

## 6.0 CULTURAL RESOURCES

In accordance with the requirements of 18 CFR Part 4.51, PacifiCorp has prepared a report on cultural resources for the Yale Hydroelectric Project. This report addresses the following:

- A description of the existing cultural resources in the project vicinity;
- Proposed enhancement measures for the term of a new license;
- A discussion of agency/tribal consultation;
- A description of continuing effects of the project on cultural resources; and
- Implementation, cost, and schedule information.

Cultural resources identified in the study area include prehistoric archaeological resources, traditional cultural properties (TCPs), and historic structures. These resources were researched and surveyed within an Area of Potential Effect (APE), which encompasses lands potentially affected by the existing project and its operation.

### 6.1 EXISTING RESOURCES

The following sections contain information on the prehistoric, ethnohistoric, and historic resources within the Yale Project APE. Also described are factors that could affect these resources, PacifiCorp's requirements for treating the resources, and federal and state laws that protect the resources.

The APE focuses on areas that contain or are affected by project facilities or operations. Included are lands between the minimum pool level and the main access roads around the reservoir, along with the fluctuation zone, reservoir margin, recreation sites, and project facilities (Figure 6.1-1). This 2,280-acre study area includes approximately 700 acres below the high water line of the reservoir, 1,225 acres between the high water line and the main access roads, 130 acres in thin strips bordering the Swift bypass reach, and 225 acres associated with the 10.5-mile-long Merwin-Yale transmission line.

Both direct and indirect effects on cultural properties are assessed in this report. Direct effects occur in the same time and place as the project, such as from reservoir fluctuation or facility maintenance. Indirect effects are caused by the project but occur at a different time or place. For example, processes such as shoreline erosion may expose archaeological sites, or project access roads could provide entry to archaeological sites that previously were inaccessible.

#### 6.1.1 Prehistory and Archaeological Resources

Prehistoric and historic archaeological resources in the Yale APE were identified, located, and evaluated for National Register of Historic Places (NRHP) eligibility. Methods employed for this study included a literature search, field surveys, and archaeological testing at specific sites and isolated finds. This section summarizes the results of this

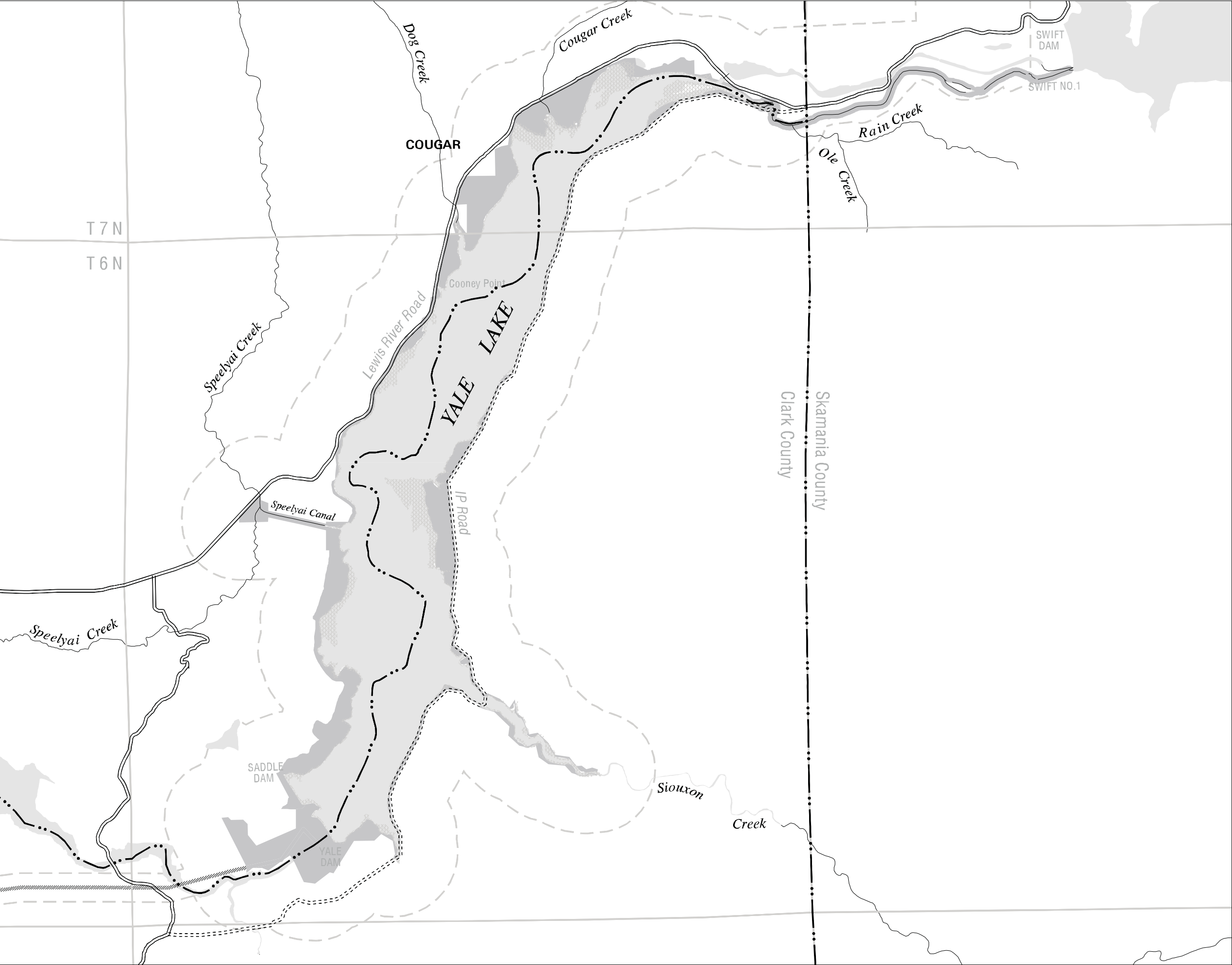
study, briefly reviewing regional prehistory and describing the identified archaeological resources.

#### 6.1.1.1 Regional Prehistory

Archaeological investigations in the southern Washington Cascades and in the Portland basin region of the Lower Columbia Valley can be used to develop a basic chronology for the river valleys and uplands of the southern Washington Cascades, and to assess settlement and subsistence patterns through time (Lewarch and Benson 1991; Minor et al. 1994; Pettigrew 1990). In general, the artifact types found throughout the prehistoric period in the uplands are most comparable to types found in the Columbia Plateau region to the east (Lewarch and Benson 1991; McClure 1992). Whether these similarities reflect social ties as well as technological affinities cannot be answered at present.

Much of the southern Washington Cascade Mountain region was used by people on a seasonal basis by at least 6,600 before present (BP) (Daugherty et al. 1987a, 1987b). Some of the early sites were general base camps where many activities were conducted, while others were more task-oriented. Characteristic artifacts of this early period include leaf-shaped points of various sizes, commonly called Cascade points, and large notched and stemmed broad-necked points. Human use of the region was interrupted by Mount St. Helens eruptive events between at least 3,500 BP and about 2,000 or 1,600 BP. The paucity of radiocarbon-dated occupations between about 5,000 and 3,500 BP may be partially due to the deep burial of sites by tephra from the subsequent eruptions (Lewarch and Benson 1991). Humans returned to the uplands, or the intensity of upland use increased substantially, after about 2,000 BP. Many sites are dated to the last 2,000 years with radiocarbon ages and by the appearance of small, narrow-necked projectile points associated with the use of the bow and arrow (Jermann et al. 1988; Lewarch and Benson 1991). As in the early period, the uplands were used during warmer seasons of the year, but after 2,000 BP this use seems more focused on specific tasks. Rather than general base camps, most sites appear to be locations where specific hunting, plant gathering and processing, or raw material procurement activities were conducted.

Few early sites have been documented in the Lower Columbia Valley, but the post-2,800 BP period is well represented (Boyd and Hajda 1987; Hajda 1984; Kennedy and Jermann 1978; Minor and Toepel 1985, 1993; Minor et al. 1994; Parchman and Hickey 1992; Pettigrew 1981, 1990; Saleeby 1983; Saleeby and Pettigrew 1983; Woodward 1974). Large, possibly sedentary, village sites are present in several lowland locations, and are generally characterized by the presence of rectangular houses similar in most respects to the plank houses used by the ethnographic Chinookan groups of the region (Ames et al. 1992; Dunnell et al. 1973; Hamilton 1993). The cultural chronology for the Portland basin developed by Pettigrew (1981, 1990) emphasizes a strong pattern of continuity in artifact assemblages and land use patterns from 2,800 BP on, culminating in the cultural lifeways of the ethnographic Chinookan groups.



**Legend**

- Shoreline Survey Area (APE)
- Drawdown Survey Zone (APE)  
464 ft. to Full Pool
- Upland Survey Area (APE)

