sheet 2.

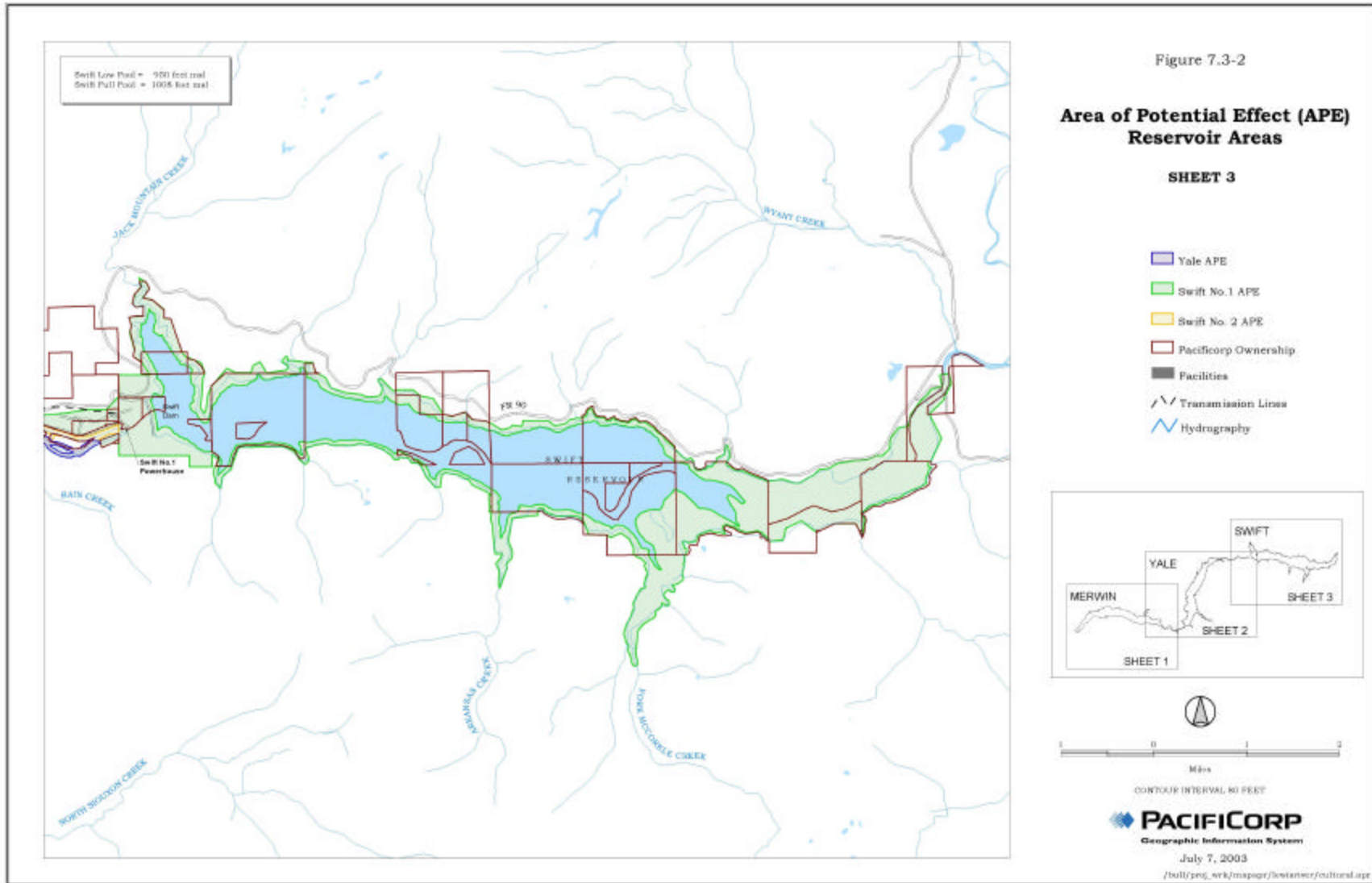


Figure 3c. Archaeological Area of Potential Effects, Sheet 3.

In another early study, Clayton Denman, a graduate student in archaeology from the University of Washington, surveyed the Swift No. 1 and Swift No. 2 Project areas in 1957 at the invitation of Pacific Power & Light Company and Cowlitz PUD. In his survey notes for the Swift No. 1 Project, Denman mentions several rockshelters formed in “disintegrating breccia,” one of which contained a red ochre deposit. Homesteaders informed Mr. Denman that they had collected pestles stained with red ochre in the vicinity. He excavated a test pit in a rockshelter located across from the mouth of Pine Creek. The probe extended four feet below “a 150 year old ash fall from Mount St. Helens,” but did not yield any cultural materials. Denman’s work in the Swift No. 2 Project area also discovered several small “lava cones,” which had not “been used as occupation sites” (Denman 1957a, 1957c, 1957d; Hamilton 1957; Mandley 1957; Osborne 1957a).

Denman also notes that records indicate “a large Indian campsite and a war in [the] 1880s in one location here,” but he states that logging activities in the area had obscured the ground surface. In addition, flooding of the Lewis River had eroded other areas. Other informants related that they had discovered projectile points around the bases of trees in what is now Yale Reservoir. Denman searched for, but was unable to locate, a tree that loggers described as having “had [a] date of 18 – something[g]-or-other.” Denman speculates that this tree may have marked the “old McClellan ford site, [located at] the beginning of the trail to Klickitat County used by the Indians for trade.” He mentions seeing traces of several overland trade routes along the banks of Drift Creek. As a result of the survey, Douglas Osborne, curator of the Washington State Museum, concurred that the Swift No. 1 and Swift No. 2 areas contained “no archaeological values” and that project construction could commence (Denman 1957a, 1957b, 1957c; Osborne 1957b, 1957c).

The Forest Service has recorded five archaeological sites within or near the Swift Reservoir drawdown zone. Two historical sites are located underwater near where Range Creek flowed into the original channel of the Lewis River. Site 7N6E-30/01 is a circa-1935 trail shelter, and 7N6E-31/01 is the 1910s basket ferry across the river along the Overland Trail (Marden 1988a, 1988b). A third historical site, 7N6E-34/01, which is also a basket ferry crossing covered by the impoundment, is located due south of the present location of the boat ramp (Marden 1988c). The fourth site, the Pine Creek Guard Station (7N6E-26/01), was built in 1946 between Forest Service Roads 9030 and 9031, outside of the APE. A Forest Service survey in 1977 noted that the guard station buildings had been removed (Nieland 1977). The fifth site, lithic scatter 6N6E-05/01, is situated at the 1000-foot pool level along the eastern bank of Drift Creek. Archaeologists recorded a basalt biface and two unidentified lithic artifacts from the site, but shovel probes did not yield additional cultural materials. The Forest Archaeologist and the Washington State Archaeologist determined that the site was ineligible for listing in the National Register (Marden and Brackett 1989).

Archaeological investigations continued at a steady pace in the 1990s. In mid-September 1990, a Gifford Pinchot National Forest archaeologist reported to PacifiCorp an

unauthorized excavation of archaeological deposits along the exposed shoreline of Merwin Reservoir during an unusually deep drawdown. Subsequently, PacifiCorp contracted the Oregon State Museum of Anthropology (OSMA) to survey high probability areas, evaluate the known deposits, and assess the damage to cultural resources at Merwin Reservoir (O'Neill 1991). OSMA staff conducted a brief reconnaissance, resulting in the discovery of an archaeological site at Speelyai Bay (45CW100), a second site at the mouth of Buncombe Hollow Creek (45CL403), and six isolated scatters of flaked stone artifacts. Excavations in Lake Merwin Shelter, located near the eastern end of Lake Merwin, failed to uncover any prehistoric cultural materials, suggesting that this rockshelter is not an archaeological site. The lack of cultural materials in Lake Merwin Shelter mirrors the results of Denman's excavations upstream, which also failed to find cultural materials in most of the tested rockshelters.

Additional archaeological test excavations were undertaken at the Speelyai Creek site, and cultural materials were found up to a depth of 80 cm below the surface. Artifact densities throughout the site were low, and the density of debitage per cubic meter exceeded 300 pieces in only one 10-cm level. The recovered assemblage was limited to flaked stone artifacts – no features, ground stone tools, or faunal remains were discovered. O'Neill did not make any formal recommendations regarding the site's eligibility for inclusion in the National Register.

The other archaeological site, an extensive scatter of debitage and cobble tools in the Buncombe Hollow area on the south side of Lake Merwin, was not subject to any test excavations, and no recommendations regarding its eligibility were presented in O'Neill's report. The six isolated finds consisted of nine or fewer flaked stone artifacts, all of which were on the north side of the reservoir.

O'Neill also conducted a brief survey of a historic-period cemetery with Native American burials in the Woodland Park area. Despite the fact that the burials were removed prior to the construction of the reservoir, O'Neill found evidence of disturbance. Graves had been excavated into the compact conglomerate that forms a (usually submerged) low mound to the south of Woodland Park. O'Neill noticed evidence of some unauthorized probing that had exposed wooden grave liners. No aboriginal cultural material was located in this area (O'Neill 1991:32).

5.3.1.2 Relicensing Archaeological Studies

Archaeological activities related to relicensing of the Lewis River Hydroelectric Projects began in 1996. The archaeological studies were conducted in three separate surveys, each centered around one of the three dams and associated reservoirs, which identified a total of 35 sites (12 historic and 23 prehistoric). The research was designed to inventory the archaeological resources and to provide a basis for determining which of the archaeological resources were potentially eligible for listing in the National Register. The research was designed in consultation with representatives of state and federal agencies, the Yakama Nation, and the Cowlitz Tribe.

In 1996, Heritage Research Associates conducted a survey of the drawdown zone and portions of the surrounding APE of the Yale Reservoir. Exposed areas of the draw-down zone that could be safely walked upon were surveyed by teams of archaeologists using transects spaced 30 meters apart, following the contour of the shoreline. For the surrounding APE, a survey was conducted, using 30 meter transects, of 1,100 of the 1,225 acres, excluding only areas with a slope greater than 30 percent. The survey included 225 additional acres following the 11-mile long Merwin-Yale 115 kV transmission line right-of-way. The 50-meter-wide path was surveyed by two people walking parallel transects on each side of the transmission line (PacifiCorp 1999).

Heritage's efforts located eight prehistoric sites (45CW101, 45CW102, 45CW103, 45CW104, 45CW105, 45CW106, 45CW468, 45CW469), five historic-period sites (H-1, H-2, H-3, H-4, H-5), and nine isolated finds (ISO-1, ISO-2, ISO-3, ISO-4, ISO-P4/1, ISO-P4/2, ISO-P4/3, TL-1, TL-2). The prehistoric sites and isolates consisted mostly of lithic debitage and formed tools. Five of the sites contained ground stone tools, and one of the sites (45CW102) may have contained a pithouse. Historic-period features included a ditch, trash scatter, road grades, and a house/cellar site (PacifiCorp 1999).

In 1998, PacifiCorp contracted with Historical Research Associates, Inc. to conduct archaeological resource inventories along the APE for Swift Reservoir. During the fall of 1998, field personnel surveyed approximately 900 of the 1,200 acres in the APE. Field teams consisted of two or three individuals; each team walked parallel transects spaced 20 meters apart that followed below the draw-down water level (approximately 950-foot pool elevation). In steep or extremely rocky portions of the survey area, the field crews extended transect intervals to 30 meters. This work defined a *site* as a cultural deposit exhibiting a density of five or more artifacts per 10-square-meters; cultural deposits not meeting this criterion were defined as *isolates*. As a result of the inventory, two archaeological sites and 9 isolated finds were recorded. Subsurface testing was performed at one of the sites, 45SA449, however, no subsurface testing was performed at 45SA448 due to the difficulty of access with the necessary field equipment (Goetz et al. 2003). The archaeologists also surveyed a number of recreation sites along the Swift Reservoir in the fall of 1999, locating one more isolate.