- County Line
- Township/Range Line
- Study Area

**HYDROGRAPHY**

- Waterbody
- Stream

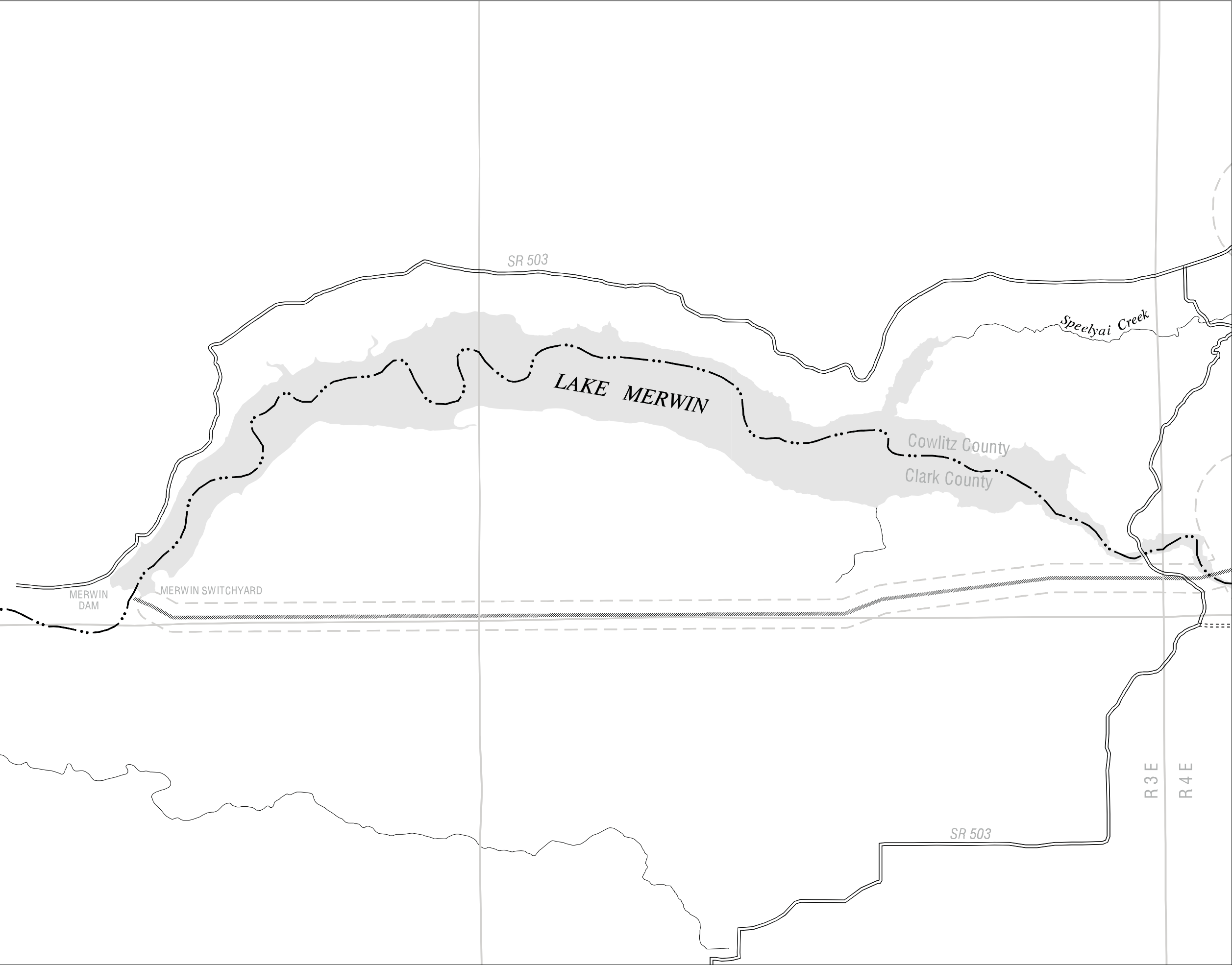
**TRANSPORTATION**

- Primary Road
- Secondary Road



0 1 2 Miles  
Scale 1:52000

**Yale  
Hydroelectric Project  
Figure 6.1-1 (1 of 2)  
Cultural Resource  
Survey Areas**



**Legend**

- Shoreline Survey Area (APE)
- Drawdown Survey Zone (APE)  
464 ft. to Full Pool
- Upland Survey Area (APE)

- County Line
- Township/Range Line
- Study Area

**HYDROGRAPHY**

- Waterbody
- Stream

**TRANSPORTATION**

- Primary Road
- Secondary Road



0 1 2 Miles  
Scale 1:52000

**Yale  
Hydroelectric Project  
Figure 6.1-1 (2 of 2)  
Cultural Resource  
Survey Areas**

Other evidence, however, suggests greater variability in regional cultural patterns during this time. Circular pithouses, distinct from rectangular Chinookan structures and similar to structures of the interior Columbia Plateau, have been found at several sites on both sides of the Columbia River (Dunnell and Beck 1979; Jermann et al. 1975; Minor 1989). Circular pithouses have also been documented in the Yale Lake area (see Section 6.1.1.2). Projectile point styles and radiocarbon ages associated with these circular features suggest that they may co-occur to some extent with sites of the Chinookan cultural pattern (Minor et al. 1993).

Thus, the Portland basin and surrounding uplands may have been home to more than one cultural group during at least a portion of the last 2,800 years, and these groups may have had somewhat differing systems of settlement and subsistence. The changes observed in upland use after 2,000 BP may reflect seasonal movements by lowland Chinookan groups, or use of the region by groups from the east and southeast. Much more archaeological research will be necessary to resolve such questions.

#### 6.1.1.2 Archaeological Research in the Yale Project Vicinity

The rivers draining the south and west sides of the southern Washington Cascades are the pathways to the uplands. The valley floors are at much lower elevations and thus were probably used somewhat differently than the uplands or the lowlands of the Lower Columbia River valley. Yale Lake is 490 feet in elevation at full pool, but is surrounded by uplands that rise to over 3,000 feet within 3 miles of the valley. Little archaeological research had been conducted in this region prior to the current study.

The first archaeological investigation in the Yale vicinity of the upper Lewis River Valley was a reconnaissance for archaeological resources within the proposed reservoir area in 1952-1953 (Bryan 1953, 1955). Six sites were identified and tested, all of which then were inundated by the reservoir. Site 45CL420 proved to be the most interesting, since a circular pithouse measuring 35 by 30 feet and 4 feet deep was encountered. Fifty-three stone tools and several hundred pieces of debitage were recovered from excavations in this pithouse. The age of this feature is unknown, but the presence of a pithouse suggests that this valley supported more residential settlements, possibly winter villages. The circular pithouse also suggests either: (1) an early occupation; or (2) later occupation by people with interior Plateau affiliations, instead of affiliations with people to the south and west in the Lower Columbia Valley.

Archaeological investigations have since been conducted at several sites near Yale Lake. Site 45CL319, a lithic scatter on Chelatchie Prairie, produced radiocarbon ages of 2,200 years BP and 930 BP (Marden 1989). Hunting-related activities were conducted here, along with plant food gathering and processing. The Lower Lewis River Falls site (45SA27), about 30 miles upstream from Yale Lake, is interpreted as a seasonal camp (Gowan and McClintock 1993). The primary use of the site was ended by an eruption of Mount St. Helens about 3,500 years ago. Surveys and site tests were conducted along Lake Merwin (O'Neill 1991) and near Yale Dam in response to cases of site vandalism. Archaeological testing at a heavily vandalized site (45CW102) near Yale Dam recovered numerous artifacts and the probable former presence of a pithouse. A second vandalized

site in this vicinity (45CW101) was also examined. These sites are within the Yale Project APE and are discussed below.

#### 6.1.1.3 Archaeological Resources

The initial phase of field investigations associated with relicensing studies was a cultural resources surface survey of lands within the reservoir drawdown zone (Oetting 1996). The exposed shoreline between 464 and 490 feet msl inspected during the survey comprised about 700 acres. Of this total, 660 acres were systematically surveyed, while 40 acres of very steep slopes could not be safely traversed. Seven flats of varying size are exposed along the perimeter of the lake when the water is drawn down to 464 feet msl, and all of these were inspected. Three small flats were also inspected in the Siouxon Creek arm of the lake.

The APE above the full reservoir shoreline was also surveyed. Approximately 1,100 acres of the 1,225-acre shoreline area was surveyed, along with 130 acres on the margins of the Swift bypass reach. Steep slopes accounted for about 125 acres along the shoreline and were excluded from this survey. The shoreline survey examined each of the developed recreation areas along the margins of Yale Lake—Beaver Bay, Cougar Park, Yale Park, and Saddle Dam—as well as several informal, dispersed camping/recreation locations.

Finally, the Merwin-Yale 115 kV transmission line was surveyed. This survey included 10.5 miles of transmission line ROW and all access roads delineated by PacifiCorp. The only section not surveyed was a deep and inaccessible canyon near the middle of the route.

Archaeological resources were found during each of the surveys. In all, 8 prehistoric archaeological sites, 5 historic archaeological sites, and 9 prehistoric isolated finds were identified and recorded in the Yale Project APE. Subsurface test excavations were conducted at the 8 prehistoric sites and at 4 of the prehistoric isolated find locations. The isolated finds and sites are summarized below.

Due to the sensitive nature of cultural resources, information regarding the specific locations of archaeological sites and finds is not available for general distribution. This information is contained in a separate report and has been made available to appropriate agencies and tribes only.

#### Isolated Finds

**ISO-1:** A small lateral chert biface fragment was found near Saddle Dam.

**ISO-2:** Two flaked cobble choppers were found in the central portion of the reservoir drawdown zone. Subsurface tests were conducted at this location, but no other artifacts were found.

**ISO-3:** A chert flake and a small chert chunk were found at the northeast end of the lake.

**ISO-4:** Three small reddish chert flakes or chunks were found near Beaver Bay.

**ISO-P4/1:** Two flaked cobble tools and 2 chert flakes were found on a mudflat on the southwest side of the lake.

**ISO-P4/2:** One flaked cobble was found north of ISO-P4/1.

**ISO-P4/3:** Three flaked cobble tools were found north of ISO-P4/2.

**TL-1:** One gray chert flake or chunk was found on an access road near the transmission line ROW.

**TL-2:** One chert cobble with flake scars was found in a roadbed in the ROW east of a drainage.

#### Historic Sites

**H-1:** This is a trash scatter with 3 small concentrations on a mudflat near Cougar Camp. The primary concentration contains about 50 items, including fragments of ceramics, metal, and glass. Milk, medicine, beverage (liquor and soda), food container, and canning jars were among the bottle types observed. Two smaller concentrations are nearby along a stream channel and contain similar items. A rusting vehicle chassis, possibly logging related, was found nearby. The artifacts probably date to from the late 1930s to the mid-1940s.

**H-2:** This is a raised road grade running east-west on a small island at the upper end of the lake. It is straight, 4 to 5 meters wide, and is raised above the surrounding terrain 1 to 3 meters to attain a flat grade. It may be part of the old Lewis River Road.

**H-3:** This is a raised grade in the forest on the southwest side of the lake. This grade is distinct for about 500 meters and is 3 meters wide at the top, 6 meters wide at the bottom, and 1 to 3 meters high. It may have been used for logging operations.

**H-4:** A 100-meter long excavated ditch was found south of site H-3. This ditch runs northeast-southwest and is about 2 meters deep. The function and age of the ditch are unknown, but it may be related to historic logging activities.

**H-5:** A subrectangular depression was found in a small clearing in the woods on the southwest side of the lake. The depression is 7x7 meters in size and 2 meters deep. Two large beds of daffodils were found on the east side of the depression and possible wisteria on the south side. These ornamental plants suggest that this was a house or cellar location. A section of stovepipe, portions of a cast iron stove, pieces of 2x6-inch dimensional lumber, window glass fragments, and a few bits of metal were found in the depression. This land was part of the Charles F. Baxter homestead claim, but no structure is shown on historic maps.

### Prehistoric Sites

**45CW101:** This lithic scatter is downstream from Yale Dam. Illegal digging occurred at this site, and limited subsurface test excavations were conducted in 1995 to assess the damage. Supplemental testing was done in 1997. Six auger probes were excavated in the area where the illegal digging occurred, and 17 auger probes were excavated to determine site boundaries. These tests suggest that the site covers the terrace surface, measuring about 150x300 meters.

Cultural materials were found in 22 of the probes. One 1x1 meter test pit was also excavated. Altogether, over 300 flakes and 5 tools were recovered from the auger probe excavations, and 345 flakes and 10 tools were found in the test pit. A charcoal sample from the test pit produced a radiocarbon age of 4300 BP. Ten artifacts from this site, mostly projectile points, were retrieved by law enforcement officers from a relic collector. The projectile point styles are consistent with the radiocarbon age, suggesting that use of this site began around 4,000 years ago and continued until shortly before historic contact.

**45CW102:** This lithic scatter is also below Yale Dam. This site was badly damaged by relic collectors. Excavations to assess the damage were conducted at the site in 1995, and additional auger probes were excavated in 1997. Sixty-three auger probes indicate that cultural deposits are present across the terrace, extending along the east-west transmission line ROW for about 700 meters. The site extends to the edge of the river terrace, approximately 80 meters south of the ROW.

Four 1x1 meter test units were also excavated to document the cultural deposits in different areas of the site. Cultural deposits containing flakes, flaked stone tools, and fire-cracked rock ranged from 1.0 to 1.8 meters in depth. Cultural stratigraphy in one of the vandalized areas suggests the former presence of a pithouse. Charcoal recovered in the test pit adjacent to this feature yielded a radiocarbon age of 3690 BP. Overall, 167 flaked stone tools, 18 cobble tools, and 12,975 flakes have been recovered in the subsurface tests. Forty artifacts, mostly projectile points, were retrieved from a relic collector. The point styles are consistent with the age of the early radiocarbon assay as well as subsequent periods, suggesting that use of this site began at least 3,600 years ago and continued until shortly before historic contact. The density and diversity of the artifact assemblage and the probable presence of a pithouse suggest the site was a base camp or a seasonally inhabited village.

**45CW103:** This small lithic scatter is on a mudflat on the west side of the lake. Approximately 75 chert flakes were found on the surface in a 10x20 meter area, along with 1 narrow-necked projectile point.

Eight 50x50 centimeter shovel probes were excavated across the artifact scatter, resulting in the inspection of 0.675 cubic meters of fill. The evaluation tests recovered 33 chert flakes, 1 basalt flake, the chert projectile point found on the surface, and a chert formed scraper fragment. The subsurface distribution of artifacts follows the surface distribution. The subsurface deposit is shallowly buried and is generally low in density. The point style suggests that the site was occupied within the last 2,000 years.

**45CW104:** This small, low density lithic scatter is on the southwest side of the lake. Approximately 25 flakes were scattered over an area of 80x120-meters, but nearly 20 were found in a small 10x10 meter area. Several flaked cobble implements were found individually on the edge of the flat, south of the small concentration area.

Six shovel probes were excavated, totaling 0.55 cubic meters of sediment. Four of the 6 probes yielded cultural materials, but few artifacts were found. Seven chert flakes were recovered, all on the surface or within the uppermost 20 centimeters. No tools were collected. This site is a low density surface artifact scatter with no buried cultural deposits.

**45CW105:** This site is on the southwest side of the lake. Approximately 50 basalt and chert flakes and over 50 flaked cobble tools were observed, the majority in a 20x40 meter area on the lower margin of the bench. A few artifacts were scattered over the rest of the exposed bench, and the site may continue downslope into the reservoir. This site contained the largest number and greatest density of flakes and tools observed during the surveys.

Investigations at the site included controlled surface collections of artifacts in a grid of six 10x10 meter squares, point provenience mapping and collection of specific tools found outside of the collection squares, and the excavation of 16 shovel probes. Overall, 1.7 cubic meters of material was excavated in the shovel probes.

In total, 933 artifacts were recovered in the 6 surface collection squares, and 3 tools were individually collected. In addition, 48 small animal bone fragments were collected. The surface artifact total includes 854 pieces of lithic debitage (516 chert flakes, 337 basalt flakes, 1 obsidian flake), 53 cobble tools, and 26 flaked stone tools. The flaked stone tools include a broad-necked projectile point and a narrow-necked point. The probes yielded another 128 artifacts—28 basalt flakes, 99 chert flakes, and 1 flaked cobble fragment. The distribution of artifacts shows a central concentration for the surface and subsurface cultural deposits.

The large number of flaked cobble tools and the presence of basalt flakes suggest that some manufacturing of these implements occurred at this site. The additional presence of chert lithic debitage and a variety of chert flaked stone tools suggests that other manufacturing and maintenance activities occurred on site as well. The size and diversity of the artifact assemblage make site 45CW105 unique among the sites recorded along Yale Lake. The 2 projectile points suggest that the site was occupied within the last 2,000 years, but may have been used for several thousands of years prior to this as well.

**45CW106:** This lithic scatter is on the southwest side of the lake. The primary artifact concentration is on a slight rise about 10x15 meters in area, but artifacts are also scattered for another 30 meters to the northeast, resulting in an overall site area of about 15x40 meters. Approximately 35 flakes and several tools were identified on the surface.

Nine shovel probes and a 1x1 meter test pit were excavated. The 1x1 meter test unit was excavated to examine a dense, but apparently small, subsurface cultural deposit found in

one of the probes. Several units were excavated nearby, but the nature of this feature could not be determined. In all, 1,825 cubic meters of material was excavated. A total of 145 artifacts, including 142 chert flakes, 1 basalt flake, and 2 tools, were found. In addition, 7 stone tools were collected from the surface. All of the flaked stone tools were made of chert, and the cobble tools were basalt. Two narrow-necked, contracting stem projectile points were recovered, one on the surface and one in a probe. These points were probably used within the last 2,000 years, based on their small size and neck widths.

The subsurface distribution of cultural materials at site 45CW106 reflects the horizontal extent of the surface scatter. Subsurface artifact density was low, with the exception of the very small, dense artifact cluster found in Probe 2. This deposit was not found in any of the nearby units. The projectile points suggest that the site was used during the last 2,000 years.

**45CL468:** A small artifact scatter was found on the east side of the lake. Eleven artifacts were found on the surface in a 15x20 meter area, including 6 flakes (4 chert, 2 basalt), 1 chert biface, 1 chert core, and 3 flaked cobble implements.

Five shovel probes were excavated, examining 0.45 cubic meters of material. Only one unit yielded subsurface artifacts, totaling 5 chert flakes. The chert biface was collected from the surface. No buried cultural deposit was found, although individual flakes have filtered down into buried contexts. The site is a small, low density surface artifact scatter, of unknown age.

**45CL469:** This artifact scatter is along the base of an eroded cutbank on the east side of the lake. Approximately 20 flakes were scattered along the beach near the cutbank, along with a chert biface fragment, a formed scraper, a flaked cobble chopper, and a ground stone metate fragment. The biface and scraper were collected.

Eighteen shovel probes were excavated, inspecting 2.95 cubic meters of fill. Small numbers of artifacts were found in 10 probes, but no more than 4 specimens were found per unit. Twenty chert flakes and 1 biface fragment were collected. The age of the site is unknown. The number of flakes and tools found on the beach and the lack of a subsurface cultural deposit suggest that the majority of this site has already been eroded by wave action.

#### Significance Evaluation Recommendations

Eight prehistoric sites, 5 historic locations, and 9 isolated finds have been identified in the APE of the Yale Project (Table 6.1-1). The significance of these cultural resources was evaluated in terms of eligibility for inclusion on the NRHP.

**Table 6.1-1. Summary of archaeological resources recorded in the Yale APE.**

<b>Archaeological Resource</b>	<b>Site Type</b>	<b>General Location</b>	<b>National Register Eligibility</b>
<b>Prehistoric Sites</b>			
45CW101	lithic scatter	APE-Lewis River canyon	eligible
45CW102	lithic scatter	APE-Lewis River canyon	eligible
45CW103	lithic scatter	drawdown zone	eligible
45CW104	lithic scatter	drawdown zone	not eligible
45CW105	lithic scatter	drawdown zone	eligible
45CW106	lithic scatter	drawdown zone	eligible
45CL468	lithic scatter	drawdown zone	not eligible
45CL469	lithic/ground stone scatter	drawdown zone	not eligible
<b>Historic Sites</b>			
H-1	trash scatter	drawdown zone	not eligible
H-2	road grade	APE-shoreline	not eligible
H-3	raised grade	APE-shoreline	not eligible
H-4	ditch	APE-shoreline	not eligible
H-5	house/cellar site	APE-shoreline	not eligible
<b>Prehistoric Isolated Finds</b>			
ISO-1	1 flaked stone tool	drawdown zone	not eligible
ISO-2	2 cobble tools	drawdown zone	not eligible
ISO-3	2 chert flakes	drawdown zone	not eligible
ISO-4	3 chert flakes	drawdown zone	not eligible
ISO-P4/1	2 cobble tools/2 flakes	drawdown zone	not eligible
ISO-P4/2	1 cobble tool	drawdown zone	not eligible
ISO-P4/3	3 cobble tools	drawdown zone	not eligible
TL-1	1 chert flake	transmission line ROW	not eligible
TL-2	1 chert cobble/core	transmission line ROW	not eligible

Section 106 of the National Historic Preservation Act (NHPA) (1966 and amended) requires that federal agencies consider the effects that an undertaking, such as the FERC relicensing process, may have on cultural resources that are listed on, or eligible for, the NRHP. Criteria used to evaluate properties for possible inclusion on the NRHP are listed in federal regulations 36 CFR 60.4. Criterion (D) of Section 60.4 is most commonly used for evaluating archaeological materials, deeming as significant those properties (sites, districts, etc.) "that have yielded, or may be likely to yield, information important in prehistory or history." A site's significance lies in its proven or potential ability to make substantial contributions to "the theoretical and substantive knowledge of the discipline" (Butler 1987), either to regional cultural history or to broader questions of human behavior; this significance is not necessarily linked with quantitative measures of site size, artifact density and diversity, or the presence of cultural features.