Historical Research Associates, Inc., and Wessen & Associates conducted the Lake Merwin archaeological inventory. A research design was prepared in the summer of 1999 (Wessen and Hess 1999), and the fieldwork was conducted in the fall. The survey was scheduled to coincide with an unusually low drawdown of the reservoir, which provided a unique opportunity for study. For the survey, the primary APE area was divided into three probability classes, based upon the landform type. There were about 86 acres of High potential lands, 431 acres of Moderate potential lands, and 204 acres of Low potential lands. The inventory plan called for surveying 100 percent of the High potential lands, 100 percent of the Moderate potential lands, and 10 percent of the Low potential lands. This coverage formula was selected to be broadly compatible with that used by National Forests near the Project area. This resulted in the survey of 537 acres, or 74.4% of the Merwin primary APE. For the purposes of this study, a site was

considered to consist of a minimum of 10 archaeological objects within a 10-m diameter area. Isolated objects that were less than 30 m from a site were included with the site rather than treated as separate phenomena. Objects encountered at lower densities were considered to be isolates. The work identified 20 (7 historic, 13 prehistoric) archaeological sites. Some of these sites were then investigated further with limited test excavations to obtain information about their contents, internal structure, and condition (HRA 2003).

5.3.2 Historical Buildings and Structures Studies

Studies evaluated the historical significance of the Swift No.1, Yale, and Merwin Hydroelectric Projects, as well as the associated Lewis River and Speelyai fish hatcheries, various recreational facilities, and bridges. The evaluations began with a review of research materials documenting the history of these hydroelectric projects, followed by field personnel conducting surveys in 1996, 1999, and 2000. The historical resource work also included Cowlitz PUD's Swift No. 2 Project, which is not discussed here.

Historical Research Associates conducted field surveys in 2000 to identify historical buildings and structures within the Swift No. 1 Hydroelectric Project area (HRA 2002a). The inventory identified several buildings and structures, including the dam, reservoir, penstocks, powerhouse, and transmission lines.

In 1997, Heritage Research Associates conducted an inventory of the Yale Hydroelectric Project historical buildings and structures, including the main dam, saddle dam, reservoir, spillway, powerhouse, diversion tunnel, intake structure, penstocks, and transmission lines. Auxiliary facilities located nearby include company housing and a warehouse (PacifiCorp 1999).

Historical Research Associates conducted an inventory of the Merwin Hydroelectric Project during 1999 and 2000 (HRA 2002a), identifying several historical buildings and structures including the dam, reservoir, powerhouse, control house, transmission lines, and a worker-housing village. Other associated buildings and structures included the Lewis River and Speelyai fish hatcheries, Merwin Park Comfort Station, Beaver Bay Campground Comfort Station, and Cougar Campground Comfort Station. Five bridges included the State Route 503 Bridge, International Paper Bridge, Forest Service Road 90 Bridge, Swift No. 2 Power Canal Bridge, and the Ariel Powerhouse Access Bridge.

5.3.3 Traditional Cultural Properties Studies

Traditional cultural property (TCP) studies include initial investigations by Stephen Dow Beckham, who worked with the Cowlitz Tribe, and Robert Winthrop, who worked with the Yakama Nation (HRA 2002b;PacifiCorp 1999). The TCP studies adopted primary and secondary APEs, with the primary APE consisting of the North Fork of the Lewis River from its mouth to the headwaters, its tributaries, and lands lying within one mile of the river channels. Within the primary APE, the investigation emphasized the locations

of four hydroelectric projects. The secondary APE provided a regional context for the TCP study, stretching from the Cowlitz River on the north, to Mt. Adams on the east, and to the Columbia River on south and west. Other studies of traditional cultural properties were conducted in the Lewis River area, both for the hydroelectric projects and for other purposes such as management of the Gifford Pinchot National Forest.

The Cowlitz Indian Tribe and Yakama Nation were extensively involved in the cultural resource work for relicensing the hydroelectric projects (HRA 2002b). They identified important traditional cultural resources as include native fish, vegetation, and wildlife. Project work and communications from 1996 to 2002 revealed some general place names or traditional cultural properties, but the information is not specific enough to prepare inventory forms or to warrant particular treatment or management. It is possible that the lack of data reflects the loss of this type of information since the time when early Euroamerican contact in the lower Columbia River region brought deadly diseases and disrupted traditional Indian activities in the area. Regardless of the reason, the tribes consider information on traditional places and activities to be private and confidential. Fearing the disturbance of archaeological sites, burials, and resources such as native vegetation, tribal representatives are uncomfortable about documenting this information in detail and sharing it (HRA 2002b). They recommended that management measures include consulting them about developments undertaken during the period of the new licensing, as is discussed in Section 8.1.

6.0 CULTURAL RESOURCES

The inventory of cultural resources in the Lewis River Hydroelectric Project area considered archaeological sites, historical buildings and structures, and traditional cultural properties, which were evaluated for eligibility in the National Register.

6.1 NATIONAL REGISTER OF HISTORIC PLACES

Determining which Lewis River Hydroelectric Project cultural resources are eligible for listing in the National Register of Historic Places (National Register) was an important part of the relicensing studies. Federal guidelines for National Register eligibility (36CFR 60.4) provide the criteria for listing:

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

- A. That are associated with events that have had a significant contribution to the broad patterns in 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 represents 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.

The Project team employed two parallel approaches to determine which of the Project area’s cultural resources appeared to be eligible for listing. One approach was for archaeologists and historians to identify and evaluate cultural resources on the basis of scientific, design/construction, and historical value (National Register criteria A-D). The second approach was to invite the Cowlitz Indian Tribe and Yakama Nation to offer their views regarding which cultural resources appear to be eligible for listing on the basis of cultural heritage value. During Cultural Resource Work Group meetings for relicensing the projects, representatives of the Yakama Nation and Cowlitz Indian Tribe expressed their views that all of the prehistoric sites hold cultural heritage value to them (National Register criterion A).

6.2 ARCHAEOLOGICAL SITES

The work documented that archaeological sites are a common type of cultural resource within the Lewis River Hydroelectric Project area. Forty-five sites identified in the Project area through previous and relicensing archaeological studies, as well as 72 isolated finds. Swift Reservoir contains 5 sites (3 inundated, 2 in the drawdown zone); Yale Lake contains 16 sites (3 inundated, 13 in the drawdown zone); and Lake Merwin contains 23 sites (none inundated, 23 in the drawdown zone). Table 6.2-1 lists the sites that are the subject of this Plan.

Table 6.2-1 Archaeological Inventory Results

Site	Site Type	NHRP Eligibility	Cultural Heritage Significance
Swift Reservoir			
45SA448	Lithic Scatter	Unevaluated	Yes
45SA449	Lithic Scatter	Not Eligible	Yes
Yale Reservoir			
45CW101	Lithic Scatter	Eligible	Yes
45CW102	Lithic Scatter	Eligible	Yes
45CW103	Lithic Scatter	Eligible	Yes
45CW104	Lithic Scatter	Not Eligible	Yes
45CW105	Lithic Scatter	Eligible	Yes
45CW106	Lithic Scatter	Eligible	Yes
45CL468	Lithic Scatter	Not Eligible	Yes
45CL469	Lithic Scatter	Not Eligible	Yes
H-1	Trash Scatter	Not Eligible	No
H-2	Road Grade	Not Eligible	No
H-3	Raised Grade	Not Eligible	No
H-4	Ditch	Not Eligible	No
H-5	House/Cellar Site	Not Eligible	No

Table 6.2-1 Archaeological Inventory Results (continued)

Site	Site Type	NHRP Eligibility	Cultural Heritage Significance
Merwin Reservoir			
45CW100	Lithic Scatter	Eligible	Yes
45CW107	Lithic Scatter	Not Eligible	Yes
45CW108	Historic Cemetery	Eligible	Yes
45CW109	Historic Debris	Not Eligible	No
45CW110	Lithic Scatter	Not Eligible	Yes
45CW111	Lithic Scatter	Eligible	Yes
45CW112	Lithic Scatter	Not Eligible	Yes
45CW113	Lithic Scatter	Not Eligible	Yes
45CW114	Rail Road Grade	Not Eligible	No
45CW115	Lithic Scatter	Not Eligible	Yes
45CW116	Lithic Scatter	Eligible	Yes
45CW117	Lithic Scatter	Not Eligible	Yes
45CW118/119	Lithic Scatter	Eligible	Yes
45CW120	Lithic Scatter	Not Eligible	Yes
45CL403	Lithic Scatter	Not Eligible	Yes
45CL516	Lithic Scatter	Not Eligible	Yes
45CL517	Lithic Scatter	Not Eligible	Yes
45CL518	Lithic Scatter	Not Eligible	Yes
45CL519	Lithic Scatter	Eligible	Yes
45CL520	Historic Camp	Not Eligible	No
45CW121	Historic Scatter/Dump	Not Eligible	No
45CW122	Abandoned Orchard	Not Eligible	No
45CW123	Historic Scatter	Not Eligible	No

More sites are prehistoric than historic-period, reflecting the long-term prehistoric occupation of the area. Most of the sites have been affected by some combination of disturbance mechanisms, including erosion, animal burrowing, land clearing, motorized vehicle traffic, and vandalism, which have occurred both before and after the development of the hydroelectric facilities. Despite this range of impacts, studies undertaken as a part of the relicensing process indicate that potentially scientifically important cultural deposits are present in several of the sites.

Most of the prehistoric sites in the Project Area are lithic sites. The most abundant cultural materials are pieces of chipped stone debitage (i.e., the waste flakes produced as a bi-product of manufacturing and/or maintaining stone tools) and large flaked cobbles. Smaller chipped stone formed tools such as projectile points, knives, and scrapers are also present at many of the sites, but they occur in much smaller numbers. Organic cultural materials are not common, but some sites are known to contain small quantities of charcoal and burned animal bone.

Study of the contents and distribution of the prehistoric sites indicates the presence of several different site types. Most common are sites that appear to represent relatively recent late prehistoric settlements. These sites are almost always located close to the historic Lewis River channel or its larger tributary streams. They contain abundant evidence of the use and re-sharpening of stone tools, as well as small projectile points representing bows and arrows, and various kinds of cutting and scraping tools.

Radiocarbon dates indicate that these sites are usually less than 2,000 years old and it is likely that they represent the direct ancestors of the Project area's early historic Native American population. There are also at least two sites that contain evidence of pithouses, including one with an associated cairn with human remains, though this site has been inundated by the reservoir.

The Project Area also contains numerous sites that appear to represent locations where a relatively limited range of activities occurred. Rather than settlement, these sites probably are locations where particular resources were obtained or processed. As compared to the late prehistoric settlements described earlier, these sites tend to be smaller and to contain a much more limited range of cultural materials. Often they are located some distance from the Lewis River or the larger tributary channels. Relatively little is known about the ages of these sites and it is possible that they may represent a considerable span of time. Some appear to be very ancient while others may be associated with the occupants of the late prehistoric settlements.

The 15 historic-period archaeological sites in the Project Area represent a wide range of activities and uses, including logging, agriculture, settlements, and transportation. The three historic sites near the Swift Reservoir were covered by the reservoir. Two were basket ferry crossings, and the third was a 1935 trail shelter. The five historic sites recorded in the vicinity of Yale Reservoir include a trash scatter, two raised grades, a 100-meter-long excavated ditch, and a possible house or cellar depression (PacifiCorp 1999). Around Merwin Reservoir, the seven historic sites include an abandoned cemetery, a railroad grade, a dead orchard, and several artifact scatters associated with homes or refuse disposal.