The 5 historic locations and 9 isolated finds do not appear to be significant cultural properties under the NRHP criteria; therefore, Site Inventory Forms were not prepared for these locations. The trash scatter (H-1) contains 3 concentrations but they are small, limited in content, and all are similar. Similarly, the 2 raised grades (H-2, H-3), the ditch (H-4), and the possible house/cellar depression (H-5) lack significant historical associations, lack site integrity, and have few or no associated artifacts. The home site, H-5, may be associated with the Charles F. Baxter homestead, but this family does not seem to have been in the Yale valley for very long (no Baxters are listed in school records or subsequent census data) and did not contribute significantly to the history of the region. These locations are unlikely to provide much information on the historical development of the upper North Fork Lewis River region. It is recommended that these sites be considered *not eligible* for inclusion on the NRHP.

Likewise, the isolated finds ISO-1, ISO-3, ISO-4, TL-1, and TL-2 are not significant cultural properties with respect to the NRHP criteria. Their importance lies primarily in the knowledge of their existence, but they do not seem likely to contribute substantial additional information to the prehistory of the region. One of the chert chunks found at ISO-4 was atop a tree stump, suggesting that this artifact and the other small artifacts of these isolated finds have been moved by water action in the reservoir. The chert chunks of TL-1 and TL-2 may be the result of recent road construction or maintenance. It is recommended that these 5 isolated find locations be considered *not eligible* for the NRHP.

The significance of the prehistoric lithic scatter sites in the drawdown zone of the reservoir and of isolated find ISO-2, in terms of their eligibility for inclusion on the NRHP, could not be determined on the basis of the surface survey information. To adequately determine the significance of these sites, subsurface tests were conducted to fully establish the size (horizontal and vertical), structure, integrity, and content of the sites, and to obtain better information pertaining to the age(s) and function(s) of the sites. The isolated find ISO-2 was included in this testing since it was possible that the 2 cobble tools might be part of a larger site and because illegal relic collecting ("pothunting") on this flat had been reported in the past.

The subsurface test excavations found that the artifacts at ISO-2 should be considered isolated cultural materials. In total, 3 flaked cobble tools and 2 flakes were found on the surface at this location, but no subsurface cultural materials were found. This isolated find is recommended as *not eligible* for the NRHP.

The site area originally identified as site P-4 was found to actually consist of 3 isolated artifact finds, labeled as isolates ISO-P4/1, ISO-P4/2, and ISO-P4/3. It is recommended that these isolated finds be considered *not eligible* for the NRHP.

The test excavations confirmed that sites 45CW103, 45CW104, 45CW105, 45CW106, 45CL468, and 45CL469 are prehistoric archaeological sites. Sites 45CW104, 45CL468, and 45CL469 are small thin surface artifact scatters with no buried cultural deposits. It is recommended that these 3 sites be considered *not eligible* for the NRHP. Sites 45CW103 and 45CW106 are surface artifact scatters of somewhat greater artifact density and both

contain some shallowly buried cultural materials. These buried deposits are generally low in artifact density, averaging below 200 items/cubic meter. However, 1 small dense buried artifact cluster was encountered in probe 2 at site 45CW106. This cluster appears to be quite small in area, since no other units at this site encountered a similar artifact concentration. Temporally diagnostic projectile points were found at both sites. Both sites, therefore, have yielded significant chronological data in the form of projectile points and, while the subsurface deposits are somewhat limited and low in artifact density, both sites have some potential for yielding additional information important to the prehistory of the North Fork Lewis River region. Therefore, it is recommended that sites 45CW103 and 45CW106 be considered *eligible* for inclusion on the NRHP.

The archaeological investigations at site 45CW105 recovered a large surface assemblage of artifacts from six 10x10 meter collection squares and a smaller subsurface assemblage from the excavation of 16 shovel probes. The highest density of surface and subsurface artifacts coincide in location, indicating that the central surface artifact concentration overlies a small but distinct subsurface cultural component. The number of surface artifacts found at this site is considerably higher than at any of the other sites investigated by Heritage Research Associates (HRA) on Yale Lake. In addition, the composition of the artifact assemblage is more varied than the other investigated sites. Artifacts include a variety of flaked stone tools, a large number of flaked cobble tools, and several ground or pecked stone tools. Two temporally diagnostic projectile points were among the collected tools. The large number and variety of tools indicate that site 45CW105 was probably used more intensively than the other tested sites and that a wider array of activities may have taken place at this site. The presence of chronologically significant artifacts, the array of other tool types, and the distinct subsurface cultural component demonstrate the general integrity of the site. This site has yielded important information for the prehistory of the North Fork Lewis River region and is likely to contribute additional data on the region's past. It is recommended that site 45CW105 be considered *eligible* for inclusion on the NRHP.

Based upon analyses of the damage assessment test excavations at sites 45CW101 and 45CW102, both sites appear *eligible* under NRHP criteria. Documentation of the 4,000-year occupation span, diagnostic artifacts, and site structure have already contributed to the knowledge of prehistory of the Yale vicinity.

To summarize, 8 prehistoric sites, 5 historic locations, and 9 isolated finds have been identified in the APE of the Yale Project (Table 6.1-1). The significance of these cultural resources has been evaluated in terms of their eligibility for inclusion on the NRHP. It is recommended that the 9 prehistoric isolated finds, the 5 historic locales, and prehistoric sites 45CW104, 45CL468, and 45CL469 be considered not significant and *not eligible* for the NRHP. It was recommended that prehistoric sites 45CW103, 45CW105, 45CW106, 45CW101, and 45CW102 be considered significant resources that are *eligible* for inclusion on the NRHP. Archaeological Site Inventory Forms were prepared and submitted to the State of Washington Office of Archaeology and Historic Preservation for Sites 45CW101, 102, 103, 105, and 106; 45CL468; and 45CL469.

On April 3, 1998, the Washington Office of Archaeology and Historic Preservation (OAHP) concurred with PacifiCorp's recommendations of eligibility for the prehistoric and historic resources. Sites 45CW101, 102, 103, 105, and 106 were judged to meet the eligibility requirements for inclusion on the National Register. Historic sites H-1 through H-5 as well as the prehistoric isolated finds were deemed not eligible for the National Register by the Washington OAHP.

#### 6.1.2 Traditional Cultural Properties and Ethnohistory

Traditional cultural property studies have 3 objectives: (1) to identify traditional cultural uses and values of the project vicinity for native peoples of the region; (2) to describe the effects of the project on such traditional uses and values; and (3) to identify culturally appropriate steps for mitigating these effects. This investigation constitutes 1 portion of the studies of affected cultural resources required under 18 CFR 4.51(f)(4). The methods and goals of the study have been framed by the National Historic Preservation Act (NHPA) (16 U.S.C. 470) and its implementing regulations and guidelines (36 CFR 60 and 800).

The properties specifically targeted in this study are termed traditional cultural properties (TCPs) and are the subject of implementing guidelines issued by the Department of the Interior (USDI 1990). TCPs are sites, areas, or resources having continuing cultural significance for 1 or more contemporary peoples (in this context, American Indian tribes or communities). Such traditional cultural properties can include resource areas (for fishing, plant gathering, etc.); ritual sites; and areas of legendary, symbolic, or historic significance. While TCPs may be associated with archaeological sites, there is not necessarily a relationship between the 2.

Within the Yale project vicinity, and the Lewis River watershed in particular, various peoples lived, traveled, traded, and intermarried in a complex social and economic network prior to the arrival of Euro-American settlers in the mid-1800s. Within the project vicinity, at least 3 major linguistic groups met (Chinookan, Salishan, and Sahaptin), and cultural characteristics of the Northwest Coast peoples met those of the Plateau to the east and south. Two of the major groups within the project vicinity were those identified as the Salishan-speaking Cowlitz (Cowlitz Tribe) and the Sahaptin-speaking Klickitat (one of the tribes of the Yakama Indian Nation).

##### 6.1.2.1 Cowlitz Tribe Ethnohistory

In the 19th century, the upper watershed of the Lewis River was occupied by the "Lewis River Cowlitz." Confusion exists about these people, for they are variously identified in historical and ethnographic accounts as Taidnapam, Klikitats, or Lewis River Cowlitz. Verne Frederick Ray, an anthropologist who worked for 20 years as expert witness for the Cowlitz Tribe in its land claims litigation before the Indian Claims Commission, wrote a summary assessment of these people in his *Handbook of Cowlitz Indians*, where he noted the similarities between the Lewis River Cowlitz and the Upper Cowlitz in terms of geography and ecology (Ray 1966).

Cowlitz subsistence was shaped by the environment in which they lived. That environment differed markedly from the ecological settings occupied by the Puget Sound Salish to the north, the Chinookans to the west and south, or the Sahaptins to the east. The Cowlitz situation was special because: (1) they lacked direct access to salt water, since the margins of the Columbia were in Chinookan hands and controlled by their villages; (2) they lived from several to dozens of miles upstream of the Columbia estuary and its marine resources; and (3) they had to focus their subsistence far more than any other tribe west of the Cascades on prairie resources—deer, elk, roots, and berries—because neither the Cowlitz nor Lewis rivers was highly productive in salmon (Ray 1966).