In Swift Reservoir, the limited number and diversity of cultural materials at 45SA449, along with the apparent lack of an extensive subsurface component, suggest that the site is not eligible for listing in the National Register on the basis of archaeological information value (Criterion D). At the other site, 45SA448, field personnel noted debitage, bifaces, a uniface, and a leaf-shaped projectile point on the surface. At present, the site remains unevaluated for eligibility for listing in the National Register. Subsurface testing will be necessary to determine the depth and integrity of the site, should it become necessary to evaluate its significance (Goetz et al. 2003).

After the archaeological survey of Yale Lake, the archaeologists recommended that five of the prehistoric sites (45CW101, 45CW102, 45CW103, 45CW105, 45CW106) be considered eligible for inclusion in the National Register. The other three prehistoric sites, the five historic sites, and the nine isolated finds were deemed not eligible to the National Register (PacifiCorp 1999).

The Lake Merwin study recommended that six of the sites were eligible for the National Register. One of these sites, 45CW108, is a historic cemetery and was considered to be eligible as a heritage site, under Criterion A. The other five sites (45CW100, 45CW111, 45CW116, 45CW118, 45CL519) were prehistoric and considered to be significant under Criterion D, as sites likely to provide information about a regional research theme.

The archaeological studies conducted for this relicensing (Goetz et al. 2003; HRA 2003; PacifiCorp 1999) suggest that at least 11 archaeological sites within the Lewis River Hydroelectric Project area are eligible for listing in the National Register. Ten of these are prehistoric sites, and one is an abandoned historic Euroamerican/Native American cemetery. The cemetery is considered to be eligible as a heritage site, under Criterion A, while the other 10 sites are considered eligible under Criterion D, as important research resources.

During Cultural Resource Workgroup meetings for project relicensing, representatives of the Yakama Nation and Cowlitz Indian Tribe expressed their views that all of the prehistoric archaeological sites hold cultural heritage value (Criterion A). Therefore, HRA recommends that the sites be treated as National Register-eligible unless or until Project effects on them make it necessary for a formal determination of eligibility for the resolution of adverse effects.

6.3 HISTORICAL BUILDINGS AND STRUCTURES

To determine the eligibility of the historical buildings and structures, historians compared the Projects' components with their original descriptions, maps, plans, and photographs, as well as conducting interviews with PacifiCorp and Cowlitz PUD employees. As a result of this research, the historians recommended that the Swift Dam and the Swift No. 1 Powerhouse be considered eligible for the National Register under Criteria A and C. The historic district boundaries include the buildings and structures built in association with power generation at Swift No.1, including the Swift Dam, and the Swift No. 1 Powerhouse and penstocks (HRA 2002a).

A study of the Yale Hydroelectric Project concluded that it no longer retained significant integrity to be eligible for National Register listing (PacifiCorp 1999).

The Merwin Hydroelectric Project is considered to be eligible for listing in the National Register under Criteria A and C as the "Ariel Dam Historic District", which reflects its original name. The Historic District boundaries include resources built in association with the dam and have retained their integrity. These include the Dam and Water Conveyance Systems, the Powerhouse, and the Control House. Ariel Village, the employee housing compound, is included in the Historic District, but only under Criterion A (HRA 2002a).

Several other resources, including the Lewis River Fish Hatchery, Speelyai Fish Hatchery, Merwin Park Comfort Station, and the Beaver Bay and Cougar Campground comfort stations, located on Yale Reservoir, were evaluated as ineligible. The same is true for several bridges including the State Highway 503 Bridge, the IP Bridge, and the Forest Service Road 90 Bridge (HRA 2002a).

6.4 TRADITIONAL CULTURAL PROPERTIES

Background research and numerous meetings with Cowlitz and Yakama tribal representatives identified no specific locations in the Project Area as traditional cultural places (HRA 2002b). The lack of inventoried traditional cultural places means that none are eligible for listing in the National Register; however, the archaeological sites hold traditional cultural value for the Cowlitz Tribe and Yakama Nation. According to this perspective, all of the non-Euroamerican archaeological sites would qualify for listing in the National Register.

The native resources such as fish, vegetation, and wildlife also hold traditional cultural value for both tribal groups (HRA 2002b). The reader should note, however, that unless the tribes identify specific, bounded locations of such traditionally important resources, it is not possible to determine their eligibility for listing in the National Register and to manage them as cultural resources. The regulations regarding cultural resources necessitate the identification of specific places associated with traditional activities or beliefs (Parker and King 1990).

7.0 IMPACTS ON HISTORIC PROPERTIES

Impacts can adversely affect archaeological and historical properties in the Lewis River Hydroelectric Project area.

7.1 IMPACTS ON ARCHAEOLOGICAL PROPERTIES

Impacts on archaeological sites include erosion, motorized vehicle traffic, vandalism, and Project developments. The first two are largely restricted to the reservoir drawdown zones, while the latter two can affect sites anywhere in the Project area.

7.1.1 Erosion

Erosion is particularly apparent in the drawdown zones of the Project reservoirs. Each of the reservoirs has an annual water level fluctuation regime, which results in the seasonal exposure of shoreline areas. Each drawdown zone has extensive eroded areas. When considering erosion in these zones, it is important to note that the sediment transport process is not the only form of erosion occurring. Sediment deposition is occurring in some portions of the drawdown zones, but is largely confined to the deltas of major streams entering the reservoirs. This is especially true in Swift Reservoir, which continues to receive sediments from the 1980 eruption of Mount St. Helens. With this exception, erosion is the dominant process in the other areas where transportable sediments are present.

Several mechanisms contribute to the loss of sediments in reservoir drawdown zones. Wave energy is undoubtedly the single largest factor moving sediments, and windblown waves are dominant erosional force on the shorelines. Wave erosion occurs mostly near the water's edge and, as the pool level fluctuates, this effect moves back and forth across

the drawdown zone. Other mechanisms that can remove sediments from exposed shorelines include rain and surface runoff, wind, frost heave, and human disturbances such as off-road vehicle trespassing. These mechanisms are most effective at removing fine sediments (i.e., sands, silts, and clays), although larger waves associated with storms probably move gravel-sized particles as well.

Erosion tends to have a winnowing effect, removing the finer sediments while leaving a lag of coarser gravel and cobbles. Ultimately, this coarser lag develops into an armored surface that is much less susceptible to erosion; such lag deposits can be seen in many parts of the Lewis River reservoir drawdown zones. The extent of erosion necessary to create such deposits varies as a function of local soil conditions, but pedestalled tree stumps throughout the reservoir suggest that at least 20-40 cm of sediment have eroded away in many places.

The consequences of this erosion for archaeological sites can be devastating. Since most archaeological sites consist of cultural materials in a matrix of relatively fine sediments, erosion destroys the matrix of the archaeological deposit. Stratigraphic relationships and other internal structures collapse, compromising the integrity of the cultural deposit. Many of the cultural materials are heavy enough that they remain in the site area as the lag develops, but it is no longer possible for archaeologists to reconstruct their original context, greatly reducing the analytical value of such materials. In addition, small cultural materials are likely to be transported away from the site area and lost.

7.1.2 Motorized-Vehicle Traffic

Motorized-vehicle traffic in the drawdown zones of the reservoirs does not appear to be widespread, but it does occur in some areas. Although no formal studies have characterized vehicle traffic in the Project area, observations made during archaeological field efforts and consultation with Lewis River Hydroelectric Project staff provided useful information.

Motorized-vehicle traffic in the Project area includes activity by four-wheel-drive automobiles, and three- and four-wheel all-terrain vehicles. Different portions of the drawdown zones present different access constraints, thus vehicle activity varies considerably within the area. Vehicle activity is most pronounced in areas where roads, particularly the IP Road (on the east side of Yale Lake) and west of the Speelyai Canal, are located close to a reservoir's margin. Areas with relatively greater motorized vehicle traffic include the vicinities of Woodland Park and Buncombe Hollow on Lake Merwin; the reservoir bed east of Cougar Campground on Yale Lake; and the Northwoods community on the Swift Reservoir. It appears that many of the drivers are local or county residents, who enter the drawdown zones of the reservoirs for recreational driving. Observations on the east shoreline of Yale, where the majority of this use occurs, confirm that most of the trespassers are off-road driving enthusiasts.

Motorized-vehicle traffic is destructive to archaeological resources in a variety of ways. Most directly, vehicles driving over archaeological sites can physically break exposed

artifacts. If the ground is wet when this occurs – a common condition during the winter – vehicles will frequently form ruts or troughs that can disturb near-surface cultural deposits and accelerate erosion in the area. Both results degrade the stratigraphic integrity of archaeological sites.

7.1.3 Artifact Collecting

Vandalism to archaeological resources occurs in the Project area, but only anecdotal information is available about its frequency and extent. Knowledge of this vandalism comes from observations made during the archaeological fieldwork, from other archaeological reports, and from discussions with Lewis River Hydroelectric Project staff and the Gifford Pinchot National Forest archaeologist. Given the limited nature of these sources, it is safe to assume that an unknown number of unreported episodes have also occurred.

The sources provide information on at least 11 episodes of archaeological vandalism in the Project area. While a few of these episodes happened decades ago, most have probably occurred within the last 10 to 15 years. The episodes range from what appears to be casual surface collecting to large scale digging and screening. Some degree of ground disturbance is indicated in at least six of the 11 episodes. Surface collecting appears to be confined to the reservoir drawdown zones, while digging has occurred both within and adjacent to the reservoirs. Episodes of vandalism have been reported in various portions of the Project area, but they are most numerous in the vicinity of Lake Merwin and become less frequent as one proceeds further up the valley. Such a pattern could reflect the apparently greater numbers of archaeological sites in the lower part of the valley and its greater proximity to contemporary population centers. Alternatively, it could be argued that vandalism may be occurring at more-or-less equal levels throughout the Project area, but that greater numbers of visitors in the lower valley make evidence of it more noticeable.

Unauthorized digging or the collection and removal of artifacts from archaeological deposits is a destructive and illegal activity. Such digging destroys the stratigraphic integrity of the sites and accelerates their erosion. The loss (i.e., theft) of artifacts from archaeological sites significantly reduces the archaeologist's ability to study the past. Even when artifact collectors make their materials available to archaeologists, the analytical potential of these objects is seriously degraded once their context is lost. Beyond scientific considerations, it is also important to stress that prehistoric archaeological sites have important heritage value to the region's Native American population, and vandalism to these places constitutes acts of desecration that can bring great pain to Indian people.

7.1.4 Project Developments

Ground-disturbing activities can damage or destroy historic properties. While Project facilities are already in place, future improvements and additions to these facilities (e.g., recreational developments, wildlife enhancements, or road building) may have

consequences for historic properties. Ground-disturbing developments can impact archaeological resources much like those noted above for motorized-vehicle traffic. Depending upon their specific character, such actions can both physically break artifacts and destroy the stratigraphic integrity of cultural deposits. Some types of activities may even result in the inadvertent removal or burial of archaeological materials. In effect, amounting to unauthorized digging and contrary to state law.

7.2 HISTORICAL PROPERTIES

The routine maintenance, operation, and improvement actions that will occur during the next license period have the potential to affect historic properties. Although all possible actions that might occur over the term of a new license (generally 30 to 50 years) cannot be known at this time, several types of actions can affect the historic properties:

Routine Maintenance and Repairs: This category includes routine procedures, such as cleaning, painting, caulking, and repair work that replaces damaged features with in-kind materials.

Alterations to Buildings, Structures, and Sites: This category includes modifications of, or additions to, buildings, structures, or sites as a result of use, modernization, operational requirements, or technological advances. This category includes replacement of features with unlike materials.

Isolation from, or Alteration of, the Property's Surrounding Environment: This category includes changes and additions to (or subtractions from) the physical setting of the buildings.

Introduction of Elements Out of Character with the Property or its Setting: This category includes changes to characteristic features of the larger area that have the potential to affect the setting of the property.

Neglect of a Property Resulting in Deterioration or Destruction

Transfer or Sale of the Property Without Preservation Conditions

8.0 MANAGEMENT MEASURES

As stated in the introduction, PacifiCorp values the ethnic diversity and historical perspective represented in the Project's historic resources and cultural resources found on Company lands. The Company is committed to exercising good stewardship over these resources by following applicable federal, state, and local laws and regulations in consultation with oversight agencies, affected Indian tribes, and community groups. These actions are consistent with PacifiCorp's responsibilities to its customers and to the natural and cultural resources it must manage as part of ongoing operations.

The management measures discussed below are intended to ensure collaborative efforts with the agencies, government-to-government relations with the Indian tribes, and a policy that emphasizes historic properties protection, stewardship, and education. Management measures for native fish, vegetation, and wildlife resources, which have traditional cultural importance, are discussed in the Project's Draft Environmental Assessment (PacifiCorp and Cowlitz PUD 2004).

8.1 CONSULTATION WITH TRIBES AND OVERSIGHT AGENCIES

PacifiCorp will manage historic properties in the Project area in a spirit of partnership with the Cowlitz Tribe, the Yakama Nation, and the Washington SHPO. The Gifford Pinchot National Forest will be involved when forestlands are involved. Management measures address the impacts identified in Section 7.0, as well as such long-term issues as monitoring, project developments, archaeological site protection and data recovery, curation, operations and maintenance, and education.

PacifiCorp will contact representatives of the Cowlitz Indian Tribe and Yakama Indian Nation each year to discuss the status of historic properties management at the Projects, plans for management activities during the upcoming period, and potential future modification of management measures. PacifiCorp will provide information on the dates of planned historic properties management activities at the Projects so that Cowlitz and/or Yakama representatives may participate in or visit the work as desired. PacifiCorp will work with the Tribes to discuss the desirability of nominating to the National Register those Project historic properties of interest to the Tribes that meet the criteria for listing.

During this yearly update any upcoming ground disturbing activities for maintenance, operations or project improvements will be discussed and the tribes consulted. PacifiCorp will also consult with oversight agencies, including the OAHP, the FERC, and the Gifford Pinchot National Forest (for work affecting its land) as required by regulation. Certain activities will be categorical exclusions from cultural resource review such as routine maintenance actions that do not involve land-disturbing activities.

8.2 PROJECT CULTURAL RESOURCE COORDINATOR

PacifiCorp will manage cultural resources on the Project in compliance with applicable FERC and other federal and state cultural resource laws and regulations. To this end, PacifiCorp will appoint or hire a staff member as the Project's Cultural Resources Coordinator (CRC) within one month after acceptance of the new Project license and as needed after that, if the position is vacated. This position will be responsible for administering the HPMP.

The employee who holds the position will have, or be required and supported in acquiring, some expertise in cultural resources management. PacifiCorp will provide the staff member with access to periodic training in federal and state cultural resource workshops that address issues related to the Project's compliance with applicable cultural resource laws and regulations. These include Section 106 of the National Historic

Preservation Act, anti-vandalism procedures (such as covered in Archaeological Resource Protection Act training), and the application of new technologies in cultural resource management. PacifiCorp will support the Coordinator in attending relevant cultural resource management conferences.

PacifiCorp will protect information on archaeological sites from public disclosure (National Historic Preservation Act of 1966, as amended). The company will share this information with OAHP (and Gifford Pinchot National Forest for its land), the Cowlitz Indian Tribe, and the Yakama Nation. PacifiCorp also respects the Indian tribes' concern for the confidentiality of information about traditional cultural properties and does not disclose publicly any information it may possess. PacifiCorp also does not disclose to the public any information related to Indian burials or remains.

PacifiCorp is willing to enter into data sharing agreements for transfer of electronic data with the tribes concerning the location of cultural resource sites. Because the public release of electronic versions of this information could confound PacifiCorp's attempts to protect these resources and limit undesirable behavior PacifiCorp may require proof that the electronic map information can be adequately protected on tribal GIS systems before releasing GIS information.

8.3 INDIAN TRIBAL CONCERNS

PacifiCorp is committed to working with the Cowlitz Tribe and Yakama Nation on their concerns for curating artifacts and documentation (see Section 8.4.7 below) and on issues of repatriation that might arise. The company will discuss its policy with tribal representatives during consultation meetings.

Cowlitz Tribe and Yakama Nation members may gather native plants for traditional cultural subsistence and ceremonial purposes on Project lands, consistent with any applicable laws and regulations, Company security, safety policies and the management of other project resources. Resources available for gathering are characterized as minor forest products including, roots, berries and other food stuffs. Materials will be gathered in a non-destructive and non-depletive manner for non-commercial uses. Removal of tree bark in a manner that exposes the cambium layer of trees is not an allowed activity. PacifiCorp's policy is for respectful treatment of tribal resource gatherers. The company requires that gatherers check in at the Merwin Headquarters office and coordinate their activities with the CRC. Check in and coordination is important, so that patrol personnel will be able to recognize tribal members and their vehicles and know that their activities are legitimate on project lands.

PacifiCorp will arrange for representatives of the Yakama Nation (and Cowlitz Indian Tribe, if they desire) and archaeologists visit the Lone Pine Cemetery Site to determine whether they believe that human remains are still present and if additional archaeological work should be conducted. This will occur as soon as feasible after the new license is accepted. Merwin Reservoir is not drawdown annually so during the first drawdown for

maintenance or other reason that exposes the cemetery the site reconnaissance will be conducted.

8.4 ARCHAEOLOGICAL RESOURCES

8.4.1 Monitoring Plan

This Monitoring Plan provides for regularly checking the condition of recorded archaeological sites and patrols to discourage vandalism within and outside the drawdown zones, as well as areas of erosion where unrecorded sites might become exposed.

8.4.2 Enforcement Patrolling and Site Inspections to Minimize Unauthorized Artifact Collecting

PacifiCorp will take steps to minimize artifact collecting activity as part of its overall program to control undesirable behavior on company lands. Undesirable behavior includes being present in archaeologically sensitive areas for no apparent reason, walking patterns and bending to examine or collect materials from the surface, digging, vandalism, and operation of motor vehicles in the drawdown zone. The enforcement patrolling also will allow archaeologists to monitor the erosion condition of recorded archaeological sites and to visit areas of new erosion to check for newly exposed sites.

This program will include periodic patrols with individuals trained about historic properties and other resources, such as ferns, moss, and bear grass that are important to the tribes. Patrols will include those times and locations where artifact collectors are most likely to be encountered. For example, patrolling will occur when the reservoir drawdown zones are exposed (i.e., during the winter months) and will be most active during intervals of better weather. Under normal drawdown conditions, patrolling will emphasize the vicinity of Speelyai Bay and Cresap Bay Park on Lake Merwin and at other locations where artifact collectors appear to be active. In an unusually low drawdown, especially during the recreation season, PacifiCorp will increase patrols by operations staff and Sheriff's deputies.

Patrollers will educate users of Project lands and facilities about policy and regulations related to cultural resources, plants, fish, wildlife, and other resources. Patrollers will note information about artifact collecting activities and call law enforcement officers as needed to deal with users that break laws. They will collect evidence as needed in order to initiate prosecutions against those who violate laws. PacifiCorp also will request that the county and state law enforcement and fish/wildlife officers become familiar with and enforce cultural resource laws, and will provide informative materials to assist in familiarization. Finally, PacifiCorp will encourage members of the public to report vandalism of cultural resources. Recreation signs and brochures will include the Lewis River Project (Merwin Headquarters) office telephone number and will also encourage reporting through the Project's worldwide web site.

If the PacifiCorp CRC identifies significant damage to an archaeological site, such as that caused by excavations, the CRC will consult with OAHF and the tribes to prepare a damage assessment and site restoration plan. Information from patrols and winter inspections of archaeological sites will determine the need to change the patrolling procedures.

8.4.2.1 Roles and Responsibilities

The roles and responsibilities for enforcement patrolling are as follows:

PacifiCorp Cultural Resources Coordinator – Will coordinate training, planning, and scheduling of enforcement patrolling, and will arrange for professional archaeologists when needed.

PacifiCorp Employees – Will perform patrol duties when scheduled; will maintain vigilance about undesirable behavior; if comfortable approaching, will question individuals exhibiting such behavior and ask them to leave; will record vehicle information and descriptions of persons, will call Sheriff personnel as needed to remove recalcitrant or repeat offenders; will report locations of undesirable behavior, of possibly vandalized sites, and of potential archaeological finds to CRC. If they happen upon an area of apparent artifact digging, they will arrange to have the sheriff sent to the site.

Park Hosts – Will maintain vigilance about undesirable behavior; will question individuals exhibiting such behavior, educate them about archaeological site protection, and ask them to leave as needed; will call Sheriff personnel as needed to remove recalcitrant or repeat offenders; will report locations of undesirable behavior, of possibly vandalized sites, and of potential archaeological finds to CRC.

Private Security Personnel – Will conduct driving patrols of the Projects on a 24-hour/7-day per week basis. Will watch over archaeologically sensitive areas identified on maps provided by the CRC; will maintain vigilance about undesirable behavior; will question individuals exhibiting such behavior, educate them about archaeological site protection, and ask them to leave as needed; will call Sheriff personnel as needed to remove recalcitrant or repeat offenders; will report locations of undesirable behavior, of possibly vandalized sites, and of potential archaeological finds to CRC.

Sheriff Personnel – Will be vigilant about illegal artifact collecting when conducting security patrols for the Project; will cite individuals found to be repeatedly engaged in artifact collecting; in coordination with CRC will collect evidence and bring legal charges.

8.4.2.2 Monitoring Patrols and Site Inspections – Outside Drawdown Zones

Monitoring will occur at sites outside the reservoir drawdown zones. These will include 45CW101 and 45CW102 located on a terrace above the river, where illicit digging has occurred in the past, and at sites that straddle the reservoir shorelines, including

45CW118/119 and 45CL519, which are near recreation areas. Monitoring will observe the sites three to four times a year: once during the late fall-winter months, once in the spring before heavy recreational use begins, and once during the summer recreational season between Memorial Day and Labor Day. Monitoring also will occur at sites 45CW104 near Speelyai Canal and 45CL469 near Siouxon Creek; although these sites do not meet the information criterion (D) for the National Register, the Yakama Nation has expressed concern for heritage value and potential effects on the sites.

8.4.2.3 Monitoring Patrols and Site Inspections – in Drawdown Zones

All three reservoirs have different requirements for the start of monitoring patrols and site inspections during drawdowns. These two activities are keyed to drawdown elevations for their start. Monitoring patrols will be conducted to increase Company presence on the reservoir, provide information, observe activity at cultural sites if it is occurring and discourage undesirable behavior if observed. The other is Site Inspections conducted to determine if vandalism is occurring at know sites or if other processes like erosion are damaging sites. Lastly reconnaissance inspections will be performed when drawdowns are conducted beyond depth of previous surveys or areas of recent large-scale erosion or soil disturbance. The three activities and the triggers to start them are discussed in the following text and Table 8.4-1.

Lake Merwin drawdowns occur for specific events such as maintenance and repair, while the Swift and Yale reservoir drawdowns are typically seasonal. Inspections and patrols during non-routine Lake Merwin drawdowns will include the same steps as Swift or Yale outlined below.

PacifiCorp will inform the Cowlitz Tribe and the Yakama Nation about planned inspection and monitoring schedules for annual and non-routine drawdowns and will coordinate with them if the tribes indicate that their representatives desire to, and are available, to participate in patrols and inspections. This notification will also allow the tribes to plan for performing ceremonies at sites during a drawdown, if they wish.