At this time there is no known historic information specific to the identity or fate of the Indians of Lewis River beyond the notes of R.H. Milroy, who in 1878 estimated a population of 75 to 100 Indians residing in the district (Milroy 1878). The probable primary changes which they encountered in the 19th century included the following:

- Trade with maritime vessels entering the Columbia estuary subsequent to 1792 or receiving trade goods from others.
- Incursion of the "Roving Klikitats" using horses to cross the Klickitat Trail to trade at Fort Vancouver subsequent to 1821 (Norton et al. 1983). [This route was virtually abandoned subsequent to the closing of the fort in 1846.]
- Demographic calamity because of the spread of new pathogens in the 1830s and the onset of the "fever" or "ague" (Boyd 1975).
- Failure to secure a ratified treaty in spite of Bureau of Indian Affairs (BIA) councils at Tansy Point, Oregon in 1851, and Chehalis River, Washington in 1855.
- Spread of Euro-American settlement up the Lewis River and into the Yale Lake area in the 1890s (BLM n.d.).

The history of the Cowlitz in the Lewis River drainage is documented further in Appendix 2.3-1 of the FTR for Cultural Resources, "Ethnological Context Statement: Cowlitz Use of the Lewis River Drainage" (PacifiCorp 1998c).

Literature searches confirm the ambiguities about the exact locations of tribal activity in the early historic period. It is evident that a native population of several dozen people resided along the Lewis River until at least the 1880s, but documentation is incomplete. No village locations or other resource use areas are known for the project area on the basis of the ethnographic or ethnohistorical record. Ongoing consultation with Cowlitz informants has not yet revealed site-specific information. Area-specific information from Cowlitz tribal members confirms use of the project vicinity for hunting deer and elk and for fishing.

#### 6.1.2.2 Yakama Indian Nation Ethnohistory

As described above, there was considerable interaction among various cultural and linguistic groups, resulting in cultural identities and group affinities that defy easy definition. In particular there has been considerable discussion about the cultural affinity and origin of the people known as the Taidnapam. Their core area seems to have been the upper reaches of the Cowlitz River, and they probably used an area between the headwaters of the Cowlitz and Lewis Rivers (Indian Claims Commission 1969:164; Hodge 1907).

It is generally agreed that the lower reaches of the Lewis River were used and probably occupied by Upper Chinookan-speaking peoples who were decimated by epidemics in the early 1800s (Indian Claims Commission 1969:159; Ray 1966:A-1, A-2; Spier 1936:21; Jacobs 1931). Then Klickitat groups at least temporarily occupied areas near the lower Lewis River. But there has been disagreement about the groups that used the middle and upper reaches of the Lewis River and the extent to which the area was a core area of 1 group or a multi-group use area.

The traditional Klickitat subsistence strategy consisted of seasonal movement through a series of environments at differing elevations to take advantage of a variety of food resources. During their seasonal round, the Klickitat shared various resource sites in common with many other groups of the region. The major exceptions to this pattern of sharing resource sites were some salmon-fishing sites, especially along the Columbia, where individuals and families were considered to have exclusive rights to particular sites, year after year. In general, the subsistence strategy depended upon and helped reinforce a network of social contact and cooperation with other groups, and was itself supported by values of hospitality and peacefulness throughout the region.

Norton et al. (1983) surveyed and summarized various ethnohistorical data to provide a detailed description of the so-called Klickitat Trail, a major pre-contact and early contact route used by various Indian groups, especially the Klickitat, who used it as both a trade route and an integral part of their yearly subsistence round. The trail ran from Fort Vancouver (Vancouver, Washington) into traditional Yakama territory east of the Cascades. It crossed the upper Lewis River near the current Yale Lake and continued east for nearly 30 miles along the northern bank of the Lewis River, crossing the river again in an area southeast of Mount St. Helens, then continued east across the uplands to the south of Mount Adams. Along this route were villages, camps, and resource sites used by the Klickitat. Their work has documented numerous Sahaptin placenames in the region crossed by the Klickitat Trail.

In the 19th and 20th centuries, many historical forces have combined to transform the traditional Indian way of life described above. Eugene Hunn discusses several forces that brought change to Indian life during the early history of contact between Indian and Euro-American peoples in the Plateau. Acquisition of horses expanded regional contacts and networks and increased trade and distinctions of wealth in some Plateau Indian groups. Epidemic diseases preceding and accompanying Euro-American settlement devastated some Indian groups in the area, especially those along the Columbia River

corridor, and provoked major population movements and consolidations among various Indian groups, including the Klickitat. The fur trade brought traditional Indian peoples into contact and involvement with Euro-American economic systems. The missionaries' impact was complex and sometimes contradictory (Jermann and Mason 1976:66-68, 90; Ruby and Brown 1992:96; Curtis 1911:38; Hunn 1990:23-44). After the initial contact period, some of the most important forces of change included Euro-American settlement, the attempted suppression of Indian cultures, the destruction of traditional animal and plant foods and traditional sacred areas, and the destruction of anadromous fisheries.

#### 6.1.2.3 Traditional Cultural Properties: Interim Results

TCP studies are being accomplished in 4 steps: (1) literature research; (2) consultation with tribal officials; (3) interviews with knowledgeable tribal members; and (4) assessment and mitigation of project effects. Step 1 has been completed with the Cowlitz Tribe and the YIN. Consultation is ongoing to address steps 3 and 4.

PacifiCorp and the staff of the YIN Cultural Resources Program have agreed to a program of at least 5 interviews with tribal members. The YIN reports that it conducted the interviews in May 1998; however, as of April 1999, PacifiCorp has not received documentation of the results. Similarly, it is PacifiCorp's understanding that Cowlitz tribal representatives have conducted limited interviews and that no site-specific information was obtained. These interviews will provide the core data for any assessment of project effect on TCPs. Results of these interviews will be presented in documents prepared by PacifiCorp and the Cowlitz County PUD as part of the watershed studies.

#### 6.1.3 History and Historical Resources

Historic cultural resources include buildings, structures, and sites related to Euro-American settlement and development. In the Yale project vicinity, these resources date back to the mid-1800s.

##### 6.1.3.1 History of Project Vicinity

The history of Euro-American exploration of the Lewis River watershed is poorly documented. Because of the development of a land-based fur trade at Astoria, Oregon in 1811 and the building of Fort Vancouver near the confluence of the Willamette and Columbia rivers in 1825, it is likely that fur trappers worked in the canyons of the Lewis River over several decades prior to 1850. Meriwether Lewis and William Clark were the first to write in 1805 and 1806 of meeting the natives at the mouth of Lewis River. Because of extensive use of the Columbia estuary as a primary artery of travel in the 19th century, a number of subsequent travelers noted the mouth of the Lewis River.

The earliest historical account of penetration of the Lewis River watershed by Euro-Americans occurred in July and August 1853, during the explorations of the Pacific Railroad Surveys. The survey party, consisting of George B. McClellan, Joseph F. Minter, George Gibbs, and Seth Lount, found an exceedingly difficult terrain. The trail which had served the "Roving Klikitat" and connected the Columbia Plateau with Fort

Vancouver was almost impassable for a horse party. During the first week of August, the railroad survey party crossed the dividing ridge and entered the watershed of the North Fork of the Lewis River. J.F. Minter recorded the itinerary of the party through the present vicinity of Yale Lake and its travel upstream over the pass into the Wind River and Little White Salmon drainages. Lt. Johnson K. Duncan, a topographer with the McClellan party, also described the terrain in the vicinity of the Yale valley at the time of his passage through it via an Indian trail in August 1853. The rigors of the terrain in the Yale vicinity were such that the Pacific Railroad surveys did not produce a potential route for a railroad via the Lewis River east toward Mount Adams.

Although isolated deep in the Western Cascades, Speelyai Prairie beckoned to settlers in the late 19th century. The first Euro-American settler arrived at Yale in 1869, with a number of others taking up pre-emption or squatter claims prior to the advent of the cadastral surveys in 1893. The local history of settlement is reflected in historic maps, census enumerations, and land claims. Those who settled the valley secured lands primarily through the Homestead Act. The land records strongly suggest that persons with little capital but a willingness to engage in hard work became the pioneer settlers of the region. The North Fork of the Lewis River was a place where people had to make do and live marginally. These were stump farmers who worked hard, constructed homemade housing, hunted, fished, grew a garden, and struggled to make a living. Transience rather than permanence prevailed; many moved on.

By 1890, a logging camp went into operation at Speelyai, supplied by a steamer which operated as far as Speelyai Riffle. Although most residents engaged in subsistence farming, logging and lumbering drew dozens of workers to the Yale valley by the early 20th century. Using steam donkeys, flumes, and logging railroads, these men felled the trees, yarded them to the river, and unleashed massive log drives which booming crews moved toward storage facilities and rafting areas at Woodland. The logging camps drew many single, young European immigrants. The records of the General Land Office confirm that the Yale valley settled rapidly between 1890 and 1910. The large logging and booming operations significantly expanded the population by 1910, but their closure by the 1920s led to a drop in local population.

Merwin Dam construction in 1928-30 and the Yale Dam project of 1951-53 generated construction jobs but created widespread dislocation of residents. The reservoirs flooded out roads, country schools, and dozens of rural farmsteads. Many residents who had lived along the river for several decades departed forever. The dams stilled the river but opened new recreational potential for urban residents who lived nearby. The moving water of the Lewis River helped create the electricity to illuminate Portland, power industry, and generate thousands of jobs in southwestern Washington and northwestern Oregon.

During the field survey, facilities related to the hydroelectric project were noted (see Section 6.1.3.2 discussion). Several non-hydroelectric historic-era archaeological resources were also encountered and are described in Section 6.1.1.3.

The only historic standing structure within the APE that is not related to the hydroelectric project is the Siouxon Creek Bridge. No other historic structures or buildings stand within the study area. This bridge spans the Siouxon arm of the reservoir on a very narrow but paved private road. The road was constructed by International Paper (IP) Company to access its timber resources. It is likely that installation of the bridge postdates 1950. Even if the Siouxon Creek Bridge is of sufficient age (greater than 50 years), it does not appear to be of exceptional integrity or engineering merit and appears to be *not eligible* under NRHP criteria.

#### 6.1.3.2 Yale Project Historic Resources

The Yale Project includes a number of buildings and structures related specifically to the generation of hydroelectric power, such as the main dam and saddle dam, the reservoir, spillway, powerhouse, and auxiliary facilities such as employee housing. PacifiCorp completed a study of these hydroelectric resources to determine their historic significance and potential eligibility for listing in the NRHP. To accomplish this, PacifiCorp used a 3-step methodology consisting of: (1) a literature review, (2) field surveys, and (3) an evaluation of historic significance. This process is described below.