Site Inspections – Will begin when the drawdown elevation listed in Table 8.4-1 is reached. As drawdowns proceed past the listed elevation newly exposed sites will be inspected as part of the weekly drawdown patrols if new sites are exposed. Notice in Table 8.4-1 that at Yale Reservoir monitoring patrols start at a higher elevation than site inspections, at Merwin they start at the same reservoir elevation. The CRC and an archaeologist or trained archaeological technician will inspect recorded sites and obvious newly eroded areas to record information on site condition, and to observe newly exposed unrecorded isolates or sites and record them.

Monitoring Patrols During Drawdowns – PacifiCorp’s CRC will coordinate these weekly monitoring patrols, which will be conducted by boat, vehicle and foot throughout the drawdown season. Monitoring patrols will start when the reservoir elevation reaches the level described in Table 8.4-1. The CRC will attend at least 10 percent of them. Patrol

personnel will have maps of site locations. They will check for undesirable behavior near recorded sites and generally check for damage at sites. Upon noticing undesirable behavior at locations where sites have not been recorded, patrol personnel, if qualified, will stop to see if artifacts or other archaeological materials are evident. Personnel will record their methods and findings during each patrol, and provide that information to the CRC.

Opportunistic Site Reconnaissance -- Will take place within and outside the drawdown zones after larger scale erosion-producing events such as powerful storms. If PacifiCorp patrols identify larger areas of new erosion within culturally sensitive areas or if drawdowns exceed levels of the reservoir previously surveyed, the CRC will arrange for a qualified archaeologist to perform a reconnaissance to observe and record exposures of artifacts or other archaeological materials.

Table 8.4-1. Elevations for start of Monitoring Patrols and Site Inspections.

Reservoir	Elevation at, and below, that monitoring patrols are conducted	Elevation to start conducting Site Inspections
Merwin	235	235
Yale	480	470
Swift	No monitoring patrols	Site J-1 every other year at elevation 970. Site W-1 every other year if drawdown elevation reaches 950

8.4.2.4 Monitoring and Patrols in Habitat Lands

Monitoring also will occur periodically in the archaeologically sensitive portions of the lands managed for habitat after natural large-scale earth disturbing events, such as landslides which may expose unrecorded archaeological sites.

If monitoring activities in any of these areas discover new sites, PacifiCorp will arrange for them to be evaluated for their potential to be listed in the National Register. New sites and previously known sites that are historic properties or of uncertain National Register status, which exhibit substantial erosion changes, will also be evaluated in order to determine if additional management measures are warranted.

8.5 PROTOCOL FOR ARCHAEOLOGICAL EROSION DEPOSITION / STUDY

Within the drawdown zones, PacifiCorp will conduct an archaeological erosion/deposition study at the National Register-eligible (Criterion D) sites. This study is outlined in Appendix A.

At each of the National Register-eligible archaeological sites subject to substantial erosion, archaeologists will install one or more devices to assist in tracking the effects of erosion/deposition. They will investigate the usefulness of the approach outlined here and adopt it or something designed to accomplish the same purpose.

Results of the study will be used to determine if additional protection or mitigation measures are needed to protect cultural resources at these sites.

8.6 CULTURAL AND HISTORIC RESOURCE GENERAL AWARENESS TRAINING

PacifiCorp will arrange for annual training of staff members, private security personnel, county sheriff officers (will make training available to sheriff), and park hosts. As needed, cultural resource training will be provided to construction supervisors or environmental inspectors. Information will include:

- ? Types, nature, and importance of cultural resources
- ? Concerns of the Cowlitz Tribe and Yakama Nation, including the PacifiCorp policy of respectful treatment of tribal members who gather resources at the Project
- ? Damage that can occur from unauthorized collecting, digging, erosion, and construction
- ? Characteristics of undesirable behavior
- ? Locations where undesirable behavior takes place and where unauthorized individuals are not to be present or to linger
- ? What to do upon noticing undesirable behavior
- ? Whom and how to call for help
- ? What to do if you find an artifact or site, or someone reports one to you

8.7 CONTROL OF MOTORIZED -VEHICLE TRAFFIC IN DRAWDOWN AREAS

At the time this HPMP was drafted off-road vehicle use was occurring in the following areas: east shore of Yale Reservoir off the Yale (IP) Road in the drawdown zone and lands adjacent to the reservoir, south of Speelyai Canal in the Yale drawdown zone, Merwin drawdown zone off of the Buncumbe Hollow Road, mid-way along the north-side of Swift Reservoir in the drawdown zone and in the drawdown zone in front of Northwoods Estates at the upstream end of Swift Reservoir.

PacifiCorp will use a variety of methods to deter off-road drivers from entering Company lands. The Company will tailor methods to best suit the current situation. Potential methods could include: closing user created renegade access points that allow four wheel drive vehicles and ATVs access to the drawdown zone. Coordination with sheriff to cite off road users for trespass. Coordination with DNR on Yale Reservoir for control of access through their properties to the east shore of Yale Reservoir. Signing major access

point with the message that motor vehicles are prohibited in the drawdown zone and will be cited for trespassing. Using private security to monitor activity and contact sheriff.

8.8 SIGNING

Will be used if an archaeological site located near a recreation or other use area is threatened with disturbance. A sign will not identify an archaeological site but will contain language similar to the following: "Environmentally Sensitive Area – Please Stay on Trail." Recreation signs and brochures will include the Lewis River Project (Merwin Headquarters) office telephone number and will also encourage public reporting of vandalism through the Project's worldwide web site.

8.9 GROUND DISTURBING ACTIVITIES

PacifiCorp's Cultural Resources Coordinator will review Project developments that involve ground-disturbing activities to determine whether they will affect minimally disturbed soils. The Company will require similar review by third parties who apply for permits to use PacifiCorp's Project lands.

For actions that will disturb soils, including forest management or construction activities, the Cultural Resource Coordinator will arrange for review by an archaeologist meeting the Secretary of Interior's qualifications standards. This review will determine whether a survey is needed. Survey would not be needed, for example, if the area has been adequately surveyed already, or if there is no chance for finding cultural resources based on prior disturbance to the location. This latter situation is expected when projects conducted for routine operation and maintenance involve the replacement of existing facilities such as a utility line, that involve no new soil disturbance. When PacifiCorp and the archaeologist determine that no survey is needed, PacifiCorp will file a letter with SHPO and the Tribes prior to proceeding with the activity, reporting on the project and the reason for not conducting a survey.

If a survey is needed, the archaeologist will design an inventory program taking into consideration the sensitivity model used for the survey of the drawdown zones. That is, the archaeologist will survey 100 percent of high probability areas (e.g., river and secondary streams, margins of other bodies of water, terraces, benches, and saddles), at least 40 percent of moderate probability areas (e.g., ridges and hilltops), and at least 10 percent of low probability areas (e.g., steeply sloping valley walls), unless conditions necessitate a different survey method. PacifiCorp will coordinate with the Forest Archaeologist if the work involves Gifford Pinchot National Forest land. PacifiCorp and the archaeologist will consult with OAHF and the Tribes if the work encounters a cultural resource. PacifiCorp will file a copy of the report on the work with SHPO and the Tribes prior to proceeding with the activity and will continue consultation as needed to plan for evaluation, impact assessment, and treatment of any cultural resources that are discovered.

PacifiCorp’s CRC will review the Lewis River GIS database during the planning stages of any proposed activities to determine if the affected area includes identified cultural resources and to determine the area’s potential for unrecorded cultural resources. The CRC also will review specific activities to assure that cultural resources are taken into consideration and that potential activity effects are determined. This process involves the following steps:

Review Project Description. The first step in managing cultural resources for specific activities is to determine what the proposed project entails and to identify its possible effects on cultural resources. This is accomplished through discussions with project managers and inspection of the cultural resource layer of the Lewis River GIS database. The CRC is responsible for maintaining records that document decision-making and ensuring that cultural resources are assessed during activity planning.

Determination of No Effect. If the proposed project will not involve ground disturbance, modification of vegetation, modification of structures over 50 years old, or permanent changes in access to portions of the Project, the potential for the activity to affect cultural resources is considered slight and planning need not consider cultural resources. The decision to not consider cultural resources must be documented through a standardized checklist that may be rapidly completed by Project personnel. The checklist will be given to the CRC to provide a record of the decision of no effect.

Potential for Affecting Cultural Resources. If the proposed activity is determined to have the potential to affect cultural resources, the CRC will review the cultural resource GIS mapping layer. If this review indicates that cultural resources may be affected by the activity, the CRC will review information on the type of cultural resources present and their National Register status, along with the potential for undiscovered cultural resources. The survey standards to be employed will be determined by evaluating the anticipated level of disturbance associated with the proposed activity and the likelihood that a resource of the kind identified in the GIS would meet NRHP eligibility criteria. Within an activity area, there may be varying levels of potential for eligible resources, as well as different levels of disturbance. Survey procedures will vary accordingly within the activity area. The level of effort for various kinds of resources and various levels of disturbance are presented in Table 8.9-1.

Table 8.9-1. Survey Standards for Areas with Previously-Identified Cultural Resources

		Level of Disturbance		
		Low	Medium	High
Potential for NRHP-Eligible Cultural Resources	Low	None	None	Archaeological Review
	Medium	Archaeological Review	Archaeological Review	Pedestrian Survey
	High	Archaeological Review	Pedestrian Survey with Subsurface Testing as needed	Pedestrian Survey and Subsurface Testing

Low disturbance is considered to be activity that will disturb no more than 10 percent of an activity area’s soil. Disturbance of the humic layer is acceptable, as is soil compaction. Hand planting of seedlings may be one example of a low disturbance activity. Medium disturbance includes activity that will disturb between 10 percent and 30 percent of the activity area’s soil. Again, disturbance of the humic layer and soil compaction are acceptable. Some aspects of an ecological thinning project may fall into the medium disturbance category. High disturbance is associated with activities that affect more than 30 percent of an activity area’s soil, including preparation of landings and grading, and any activity that completely alters the ground surface. Gravel pit expansion would be an example of a high disturbance activity.

As discussed above, the archaeologist will design an inventory program, taking into consideration the sensitivity model used for the survey of the draw-down zones, involving 100 percent of high probability areas (such as river and secondary streams, margins of other bodies of water, terraces, benches, and saddles), at least 40 percent of moderate probability areas (such as ridges and hilltops), and at least 10 percent of low probability areas (such as steeply sloping valley walls), unless conditions necessitate a different survey method. Subsurface testing would consist of digging shovel probes at 20-meter (66-foot) intervals along 20-meter (66-foot) transects. Areas where the ground slope exceeds 25 percent grade (14°) may be investigated less intensively.

The absence of recorded resources in the GIS database does not mean that no cultural resources are located within a specific activity area. The CRC will review proposed activities to determine whether they will occur in areas of high, medium, or low potential for archaeological resources and whether the proposed activity has a high, medium, or low potential for affecting archaeological resources (as discussed above). This evaluation will determine whether cultural resources investigations will be required for a particular activity, and the scope and extent of the investigations. The levels of effort for varying levels of disturbance in areas of undocumented archaeological resources are presented in Table 8.9-2.

Table 8.9-2. Survey Standards for Areas with Undocumented Archaeological Resources

		Level of Disturbance		
		Low	Medium	High
Archaeological Potential	Low	None	None	None
	Medium	None	Archaeological Review	Archaeological Review
	High	Archaeological Review	Pedestrian Survey with Subsurface Testing as Needed	Pedestrian Survey and Subsurface Testing

Using environmental data contained within the Lewis River GIS database, PacifiCorp has developed a model to categorize the areas within the Project. This model utilizes environmental factors, such as slope, distance to water or meadows, and distance to trails, to evaluate the likelihood of past human activity within a given area. In general, areas

that are level and located near streams, lakes, marshes or trails, are more likely to contain archaeological resources than steeply sloped areas distant from water or trails.