PacifiCorp initiated a literature review to search for primary historical information on the Yale Project at the University of Washington Libraries and the Seattle Public Library in Seattle, Washington. PacifiCorp also conducted literature reviews at the Cowlitz County Historical Museum in Kelso, Washington; the Vancouver Regional Library System in Vancouver, Washington; the Yale Project history files at the PacifiCorp offices in Portland, Oregon; and historic PacifiCorp company publications in Portland, Oregon. In addition, the National Inventory of Dams (NID) database, issued by the U.S. Army Corps of Engineers, was queried for historical research purposes. Information gathered from existing data was used to develop an understanding of the Yale Project and to create a context for evaluating potentially significant resources.

PacifiCorp completed a field survey of potential historic hydroelectric resources within the Yale study area on November 7, 1997. Field personnel photographed the resources and collected data relating to their history and construction. The data collected during the field survey provided the information required to complete the standardized Washington State Historic Property Inventory Form that is the basis for all historic and cultural resource survey work in the State of Washington. The form is included in the FTR for Cultural Resources (PacifiCorp 1998c). In addition, each resource was assessed for major alterations or modifications of condition from that which was described in the literature review and other historic documentation.

PacifiCorp evaluated the findings from the literature review and field surveys against the National Register criteria specified in 36 CFR 60.4, as listed below:

Districts, sites, buildings, structures, and objects are eligible for listing in the National Register if they are at least 50 years old, possess integrity of location, design, setting, materials, workmanship, feeling, and association, *and* meet one of the four following criteria:

Criterion A - Properties eligible for the National Register through their association with a specific event or that have significance through connection with the broad patterns of our history.

Criterion B - Properties eligible for the National Register through association with the life or lives of persons significant in our past.

Criterion C - Properties eligible for the National Register because they embody the distinctive characteristics of a type, period, or method of construction, or because they represent the work of a master, or possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction.

Criterion D - Properties eligible for the National Register because they have yielded, or may be likely to yield, information important in prehistory or history. [Note: Criterion D generally, but not exclusively, applies to historic or prehistoric archeological sites] (USDI 1991).

Project historians also evaluated the Yale Project for: (1) its historic role in the development of PacifiCorp, and (2) its historic role within the Lewis River power system.

#### Results and Findings from the Literature Review

The literature review was conducted to provide an historic context within which the Yale Project could be evaluated for historic significance. The following sections summarize the findings from the literature review and are divided into: (1) early development of the Lewis River system, (2) postwar electricity demands, (3) construction process, (4) local effects of the Yale Project, and (5) relative abundance of the Yale Dam type in the United States and Washington State.

Early Development of the Lewis River System - The earliest investigations of water discharges from the Lewis River date back to 1909, and site explorations were started by the Northwestern Electric Company as early as 1914. By 1922, the Northwestern Electric Company obtained a preliminary permit from the Federal Power Commission (FPC) to investigate the Yale Project site. Northwestern Electric Company became affiliated with Pacific Inland Power and Light Company, which had acquired several electric systems in the general area. Pacific Inland Power and Light Company carried forward the Lewis River program by filing an expanded application in 1928 for a preliminary permit with the FPC for an investigation of comprehensive development of the Lewis River. The application proposed studies at 4 sites: Ariel, Basket, Swift, and Muddy Creek. The first 3 of these projects were constructed and are now known as the Merwin, Yale, and Swift projects, respectively (PP&L 1976).

In August 1929, Pacific Inland Power and Light Company received a permit for the Merwin and Yale sites. After more study, it was decided to proceed first with the Merwin site. As Merwin was 12 miles downstream from Yale, it was much closer to the nearest railroad access at the town of Woodland. Fewer miles of road improvement were

required to transport supplies and equipment to the project, and later developments at Yale or elsewhere could share the benefit of this work (Dierdorff 1971).

Construction of Merwin began on October 17, 1929 by an affiliated company, the Phoenix Utility Company, for Pacific Inland Power and Light Company. The FPC license was issued on December 12, 1929 for a 50-year period, and construction of Merwin was completed in 1931 (PP&L 1976). Initially slated for a rated capacity of 100,000 kW, this project eventually generated 135,000 kW of power.

The Pacific Inland Power and Light Company, which had been a subsidiary of Pacific Power and Light Company (PP&L), merged with PP&L in 1942. In 1947, the affiliated Northwestern Electric Company was also merged into PP&L. PP&L is now known as PacifiCorp.

Postwar Electricity Demands and National Defense Requirements - In the postwar years, the use of electricity by PP&L's customers was increasing 9 percent per year, typical of the area. Average residential use on the system had increased from 3,730 kWh in 1947 to 4,765 kWh in 1950. In addition, the overall number of customers was increasing (Dierdorff 1971).

The company's decision to move ahead with a project at the Yale site on the Lewis River was a logical outgrowth of the increasing demand and the prior studies conducted at the site. The project was one on which an early construction start could be made, for a number of reasons: (1) the site was quite similar to Merwin in terrain and power potential; (2) geologic investigation had indicated that a fill-type dam would be best suited to the site and the most economical; and (3) the company already owned the greater part of the necessary reservoir lands.

From the defense standpoint, with the Korean War making heavy demands for military equipment, one important consideration was that the Yale Project could be placed in service quickly and relieve the limited power supply situation. Moreover, the Lewis River watershed lies on the rainy west slope of the Cascade Mountains, with streamflows normally high during the peak power load season. Thus, plants like Merwin and Yale help supplement projects on the Columbia, the flow of the which is restricted during winter when freezing weather blankets its upper tributaries in the Rocky Mountain country. With Yale scheduled to come on line during the winter (1952), its benefits were perceived to be great.

The National Production Authority gave the project a defense order rating, and the Defense Production Administration formally certified the project as being necessary for national defense.

On January 23, 1951, the company filed formal application with the FPC for license to construct the Yale Project, with an initial installation of two 54,000 kW generators. Operated in tandem with the Merwin Project, it was estimated that the project would generate 550,000,000 kWh annually, or a little more than two-thirds of the amount of power purchased by the company in 1950.

Construction Process - Preliminary work at the Yale Project site was started by the company under authority of a “pre-license permit” granted by the FPC in advance of the formal license. Under this permit, the company was allowed to proceed at its own risk pending actual licensing of the project. By March 1951, work under way on the Yale Project included surveys for power lines and roads; establishment of a camp site, shop, and other work areas; drilling of the diversion tunnel; and location of survey marks for the dam and other structures. The FPC granted a license to build the project on April 25, 1951. Access roads were ready and the full-scale construction program was quickly underway.

Design and overall supervision of the Yale Project were in the hands of Ebasco Services Incorporated, which also had been in charge of the Merwin development. Construction was handled by Morrison-Knudsen Co., Inc. of Boise, Idaho, a contractor for many major hydroelectric projects in the Pacific Northwest.

The original plan was to build a conventional rock-fill dam. This plan was modified, however, with the determination that adjacent deposits of easily handled glacial conglomerate could provide a more economical and equally satisfactory structure. According to early construction plans, the main dam would require approximately 4,200,000 cubic yards of fill. It would be 1,500 feet long at the crest, 1,300 feet wide at the base and rise 320 feet above the low point of the foundation and 264 feet above the normal level of the Merwin pool downstream. A secondary dam, or dike, would be 1,600 feet long and about 40 feet high traversing a saddle between two hills adjacent to the main dam. It was to be built with material excavated while clearing the main dam area to bedrock. The total cost of the project was estimated at the time to be \$26,450,000.

In March 1952, 6 permanent homes for the men who would operate the new project and their families were completed on the north bank of the Lewis River near the dam. The Company’s newsletter, *The Bulletin*, states that, “The managers and their wives are now occupying the modern homes and call them a delight to any housekeeper” (PP&L 1952).

By July 4, 1952, another step in the construction of the Yale Project was completed when earth-carrying vehicles hauled in the last loads of fill material for the dam. The final tally of the structure included 4,200,000 yards of material for the fill and a maximum height of 323 feet.

Filling of the Yale Project reservoir began August 1, 1952 when two 30-ton steel gates were dropped at the upstream portal of the 1,500-foot diversion tunnel to block the flow of the Lewis River. Clearing and logging of the 10.5-mile long reservoir area behind Yale Dam had taken place during the spring and summer. *The Bulletin* at this time stated, “The reservoir is expected to reach operating level a short time before the first generating unit at Yale is put on line November 1, assuming median water conditions” (PP&L 1952).

*The Bulletin* for October-November 1952 stated that:

The huge 325-ton (generator) made its first trial spin on November 1, exactly on the date forecast 17 months earlier. The November 1 test run

meant victory in an apparently impossible race against time and the elements for engineers and construction experts. The short construction period has required a tremendous amount of engineering ingenuity and construction skill. With this 108,000-kilowatt development fully on the line, Pacific will have more than doubled the generating capacity of its system in the interval since 1948 (PP&L 1952).

With a full reservoir, the generators proved to be capable of producing 133,000 kW continuously, or 25 percent more than their nameplate rating of 54,000 kW each (Dierdorff 1971). This gave PP&L more than 233,000 kW of peaking capacity on the North Fork of the Lewis River, including the Merwin Project below Yale. Yale's powerhouse was the largest on the system when completed early in 1953 (Electrical West 1962).

Yale Project's Local Effects - Most of the literature related to the construction of the Yale Project is focused on the positive impacts of the construction workers on nearby towns. Some local histories, while scant, provide views of the Yale Project placed in a larger framework of the overall Lewis River hydroelectric development.

A local newspaper, *The Columbian*, outlines the boom felt by the construction of the Yale Project by stating:

Business was booming and money was flowing at a rapid pace in Amboy and other nearby areas as work on Yale Dam moved along at a steady pace. Amboy and other nearby towns were quiet, county commercial areas. When the Yale Dam construction began, a steady migration of workers throughout the United States took place. About 250 men lived in the construction worker's barracks on the site of the job while others lived in trailers and other dwellings near the site of construction. As a result of the migration of construction workers and their families to the Yale Dam area, a new grocery store, 2 restaurants, and other commercial developments opened for business. Since the construction boom, the population of Amboy doubled. Amboy rooming establishments and dwellings reported the best business in history, evidenced by prices that skyrocketed since Yale Dam construction began. Almost all other business interests in the area were affected similarly (*The Columbian* October 2, 1951).