Regardless of cultural resource investigations done before work begins, any ground disturbing activity should be done with inspectors or construction supervisors present who have had cultural resource training. Archaeological monitoring of construction will be used when an activity is likely to affect extant subsurface resources. A qualified archaeologist will be present during ground disturbing operations and authorized to halt operations should archaeological material be revealed. Upon halting the operation, the monitor will evaluate the material and assesses its potential significance. If the material is not considered significant the operation is permitted to continue. If the material is considered significant, PacifiCorp will consult with the OAHP, the tribes, and the FERC to develop and implement treatment measures.

The results of the archaeological investigations, including negative findings, will be reported to the tribes and OAHP, and will be added to the Project GIS.

8.10 UNANTICIPATED DISCOVERY PLANS

PacifiCorp has developed Unanticipated Discovery Plans (UDPs) for the identification and treatment of archaeological resources (Appendix B) and human remains (Appendix C) that may be encountered unexpectedly. The remains could be uncovered by erosion, motorized-vehicle traffic, vandalism, or found during the course of ground-disturbing activities for the Project. The UDPs specify consultation with the Tribes and the OAHP, and with the Gifford Pinchot National Forest, if the find occurs on the small amount of Forest Service land located within the Project.

8.11 ARCHAEOLOGICAL PROTECTION AND MITIGATION

Depending upon changing ground conditions and the effectiveness of the above-noted management measures, PacifiCorp may choose to implement measures for site protection or data recovery at selected sites. Sites may become candidates for these actions if the management measures designed to address motorized-vehicle traffic, vandalism, and erosion are not effective. PacifiCorp will consider the relative usefulness and costs of site protection and/or data recovery. Site protection and/or data recovery will be decided upon, planned, and implemented after consultation with the Tribes and the OAHP in order to obtain and address their concerns, recommendations, and review.

Site protection consists of measures taken to bury or armor a site to make it less susceptible to ongoing impacts. Protection measures could include placement of geotextile and armoring to halt or lessen local erosion of sites along reservoir shorelines caused by fluctuating pool levels. Additional hardening archaeological sites against erosion may take the form of a bulkhead (a wooden or concrete wall-like structure), or a revetment (a structure combining filter cloth and graded layers of stones, with smaller stones armored with overlaying larger stones). Either of these methods retains or

prevents land from sliding into the water or protects the landform from further wave damage.

Temporary methods for hardening a landform with lower wave-energy shoreline of a bay may include hay bales staked to the shore, placed end-to-end with occasional gaps, or alternatively, individually placed diagonally to the direction of the prevailing wave surge. Hay bales trap smaller sediment and may encourage shoreline vegetation to re-establish before the hay turns to compost. Used in conjunction with other hardening methods, this may be a cost-effective and environmentally preferred means of protecting sites that require immediate action.

Upland sites affected by recreation, unauthorized artifact collection, and other activities might benefit from soil capping.

PacifiCorp will judge the feasibility of site protection on a case-by-case basis. It will consider the likely protection afforded, the impacts of placing materials to cover the eroding or otherwise impacted edges or horizontal surfaces of a site, and the actual costs of site burial. PacifiCorp will also consider whether archaeological excavations would be needed to further characterize the deposits before they are buried and factor in this cost.

Site protection is generally considered to be more desirable than data recovery because it preserves the site in place. In some cases, however, site protection may not prove to be practical or cost-effective. Data recovery will then become the preferred management measure.

Archaeological data recovery often serves as mitigation in instances where a National Register-listed or eligible site cannot be avoided or preserved. Data recovery seeks to recover the information that the site contains through a controlled archaeological excavation and the analysis of recovered material. The Advisory Council on Historic Preservation has published a *Recommended Approach for Consultation on the Recovery of Significant Information from Archaeological Sites* (64 FR 27085-87, 18 May 1999) that provides guidance on this issue.

Data recovery consists of archaeological excavations on a scale sufficient to document the site in some detail. In those cases where data recovery is judged to be the appropriate management measure, PacifiCorp will retain an archaeologist to conduct the excavations, analyze the recovered materials, and prepare a report. Information from the effort will be distributed to the OAHP, the Tribes, and the general public, as appropriate. The work will begin with the preparation of a research design for the specific site being addressed. The research design will be provided to the Tribes, FERC, and the OAHP for review and comment before action is taken. If any of these measures are needed for sites on Gifford Pinchot National Forest land, PacifiCorp will consult with the Forest Archaeologist.

8.12 CURATION

PacifiCorp has entered into an agreement with the Gifford Pinchot National Forest (GPNF) to cooperatively fund and operate a visitor information center and curation facility in or near the town of Cougar, Washington. This facility is expected to act as the repository for artifacts, photographs, and documents associated with the Lewis River Hydroelectric Projects. The GPNF will operate the facility, but PacifiCorp will retain control and ownership of the artifacts, photographs, and associated documents curated there. If the facility at Cougar is not built, PacifiCorp will retrofit a Project building, such as a company house at Merwin or a shop at Yale, to curate the artifacts and documentation locally.

PacifiCorp is committed to the culturally sensitive curation and display of artifacts, as well as to the associated photographs and documents. PacifiCorp will continue consulting with the Cowlitz Tribe and Yakama Nation, including before creating displays of artifacts, loaning artifacts to other parties, and creating educational materials.

As part of its commitment to the proper care and curation of artifacts, PacifiCorp will cooperate with GPNF to consider federal guidelines for curation as set forth in 36 CFR 79 (Curation of Federally-Owned and Administered Archaeological Collections), including the standards set forth for the functioning of the facilities, curation policies, and operating procedures. The curation standards will be prepared within one year of PacifiCorp acceptance of the new license(s). Such standards include, but are not limited to:

The ability to access, catalog, store, maintain, inventory and conserve the collection on a long-term basis considering professional museum and archival practices. Such practices may include if appropriate to the types of materials stored the use of a temperature and humidity controlled storage environment, acid free paper and boxes, and the appropriate cleaning and preservation techniques for different material types.

Curating the artifacts in a physically secure location that meets fire and safety codes, has an intrusion alert system, emergency management plan, limited key access, and regular inspections.

Making staff and consultants responsible for handling the artifacts, photographs, and documents familiar with the standards specified in Section 79.4h of 36 CFR 79.

Handling, storing, cleaning, conserving and exhibiting the artifacts in a manner that is appropriate to the nature of the material, protecting them from breakage and other deteriorating factors (light, humidity, bugs, fungus, etc.), and preserving data for future research.

Ensuring that paper records, reports, disks, tapes and other forms of data are protected from fire and theft. These items will be duplicated and stored in PacifiCorp's archives as

well as the curation facility. When possible, forms should be made using acid free paper to prolong the life of the documents.

Conducting regularly scheduled inspections and inventories to ensure that artifacts are accounted for and in good shape.

Making the collections available, with a written agreement, to qualified professionals for scientific, educational, or religious purposes. Applications for such use will be reviewed with the Tribes.

8.13 HISTORIC BUILDINGS AND STRUCTURES

8.13.1 Approach

Four distinct, but interrelated, approaches address the treatment of historic buildings and structures: preservation, rehabilitation, restoration, and reconstruction. These approaches are described in detail below, based upon information contained in the *Secretary of the Interior's Standards for the Treatment of Historic Properties*, commonly referred to as the Secretary's Standards.

8.13.1.1 Preservation

Preservation focuses on the maintenance and repair of existing historic materials and retention of a property's form as it has evolved over time. Preservation maintains the existing integrity and character of a historic property by arresting or retarding deterioration caused by natural forces and normal use. It includes both maintenance and stabilization. Maintenance is a systematic activity that mitigates wear and deterioration by protecting the condition of a property. Stabilization entails reestablishing the stability of an unsafe, damaged, or deteriorating property while maintaining its existing character. Preservation does not include extensive replacement and new construction; however, the limited and sensitive upgrading of mechanical, electrical, and plumbing systems, and other code-required work needed to make properties functional is appropriate within a preservation project.

8.13.1.2 Rehabilitation

Rehabilitation is the act or process of making possible an efficient compatible use for a property through a program of repair, alteration, and addition that preserves those portions or features that convey the property's historical, cultural, or architectural values. Rehabilitation may involve major repairs or additions. This technique is applicable, for example, if continued efficient operation necessitates expansion of a powerhouse or changes to the dam or water conveyance system.

8.13.1.3 Restoration

Restoration accurately presents the form, features, and character of a property as it appeared at a specific historic period. It involves removal of features from other periods

and replication of missing features from the restoration period. The limited and sensitive upgrading of mechanical, electrical, and plumbing systems, and other code-required work needed to make properties functional is appropriate within a restoration project. This technique is not applicable to the Project's resources as long as the Project remains in operation, since efficient and economical operation requires that previous changes remain, thus precluding restoration to an earlier, out-dated appearance.

8.13.1.4 Reconstruction

Reconstruction is the process of depicting, by means of new construction, the form, features, and detailing of a non-surviving site, landscape, building, structure, or object for the purpose of replicating its appearance at a specific period of time and in its historic location. This technique is not applicable to the Lewis River Projects while they remain operating hydroelectric facilities.

8.13.1.5 Historic Property Management Philosophy

Preservation is the preferred approach adopted by PacifiCorp at the Lewis River Hydroelectric Projects. The Secretary of the Interior's *Standards for Historic Preservation Projects* (Federal Register, Vol. 48, No. 190, Part IV) outlines preservation standards and procedures, which are presented in Section 8.5.2. These standards are based on the philosophy that actions requiring the least degree of intervention are preferable.

The primary principle upon which the Preservation Standards are based is the desire to maintain and repair historic materials and to retain a property's form as it has evolved over time. The standards recognize that change is integral to the continued operation of the Projects and are designed to accommodate change. PacifiCorp applies the Preservation Standards in a reasonable manner, taking into consideration economic and technical feasibility as well as requirements for overall management of the Projects and its other resources. Application of the Preservation Standards will assure retention of the character-defining features of the Projects' historic properties, while permitting the flexibility required to up-grade facilities and equipment for efficient and economical operation. The standards will guide future actions by PacifiCorp as long as they own and operate the Projects.

8.13.2 Standards

As noted above, "preservation" constitutes the philosophical approach guiding the management of historic properties at the Projects. The Rehabilitation Standards that govern preservation efforts are outlined in detail in this section. These standards are adapted from the Secretary of the Interior's *Standards for Historic Preservation Projects* (Federal Register, Vol. 48, No. 190, Part IV). The standards recognize that change is inherent in an operating hydroelectric facility. PacifiCorp applies the standards in a reasonable manner, taking into consideration economic and technical feasibility as well as the requirements for overall management of the Project and its other resources. A list

of procedures for evaluating and minimizing adverse effects are listed in Appendix D. Through application of these standards, PacifiCorp seeks to maintain the integrity of the projects' National Register-eligible resources while not impeding the safe and efficient production of energy.

1. Retain Appropriate Use. A property shall be used for its historic purpose or placed in a new use that requires minimal change to the defining characteristics of the property, its site, and its environment.
2. Retain Historic Character. The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.
3. Maintain Appropriate Era. Each property shall be recognized as a product of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall be avoided.
4. Retain Historic Changes. Most properties change over time; changes that have acquired historic significance in their own right shall be retained and preserved.
5. Retain Distinctive Features. Distinctive features, finishes, and construction techniques, or examples of craftsmanship that characterize a property, shall be preserved. Character-defining features are described in the historic resource report (HRA 2002a).
6. Repair Historic Features. Deteriorated historic features shall be repaired rather than replaced. Where the extent of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visible qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.
7. Use Appropriate Cleaning Methods. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of buildings and structures, if appropriate, shall use the gentlest means possible.
8. Protect Archaeological Resources. Significant archaeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures must be implemented. Since no surface archaeological materials have been identified at the Projects, no direct action is required. If archaeological resources are discovered in the future, most likely during subsurface activities such as grading or digging, PacifiCorp will notify a trained archaeologist.

9. Alterations To Be Compatible. New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. New work shall be differentiated from the old and shall be compatible with the massing, size, scale of the historic architectural features to protect the historic integrity of the property and its environment.
10. Design Removable Alterations. New additions and adjacent or related new construction shall be undertaken in a manner so that if removed in the future, the essential form and integrity of the historic property and its environment will remain unimpaired.

8.13.1 Review Procedures for Evaluating and Minimizing Adverse Effects on Historic Properties

Various types of undertakings have the potential to affect cultural resources at the projects. Three levels of procedures for evaluating and minimizing adverse effects on resources are defined below: Level 1, Level 2, and Level 3 Review. Each level corresponds to the significance of the proposed action, in terms of the extent of the anticipated changes.

8.13.3.1 Adverse Effects

An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify it for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. The criteria for adverse effect are:

- (i) Physical destruction of or damage to all or part of a property;
- (ii) Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the Secretary's standards for the treatment of historic properties (36 CFR Part 68) and applicable guidelines;
- (iii) Removal of the property from its historic location;
- (iv) Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance;
- (v) Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features;
- (vi) Neglect of a property that causes its deterioration;

- (vii) Transfer, lease, or sale of a property without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance. (36 CFR 800.5)

8.13.3.2 Level 1 Review Procedures

Level 1 Review procedures apply to routine maintenance activities such as cleaning, painting, caulking, and repair work that replaces damaged features with in-kind materials. This category also includes changes and additions to (or subtractions from) the physical setting of the building.

The procedures to be followed for this type of work include:

11. PacifiCorp maintenance and engineering staff shall refer to the character-defining features for affected resources.
12. If the proposed change will not alter a character-defining feature, work proceeds. (see criteria for determining adverse effect above).
13. If the proposed change will alter any character-defining feature, PacifiCorp staff will apply the Project rehabilitation standards presented in Section 8.5.2 of this document to assure that the proposed change will not adversely affect the resource.
14. If no adverse effect will occur, work proceeds.
15. If the proposed change will adversely affect historic property or a character-defining feature of a historic property, PacifiCorp staff will consult pertinent reference material, listed in Appendix D, to identify a sensitive approach for accomplishing the needed improvement. If staff members are able to define a historically sensitive approach that will result in no adverse effect, work proceeds.
16. If the effects of the proposed work are unclear, the involved staff will consult with the staff of the SHPO (move to Step #4 of Level 2 Review Procedures).

8.13.3.3 Level 2 Review Procedures

This category includes modifications, or additions to buildings, structures, or sites that may result from changes of use, modernization, operational efficiency, or technological advances. This category also includes replacement of features with unlike materials. Because this work is more extensive than maintenance, and has a greater probability of adversely affecting historic properties, a more extensive review procedure will be followed. This process includes review and approval by the Washington SHPO. The procedure to be followed includes:

1. PacifiCorp will discuss proposed actions or undertakings to determine which have the potential to adversely affect cultural resources.

2. If the proposed action will not have an effect on the resource, work proceeds.
3. If the proposed action will have an effect on historic properties or the character-defining features of historic properties, PacifiCorp will:
 - a) apply the project rehabilitation standards presented in Section 8.5.2 of this document;
 - b) consult pertinent reference material, listed in Appendix C; and
 - c) identify sensitive ways to minimize the effect and accomplish the needed improvement.
4. PacifiCorp staff will submit the proposed action, based on Step 3 above, to the SHPO for a Determination of Effect;
5. If the SHPO determines that the project will have no effect, work proceeds;
6. If the SHPO determines that the project will have an adverse effect, they will recommend alternative approaches or mitigation measures. PacifiCorp will review these alternative approaches and mitigation measures and reach agreement on an approach;
7. When an alternative approach or mitigation measure determined by the SHPO has been agreed upon, work proceeds;
8. If agreement is not reached in Step 6, PacifiCorp will enter into a Level 3 review.

8.13.3.4 Level 3 Review Procedures

Level 3 Review procedures apply to the same actions as defined for Level 2, except that the proposed changes are more extensive and are likely to affect: (a) multiple character defining elements, or (b) an extensive portion of the historic resource. The same procedures as for a Level 2 Review (consultation Steps 4 through 7) will be followed. In addition, detailed documentation of affected resources may be required by the SHPO.

In the event that major changes to the historic properties of the project are required to continue operations, and alternative designs that reduce or eliminate adverse effects are not feasible, PacifiCorp will commit to recording the historic properties to Level II documentation standards of the Historic American Building Survey (HABS) and Historic American Engineering Record (HAER). Level II Documentation, as outlined in *NPS-28: Cultural Resource Management Guideline* (1994) includes large-format negative photography of select existing architectural and engineering plans and drawings; large-format photographs of exterior and interior views and historic views; and written data including a history and description of the resource. The HABS/HAER documentation may

encompass all or portions of the project and may include all or portions of the study, as determined by the SHPO in discussions with PacifiCorp.

8.14 EDUCATION

Education is an important part of any cultural resources management plan; here it includes a number of education measures aimed at two different audiences. The plan addresses both education for Lewis River Project staff and education for the general public.

PacifiCorp will educate the on-site staff involved in project operations, ground disturbance, building repair and modification, and recreation and wildlife land management. This aspect of the education program will consist of an element of training for Project staff that interact with the public or conduct activities potentially affecting historic properties and other cultural resources. The training will be held once a year after PacifiCorp accepts the new Project license(s). The training will provide information on the nature of cultural resources, their importance to science and to the Tribes, the laws and regulations against disturbing the resources, and the measures contained in the Historic Properties Management Plan. In preparing the training approach and materials, PacifiCorp will consult with the tribes and OAHP. The company also will invite tribal representatives to participate in the training and invite both the tribes and OAHP to attend or view the training.

A special annual training will be held for operations and recreation site staff to familiarize them with the issues of historic properties management and to enable them to recognize undesirable behavior such as artifact collection and vandalism. Recreation staff also will be trained in how to educate the public to avoid impact historic properties, and how to obtain help from law enforcement as needed.

PacifiCorp will also implement education and interpretation activities to foster a community attitude of value and responsibility toward archaeological remains. These activities are intended to help members of the public understand the importance of cultural and natural resources to the Tribes. Education efforts with the general public will include the development and distribution of various materials and programs. The Recreation Resource Management Plan includes a program to develop and implement an Interpretation and Education Plan for the Lewis River Projects. Upon the new license(s) being accepted, an advisory group will be formed to guide the development of an Interpretation and Education Plan. PacifiCorp will involve the Tribes and a cultural resource specialist in the group. This planning effort will determine appropriate themes and the media that will be used. Native American history and values will be an important interpretive theme throughout the project area.

One specific educational action will be to develop a general educational brochure about the need to protect archaeological sites and other cultural resources. One or more drafts of this brochure will be provided to the Tribes and the OAHP for review and comment. PacifiCorp will make the brochure available at Project recreation facilities and will

provide copies of it at the utility's public speaking engagements that include mention of cultural resources.

Another educational action might include providing replicas of representative archaeological artifacts and incorporating them into a traveling exhibit that would be placed in area schools. PacifiCorp would select the artifacts and prepare the exhibit materials in consultation with the Cowlitz Tribe and Yakama Nation.

8.15 MEETING AND REPORTING

The CRC will meet once each year with other PacifiCorp staff members responsible for managing Project operations, recreation, natural resources, and land use to discuss past activities and planned future activities. The primary goal of this meeting will be to review ongoing and upcoming Project development and other activities that could affect historic properties. The CRC will develop a list of historic property management needs for the year and will coordinate throughout the year with the responsible PacifiCorp Authority staff members.

The CRC will prepare a brief Annual Report on Historic Properties to provide the SHPO, the tribes, and the FERC with information summarizing activities that potentially impacted historic properties, and avoidance measures exercised over the past period. The Annual Report will also outline planned activities for the upcoming period. The first report will be filed at the end of the first year after PacifiCorp accepts the new Project license(s). Procedures for completing the summary are as follows:

- ? Summarize the undertakings reviewed by the CRC that were considered exempt from case-by-case review.
- ? Summarize the undertakings that required consultation, and the results of that consultation.
- ? List any specific resource or action of special concern to the SHPO, the Gifford Pinchot National Forest, or the Tribes.
- ? Report any inadvertent discoveries and any actions taken by PacifiCorp as a result.
- ? Summarize consultation that has occurred or is ongoing.
- ? Outline planned activities for the coming year and indicate whether any will require consultation with SHPO and the Tribes.
- ? Include any recommendations regarding amendments to the HPMP.
- ? Request or offer to hold a meeting with SHPO and the Tribes, if a need is identified to discuss any aspects of the Annual Report on Historic Properties.

9.0 IMPLEMENTATION

The following sections briefly discuss the procedures that will be used to implement the Historic Properties Management Plan and the schedule associated with implementation.

9.1 PROCEDURES

Prior to issuance of a new license, FERC staff will prepare a Programmatic Agreement (PA) that will require the Licensee to implement the HPMP after license issuance. The PA will provide for dispute resolution and contain other standard provisions commonly found in PAs for new licenses.

9.2 SCHEDULE

Upon license acceptance, PacifiCorp will implement the HPMP once the FERC has approved it. Table 9.2-1 summarizes the schedule for implementing the management measures discussed in Section 8 above. The deadlines are measured from the date that PacifiCorp accepts the new Project license(s).

Table 9.2-1. Schedule for Implementing Management Measures

Measure	Frequency	Deadline
Appoint Cultural Resources Specialist	Once, or as needed should the position be vacated	Within one month after license acceptance
Prepare Project Curation Standards for Artifacts and Documentation	Once	Within one year after license acceptance
Lone Pine Cemetery Site Visit with Tribal Reps and Archeologist	Once	During first exposure after license acceptance
Review Applicable Federal and State Laws and Regulations	Yearly	Start by end of first year after license acceptance
Meet with Cowlitz Tribe and Yakama Nation Representatives	Each year	Start by end of first year after license acceptance
Report to OAHF on Project Historic Property Management Activities	Each year	Start by end of first year after license acceptance
Review/Revise Management Measures	Every three years	Start in third year after license acceptance
Train Project Personnel	Yearly	Start during first year after license acceptance
Archaeological Monitoring Reservoir Shoreline/Drawdown Areas	Yearly during drawdowns	Start during first year after license acceptance

9.3 PLAN REVIEW AND AMENDMENTS

PacifiCorp will review applicable federal and state laws and regulations governing cultural resources during each calendar year to determine if any changes have been made to them that will affect historic properties management for the Project. PacifiCorp will review the Project's HPMP every three years and will make changes to the management measures as needed by conditions at the Project. Parties to the Programmatic Agreement

may suggest a revision to the HPMP and should submit the contents of the revision to PacifiCorp for review and consideration.

PacifiCorp will provide a draft copy of the revised HPMP, highlighting the proposed changes, to the Tribes, SHPO, and the FERC for review, and then make revisions based on review comments. The FERC will have the authority to approve any changes to the HPMP.

9.4 DISPUTE RESOLUTION

If the SHPO, the Tribes, or the FERC objects to any action or any failure to act pursuant to this HPMP, the objecting party will provide PacifiCorp with a verbal and/or written description of its objection. PacifiCorp will consult with the objecting party and with other parties as appropriate to resolve the objection. If the dispute cannot be resolved, the parties will follow the procedures for dispute resolution outlined in the Programmatic Agreement.

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APPENDIX A

**PROTOCOL FOR ARCHAEOLOGICAL EROSION
DEPOSITION / STUDY**

PROTOCOL FOR ARCHAEOLOGICAL EROSION DEPOSITION / STUDY

Within the drawdown zones, PacifiCorp will conduct an archaeological erosion/deposition study at the National Register-eligible (Criterion D) sites. Readers should note that sediment movements in reservoirs can result in deposition as well as erosion, at least on the horizontal surfaces of archaeological sites.