Relative Abundance of the Yale Dam Type in the U.S. and in Washington State -

Additional literature review was conducted to place the Yale Dam within a state and national context for construction type and date. The National Inventory of Dams, compiled by the U.S. Army Corps of Engineers, was consulted for this context (U.S. Army Corps of Engineers 1996). The inventory placed dams into 5 categories: (1) name, (2) primary purpose (hydroelectric, irrigation, flood control, or water supply), (3) height, (4) length, and (5) type (arch, buttress, or gravity, made of earthfill, rockfill, concrete, or timber crib).

The result of this review determined that 368 earth-filled gravity type dams are located in the United States whose primary purpose is for the generation of hydroelectric power. Of these, 129 were built since WWII. Within Washington State, 6 dams of this type were built since 1953, including the Yale Dam (Table 6.1-2). Overall, there are a total of 23 hydroelectric dams of all types (gravity, arch, and buttress made of a variety of materials) built since WWII in Washington State (U.S. Army Corps of Engineers 1996). Of the 6 similar type dams, 2 others are larger and more impressive. These include the Swift No. 1 Dam upstream from Yale and the Pumping Pond Dam on the Baker River. Swift is the 7th tallest earth fill dam in the United States.

**Table 6.1-2. Washington State earth-filled gravity-type hydroelectric dams built post WWII.**

<b>Date Completed</b>	<b>Dam Name</b>	<b>Owner</b>	<b>River</b>	<b>Dam Length/Height (in feet)</b>
1953	Yale	PacifiCorp	Lewis River	1,500/323
1958	Swift No. 1	PacifiCorp	Lewis River	2,100/412
1960	Pumping Pond	Puget Sound Power & Light Co.	Baker River	3,000/22
1964	Moran Slough Dike	Grant County, Public Utility District No. 1	Moran Slough	600/11
1970	Skookumchuck	PacifiCorp; Washington Water Power; Portland General Electric; Puget Sound Power & Light	Skookumchuck River	1,340/160
1984	Martin Wirkkila	M.S.W. Credit Shelter Trust	Burnham Creek	900/29

Source: U.S. Army Corps of Engineers, 1996.

### Results and Findings from Field Surveys

The field survey conducted in November 1997 identified a total of 11 hydroelectric resources or facilities related to the Yale Project in the study area (Table 6.1-3). The hydroelectric facilities that were surveyed include the main dam, the saddle dam, reservoir, spillway, powerhouse, diversion tunnel, intake structure, penstocks, and transmission line. Auxiliary project facilities that were surveyed include the company housing and a warehouse facility. Each resource was photographed, and information was collected on their general appearance and condition. These data were recorded on the Washington State Historic Property Inventory Form which is included in the FTR for Cultural Resources (PacifiCorp 1998c).

### Results from Evaluation of Significance

The 11 hydroelectric facilities and auxiliary structures associated the Yale Project were assessed for their significance based on the following criteria:

- Age: facilities are eligible for listing in the National Register if they are at least 50 years old,

- Integrity: hydroelectric facilities are eligible for listing in the National Register if they retain the integrity of most of the components, so that the significance of the total system is well represented. The entire system must have integrity of location, design, setting, materials, workmanship, feeling, and association.

**Table 6.1-3. Historic hydroelectric resources surveyed in the Yale Project study area.**

Name	Resource Type
<b>Hydroelectric Facilities and Components</b>	
Main Dam	Hydroelectric Facility
Saddle Dam	Hydroelectric Facility
Reservoir	Hydroelectric Facility
Spillway	Hydroelectric Facility
Powerhouse	Hydroelectric Facility
Diversion Tunnel	Hydroelectric Component
Intake Structure	Hydroelectric Component
Penstocks	Hydroelectric Component
Transmission Line	Hydroelectric Component
<b>Auxiliary Project Facilities</b>	
Company Housing	Workers' Housing
Warehouse	Storage Facility

Facilities are eligible for listing in the National Register if they meet both of the aforementioned criteria *and* at least 1 or more of the following criteria, which is an adaptation of the National Register criteria used specifically for historic hydroelectric projects in Washington State (OAHF 1988):

- Significant in the history of hydroelectric generation engineering and electric transmission technology, in the history of hydroelectric design principles, and in the development of construction techniques (Criteria A and C);
- Significant in the social, economic, and industrial development of the locality, state, region, or nation (Criterion A);
- Significant examples of hydroelectric power systems designed or built by renowned engineers (Criterion C); or
- A rare example, a significant early example, or a significant representative example of a low or high head hydroelectric development (Criterion C).

In addition, project historians assessed the Yale Project for the following criteria:

- The Yale Project's historic role in the development of PacifiCorp, and
- The Yale Project's historic role within the Lewis River power system.

Age - Initial construction of the Yale Project began in late 1951. All of its main components, auxiliary components, and other features such as company housing were completed by late 1952 and fully operational by early 1953. Currently, none of the project facilities meet the 50-year age requirement. However, most of them will meet this threshold within the next 5 years.

Integrity - The integrity of the Yale Project was verified by checking field survey results against original project descriptions and construction maps, photographs of the buildings as completed in the early 1950s, and through verbal communications with company employees regarding recent changes or alterations to the components.

The Yale Project appears to have a high degree of integrity in that very few of its components or features have been altered since initial construction. This level of integrity is typical of hydroelectric plants, based largely on the fact that since 1920, improvements in technology have generally not been sufficient to justify the expense of replacing functioning hardware (Hay 1991).

The only alterations to occur within the Yale Project study area were the removal of 3 of the original workers' housing units at Yale Village and the construction of 2 new units. The remaining 3 original homes have had minor modifications to their garage doors and roofing material which do not adversely affect their overall integrity. Although not specifically an engineering component of the hydroelectric facility, these homes were part of the overall development of the Yale Project and provided a pleasant, modern environment for project operators in an area that was fairly remote from major population centers. The loss of 3 homes and the replacement of 2 newer, and stylistically similar, homes convey a "medium" amount of integrity, and do not adversely affect the overall high integrity of the Yale Project.

Significance in the History of Hydroelectric Generation Engineering and Electric Transmission Technology, in History of Hydroelectric Design Principles, and in the Development of Construction Techniques - The Yale Project falls midway in the chronological history of hydroelectric development, which spans from the late 19th century to the present. By the early 1950s, when Yale was constructed, hydroelectric design, engineering, and transmission principles were well established. In terms of electrical generation principles, for example, the vertical Francis-type generator and turbine arrangement was well-used throughout the hydroelectric industry for many decades prior to the construction of Yale, and is still in use today. Engineering innovations and experimentation were characteristic of hydroelectric development prior to 1920 (Hay 1991). Overall, very little in the literature review revealed that the construction of Yale Dam, the powerhouse, penstocks, or other components were significant in terms of construction techniques. For this reason, the Yale Project does not meet this criterion and therefore conveys a low degree of significance.

Significant in the Social, Economic, and Industrial Development of the Locality, State, Region, or Nation - Very little in the literature review or field surveys indicates that Yale Project was significant in the social, economic, or industrial development of the state or nation. Given that the Yale Project was one of 23 hydroelectric dams which came on line

during the postwar period in the state, and one of 129 in the nation at this time, it does not appear to be a significant contributor to the social, economic, or industrial development of the state or nation.

Locally, the Yale Project had a number of temporary, positive economic benefits such as the increased flow of dollars into the local economy, specifically in Amboy, as reported by *The Columbian*. Although the number of construction workers and their spending potential were high for a period of about a year, these economic benefits to the region were temporary and largely limited to the construction period.

For this reason, the Yale Project by itself does not appear to have had lasting economic or social significance on the local area and therefore has a low degree of significance related to this factor.

The Yale Project did, however, have the cumulative effect of adding capacity to the region's power supply during a time of need in the early 1950s. By itself, the 133,000-kW Yale Project was a relatively small contributor to the overall power supply, when compared to the larger federal hydroelectric projects on the Columbia which came on line during this time. Although adding capacity to the Northwest Power Pool was important, the Yale Project is not significant in terms of overall kilowatt output.

Significant Examples of Hydroelectric Power Systems Designed or Built by Renowned Engineers - The Yale Project was built by Morrison-Knudson, Inc., a large construction and engineering firm which built many hydroelectric projects in the Pacific Northwest and around the nation. In the literature review, the Yale Project is not attributed to a particular engineer. It was likely an adaptation of a well-proven hydroelectric facility design that was modified to fit the specific location and geologic and hydrologic makeup on the Lewis River, as well as PP&L's kilowatt capacity requirements. No evidence exists that Yale Project is a significant example of a hydroelectric power system built or designed by a renowned individual. For this reason, the Yale Project does not appear to meet this criterion and therefore has a low degree of significance related to this factor.

A Rare Example, a Significant Early Example, or a Significant Representative Example of a Low or High Head Hydroelectric Development - Given its rather recent construction, the relative abundance of this dam type within the state and the nation, and the existence of larger and more impressive representatives of this type, Yale Dam is not a rare, significant early, or a significant representative example. For this reason, the Yale Project does not appear to meet this criteria and therefore has a low degree of significance related to this factor.

Historic Role in the Development of PacifiCorp - The historic role of the Yale Project in the development of PP&L is well documented in the literature. By 1953, the Yale Project was in full service with 285,230 kW of generating capacity, producing half of PP&L's total requirements. The Yale Project also made possible more efficient utilization of power purchases from Bonneville Power Administration (BPA) at the time.

The Yale Project also set records within the company at the time. PP&L's 1951 construction program required \$18,314,000, a record that was surpassed in 1952, when construction required \$22,517,989 to rush the Yale Project to completion. Yale was also PP&L's largest plant in terms of kilowatt capacity at the time (Electrical West 1962).

Although impressive at the time, these figures were quickly surpassed as larger and more expensive hydroelectric developments were constructed and capacity was added through mergers with other companies. For example the Swift No. 1 Project, with a 268,000 kW capacity and a construction budget of over \$60,000,000, was developed only a few years after Yale.