At each of the National Register-eligible archaeological sites subject to substantial erosion, archaeologists will install one or more devices to assist in tracking the effects of erosion/deposition. They will investigate the usefulness of the approach outlined here and adopt it or something designed to accomplish the same purpose.

The erosion/deposition study may install a line of pins along each site boundary to measure vertical erosion/deposition. Pins will consist of large-headed, galvanized nails measuring at least 25 cm long, with a large metal washer accompanying each pin. During installation, archaeologists will drive the pins into the soil so that the washer is resting on the ground surface. Workers will also establish a series of benchmarks along a transect parallel to the pins, outside of the erosion/deposition zone (although this still may be within the reservoir's drawdown zone). To aid in the relocation of the benchmarks and pins, it may be necessary to paint the benchmarks. However, caution will be used if it appears that painting the benchmarks might attract looters to the site area.

A site datum will be established outside of the drawdown zone, and the position of each of the benchmark stakes and the pins will be mapped with a total station, an electronic device used to accurately map locations. The elevation of this datum will be established to sub-meter accuracy using a differentially corrected GPS, allowing one to determine the elevation of the benchmarks and pins. Each benchmark and pin will be assigned a reference number, and the reference number will be noted on each benchmark or pin with an aluminum tag.

During subsequent site visits, archaeological monitors will record which benchmarks and pins are still present. They will take the elevations of each of the pins from the benchmarks using a line level or functionally equivalent instrument. The benchmarks will also be used as an independent means of measuring horizontal erosion/deposition. The archaeological monitors will take horizontal measurements from the benchmarks to the face of the site. The measurement will be taken along a line that is perpendicular to locations along the shoreline where active erosion is occurring.

The monitors will take measurements at the millimeter scale from the top of the washer to the top of the nail head (Figure 1), during the installation of the pins and during each site visit. As erosion occurs, the soil beneath the washer will be removed and the washer will drop to the new ground surface. As deposition occurs, sediment will cover the washer. Subsequent measurements will reflect the changes in soil levels. Occasionally, the washer will protect the soil from raindrop impact, creating small pedestals. When this

occurs, archaeologists will remove the pedestal so that the washer sits on the true ground surface.

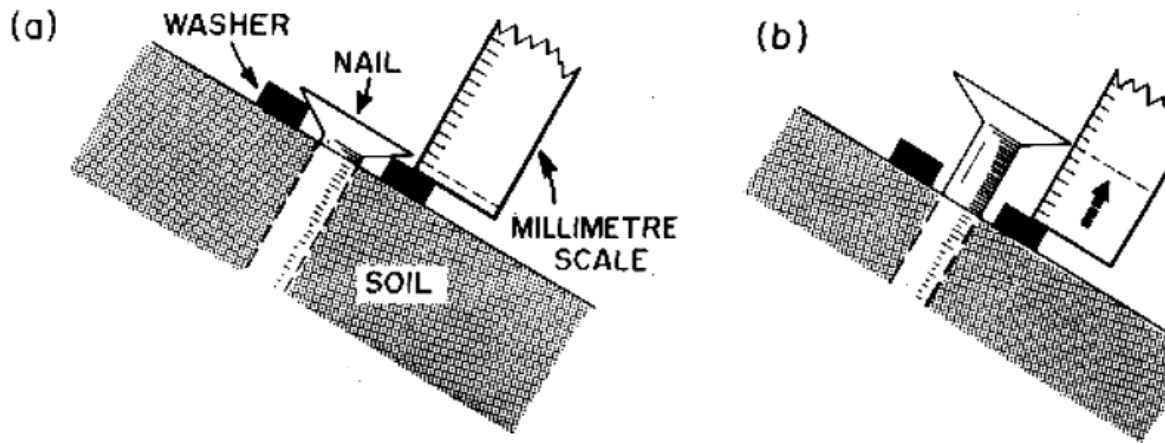


Figure 1. Measurement of Erosion and Deposition at Stakes.
Key: (a) installation a; (b) remeasurement (Dunne 1977:67)

Sites will be monitored yearly at the end of the drawdown period, when the water starts to rise. Each site visit will involve a measurement of the distance between the washer and the nail head, the amount of soil covering the washer, an elevation of each of the pins taken from the benchmarks, and a measurement from the benchmarks to the active erosional zone. The elevation measurement will indicate whether natural processes or vandalism have altered the pin's position. If the pins have been altered, they will be restored to their original elevations.

Monitoring will focus on possible vandalism at 45CW100 near Speelyai Bay, where illegal digging has occurred in the past. Monitoring also will include 45CW110, which is not National Register-eligible but occurs near the Cresap Bay Camp Ground. Vandalism at this site could indicate undesirable behavior near recreation areas, triggering additional patrolling and education.

Appendix B

**Protocol for the Unanticipated Discovery
of Archaeological Resources**

PROTOCOL FOR THE UNANTICIPATED DISCOVERY OF ARCHAEOLOGICAL RESOURCES

Despite best efforts, it is possible for maintenance and construction activities to encounter previously unknown archaeological resources that might be historic properties. During routine maintenance and construction activities, if PacifiCorp staff encounter any archaeological resources that appear to be older than 50 years the following protocol will be implemented:

If any member of a construction, maintenance, or other field crew believes that he or she has discovered an archaeological resource, work adjacent to the discovery will stop, and the work supervisor will be immediately notified. The area of work stoppage will be determined in consultation with PacifiCorp's Cultural Resources Coordinator (CRC) and will be adequate to provide for the security, protection, and integrity of the cultural materials.

The work supervisor will take appropriate steps to protect the discovery site and summon the CRC. At a minimum, the immediate area of the discovery site will be secured. Vehicles, equipment, and unauthorized personnel will not be permitted to traverse the discovery site. Work in the immediate area will not be re-started until evaluation and any needed treatment of the discovery has been completed.

If the find involves Forest Service land, the CRC will immediately contact the Gifford Pinchot National Forest and follow their procedures as applicable. The CRC will determine whether the discovery is potentially eligible for listing in the National Register of Historic Places.

If the discovery appears to be eligible for listing in the National Register of Historic Places, the CRC will immediately contact the SHPO to seek consultation regarding appropriate treatment. If the SHPO determines that the discovery is an eligible prehistoric or historic Native American deposit, then PacifiCorp will consult with the Cowlitz Tribe and Yakama Nation to determine potential cultural heritage significance and the appropriate treatment of the find. Treatment measures may include mapping, photography, limited probing and sample collection, or other activity.

The CRC will prepare a report on the methods and results of the treatment measures within four months of completion of the measures. The report will be addressed to the SHPO. PacifiCorp will provide a review copy of the draft report to the SHPO and the Tribes. After a 30-day review period, PacifiCorp will make revisions that take into account review comments and will provide a final copy of the final report to each of these parties.

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Appendix C

Protocol for the Treatment of Human Remains

PROTOCOL FOR THE TREATMENT OF HUMAN REMAINS

If human remains are encountered on PacifiCorp property, whether during planned maintenance and construction activities, authorized archaeological excavations, or as a result of natural processes, the following protocol will be strictly followed:

If any member of a construction, maintenance, or other field crew believes that he or she has discovered human remains, work adjacent to the discovery will stop, and the work supervisor will be immediately notified. PacifiCorp will determine an area of work stoppage that is adequate to provide for the security, protection, and integrity of the remains.

The work supervisor will take appropriate steps to protect the discovery site and summon an appropriate PacifiCorp representative. At a minimum, the immediate area of the discovery site will be secured. Vehicles, equipment, and unauthorized personnel will not be permitted to traverse the discovery site. Work in the immediate area will not be re-started until evaluation and any needed treatment of the discovery has been completed.

PacifiCorp will direct that human remains and associated funerary objects or archaeological materials be left in place until the county medical examiner or designated professional archaeologist authorizes their removal.

PacifiCorp will immediately contact the appropriate Sheriff's or County Medical Examiner's Office and ask their staff to determine that the remains are not part of a potential crime scene. PacifiCorp will inform the officials that the tribes are very concerned about avoiding disturbance as well as respectful and confidential treatment of human remains. A forensic anthropologist may be required to determine whether the remains are of Native American ancestry.

If the find involves Forest Service land, the CRC will immediately contact the Gifford Pinchot National Forest and follow their Native American Graves Protection and Repatriation Act procedures as applicable. PacifiCorp will contact SHPO staff immediately by telephone and inform them of the discovery. The SHPO will be kept informed of all discussions regarding the remains until their final status is resolved.

PacifiCorp will contact representatives of the Cowlitz Tribe and Yakama Nation immediately. Representatives of these groups will be invited to be present during the Medical Examiner's inspection of the remains.

If the remains are determined to be Native American, PacifiCorp will work with the tribes and SHPO to determine and implement appropriate treatment. Funerary items and associated archaeological materials would be reburied along with the human remains.

If the remains are determined not to be Native American, PacifiCorp will consult with SHPO and others as needed to determine and implement appropriate treatment. This may

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include using historical documentation in an attempt to locate familial descendants and ask what treatment they prefer.

PacifiCorp will allow reburial on utility property if the Tribes or descendants desire that action. Selection of a PacifiCorp-managed reburial location will take into account foreseeable future uses of the location.

The location of reburials will be noted on planning maps to prevent future disturbance. These maps will not be available to the public.

PacifiCorp will treat areas of known burials, both *in-situ* and reburials, with the respect accorded any cemetery.

Appendix D

**Reference Sources for Appropriate Techniques
for Treating Historic Structures**

REFERENCE SOURCES FOR APPROPRIATE TECHNIQUES FOR TREATING HISTORIC STRUCTURES

The Secretary of the Interior's Standards for Rehabilitation (36 CFR Part 67).

The Secretary of the Interior's Standards for the Treatment of Historic Properties (36 CFR Part 68) 1995.

National Park Service Preservation Briefs (Links to on-line versions):

- 01: Assessing Cleaning and Water-Repellent Treatments for Historic Masonry Buildings
- 02: Repointing Mortar Joints in Historic Masonry Buildings
- 03: Conserving Energy in Historic Buildings
- 04: Roofing for Historic Buildings
- 06: Dangers of Abrasive Cleaning to Historic Buildings
- 07: The Preservation of Historic Glazed Architectural Terra-Cotta
- 08: Aluminum and Vinyl Siding on Historic Buildings: The Appropriateness of Substitute Materials for Resurfacing Historic Wood Frame Buildings
- 09: The Repair of Historic Wooden Windows
- 10: Exterior Paint Problems on Historic Woodwork
- 13: The Repair and Thermal Upgrading of Historic Steel Windows
- 14: New Exterior Additions to Historic Buildings: Preservation Concerns
- 15: Preservation of Historic Concrete: Problems and General Approaches
- 16: The Use of Substitute Materials on Historic Building Exteriors
- 17: Architectural Character - Identifying the Visual Aspects of Historic Buildings as an Aid to Preserving Their Character
- 18: Rehabilitating Interiors in Historic Buildings - Identifying Character-Defining Elements
- 21: Repairing Historic Flat Plaster - Walls and Ceilings
- 22: The Preservation and Repair of Historic Stucco
- 24: Heating, Ventilating, and Cooling Historic Buildings: Problems and Recommended Approaches
- 31: Mothballing Historic Buildings
- 32: Making Historic Properties Accessible
- 35: Understanding Old Buildings: The Process of Architectural Investigation
- 36: Protecting Cultural Landscapes: Planning, Treatment and Management of Historic Landscapes
- 37: Appropriate Methods of Reducing Lead-Paint Hazards in Historic Housing
- 38: Removing Graffiti from Historic Masonry

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39: Holding the Line: Controlling Unwanted Moisture in Historic Buildings

41: The Seismic Retrofit of Historic Buildings: Keeping Preservation in the Forefront

42: The Maintenance, Repair and Replacement of Historic Cast Stone