The Yale Project's contribution to PP&L's overall output capacity and construction expenditure outlays was important at the time, but was small when compared to other, more powerful hydroelectric dams that were either constructed or acquired by the company in the 1950s. The Yale Project should also be seen as only one part of the company's overall strategy to increase its annual kilowatt output and broaden its customer base, which included many power developments and acquisitions within the entire Pacific Northwest. For this reason, the Yale Project, when viewed by itself, does not appear to be historically significant in the development of PacifiCorp and therefore has a low degree of significance related to this factor.

Historic Role Within the Lewis River Power System - From its conception, the Yale Project was viewed as an essential part of a comprehensive development of the Lewis River power system. The facility eventually provided a maximum capability of 133,000 kW out of a total maximum of 546,000 kW on the entire Lewis River system (PP&L 1988). The Yale Project can be seen as an important historical element in the overall development of the Lewis River power system, yet compared to Merwin and Swift, it is not the oldest, largest, nor most powerful of the 3 hydroelectric facilities. In terms of overall historic significance of the Lewis River development, the literature supports the fact that the Merwin Project likely had the greatest impact to the local area by being the first and the closest to population centers. The literature also maintains that the Swift No. 1 Project was the largest earth filled structure in the world at the time it was built and had the largest kilowatt output of any other hydroelectric plant belonging to PP&L, and still does today. The Yale Project can be seen as a contributing element and an integral piece of the overall Lewis River development; however, the Yale Project does not appear to be individually significant.

### Summary and Conclusions

The Yale Project was evaluated using the 6 criteria discussed above and was found to have low significance for each of the factors. The hydroelectric facilities were also found to have high integrity, except for the auxiliary project facilities, which have medium and low degrees of integrity. Table 6.1-4 summarizes these findings.

**Table 6.1-4. The significance and integrity of historic hydroelectric resources in the Yale Project study area.**

Name	Resource Type	Integrity	Significance
<b>Hydroelectric Facilities</b>			
Yale Hydroelectric Project*	Hydroelectric Facility	High	Low
<b>Auxiliary Project Facilities</b>			
Yale Village	Employee's Housing	Medium	Low
Warehouse	Storage Facility	Low	Low
*Includes main dam, saddle dam, spillway, powerhouse, intake structure, penstocks, and transmission lines			

Based on the literature review, field surveys, and evaluation of historic significance, the study finds the following results:

- Currently, none of the project facilities meet the 50-year age requirement. However, most of them will meet this threshold within the next 5 years, at which time they could be potentially eligible as historic resources. However, a reevaluation of the Yale Project at that time would not likely result in a determination of eligibility due to the relatively low significance of the project features.
- The Yale Project meets the eligibility requirements for sufficient integrity as it retains nearly all of its facilities and components as originally constructed. The Yale Project, overall, has a high degree of integrity except for Yale Village, which has a medium degree of integrity.
- Research and analysis do not support a finding of historical significance for the Yale Project based on the established evaluation criteria and eligibility requirements. Therefore, the Yale Project is not recommended eligible for listing in the National Register of Historic Places.
- In conjunction with any future historic resources studies of the Lewis River watershed (e.g., the watershed studies), the Yale Project may be eligible for listing in the National Register as a contributing element to a multi-property nomination for the entire Lewis River hydroelectric system.

#### 6.1.4 Factors Affecting Cultural Resources

The primary factors affecting archaeological resources are the inundation of archaeological resources by Yale Lake and the erosive effects of wave action on archaeological resources as the lake level is raised and lowered during seasonal operations. The seasonal exposure of sites on the bare mudflats around the lake may also enhance their vulnerability to looting and vandalism. Site looting is a factor affecting cultural resources, since looting has been documented at 2 sites in the project APE. Ground-disturbing activities, such as vegetation clearing, road maintenance, and construction, could affect archaeological deposits that might be buried in parts of the project APE. Such activities could compromise traditional cultural properties, if any were present in the area.

Factors that may affect potential historic hydroelectric resources in the study area include alteration, reconstruction, relocation, new construction, and demolition of or near historic buildings and structures. As the Yale Project facilities are not recommended eligible for listing in the NRHP due to their relatively low historic significance and a future reevaluation would not likely result in a determination of eligibility, none of the aforementioned factors are anticipated to affect historic resources within the project area.

PacifiCorp has initiated watershed studies for the entire Lewis River basin which will result in a number of measures for protecting and enhancing cultural resources of all 4 hydroelectric projects (Merwin, Yale, and Swift No. 1 and Swift No. 2). The Yale Project may be eligible for listing in the National Register as a contributing element to a multi-property nomination for the entire Lewis River hydroelectric system. In this case, alteration, reconstruction, relocation, new construction, and demolition of or near a contributing element would affect cultural resources. If a settlement agreement is reached, measures to protect and enhance cultural resources associated with the Lewis River projects, including the Yale Project, will be implemented after 2005. In the interim, however, PacifiCorp proposes to implement several measures described below to protect cultural resources in the Yale Project study area.

#### 6.1.5 Existing Resource Management Plans

There are no federal, state, or local cultural resource plans that directly affect cultural resources in the Yale project vicinity.

#### 6.1.6 Existing Measures

Under Section 106 of the NHPA, all FERC licensees are required to consult and cooperate with the State Historic Preservation Officer (SHPO) prior to any ground disturbing activities to determine the need for and extent of any archaeological or historic resource surveys and any mitigation measures that may be necessary. Mitigation or protection measures are required only for archaeological or historic hydroelectric resources determined to be significant. Five prehistoric sites within the project APE are considered eligible for inclusion on the National Register. The OAHP concurred with this determination (letter from G. Griffith, Comprehensive Planning Specialist, OAHP, Lacey, Washington, to R. Howison, PacifiCorp, April 3, 1998). Accordingly, any maintenance or construction activities in the vicinity of these sites will be coordinated with and approved by the OAHP.

### 6.2 PROPOSED ENHANCEMENT MEASURES

As described in previous sections of this report, some cultural resources identified within the Yale Project study area have been determined eligible for listing on the National Register of Historic Places. Measures to protect and enhance these resources are described below. A number of these are interim measures, to be combined with a broader set of measures expected to evolve from the ongoing watershed assessment of the 4 North Fork Lewis River hydroelectric projects.

6.2.1 Issue: Protection of Known Cultural Deposits at NRHP-eligible Archaeological Sites

Cultural deposits at archaeological sites recommended as NRHP-eligible may be adversely affected by operation of the project, such as seasonal drawdowns of Yale Lake that subjects sites to erosive wave action as the lake level is lowered and raised, or ground-disturbing maintenance/construction activities affecting sites.

Proposed Measure: Develop Cultural Resources Management Plan (CRMP) that will include options for avoiding or mitigating adverse project impacts

PacifiCorp will prepare an interim CRMP that will cover the Yale Project. This plan will develop management guidelines for NRHP-eligible sites in the APE which may include monitoring at sites, as well as options for site avoidance, site protection measures, or mitigation of adverse impacts through data recovery. The CRMP will also develop protocols for the discovery of new archaeological sites. Project personnel will receive training in cultural resource identification and monitoring.

6.2.2 Issue: Curation of Artifacts Recovered During Site Evaluation Tests

Artifact assemblages recovered from sites during the site significance evaluation tests conducted by PacifiCorp require permanent curatorial care to preserve them for the future.

Proposed Measure: Develop plan for interim curation of artifacts through 2002

The site collections should be maintained in secure conditions until suitable permanent curation facilities are found in southwest Washington. The collections are currently maintained in a secure facility by PacifiCorp's subconsultant, Heritage Research Associates, Inc. This temporary storage could be continued during this interim period, with an annual inventory to ensure its status and accessibility.

6.2.3 Issue: Opportunities to Increase Knowledge of Lewis River Prehistory

The artifact collections and other data recovered at sites in the Yale APE may provide opportunities for conducting specialized data analyses which may enhance the NRHP-eligibility of certain sites.

Proposed Measure: Conduct analyses of recovered artifacts for additional scientific information

Specialized analyses using extant collected data may contribute significant information on the prehistory of the upper North Fork Lewis River valley. Existing collections, including those acquired prior to the current site evaluation tests, may have samples or artifacts suitable for further analysis. Additional studies could include radiocarbon dating, faunal and/or macrobotanical identification, sediment analysis, debitage and other artifact analyses, or spatial analyses.

#### 6.2.4 Issue: Damage to NRHP-eligible Archaeological Sites by Illegal Looting and Vandalism

Illegal site vandalism and artifact looting has occurred in the recent past at 2 sites in the project APE (45CW101 and 45CW102) and may occur again at these or other sites.

#### Proposed Measure: Regular inspection and monitoring of site areas

The CRMP for the project will include guidelines for routine monitoring of site areas that are thought to be at risk. Routine inspections will be conducted and documented by PacifiCorp personnel who will be alert for evidence of recent disturbances to site areas. If disturbances are observed or suspected by the site monitors, a professional archaeologist will be consulted to assess the situation and propose subsequent courses of action. PacifiCorp will also work to increase public awareness of the importance, value, and fragile nature of cultural resources.

#### 6.2.5 Issue: Damage to Unknown Buried NRHP-eligible Archaeological Deposits by Ground-disturbing Activities

Ground-disturbing maintenance and construction activities could affect currently unknown archaeological deposits that may be obscured by vegetation or buried in the project area. Although no surface evidence of archaeological resources was found in some areas, there remains the possibility that buried prehistoric or historic cultural resources may be present in portions of the project area. Likewise, dense vegetation obscured the ground surface in some areas, restricting the ability to identify cultural resources that could be adversely affected if ground-disturbing activities occur in these areas.

#### Proposed Measure: Review of projects by archaeologist prior to ground-disturbing activities

The project CRMP will include procedures for a professional archaeologist to review proposed projects within the APE where ground-disturbing activities are planned, especially in developed recreation areas. This review will indicate whether an archaeological survey, site discovery probe tests, construction monitoring, or other actions should be implemented to identify, evaluate, and treat buried archaeological resources.

### 6.3 ENHANCEMENT MEASURES NOT INCLUDED

To date, agencies and tribes have not requested specific enhancement measures; therefore, no measures have been excluded.

## 6.4 AGENCY AND TRIBAL CONSULTATION

Consultation with agencies that manage cultural resources has been ongoing throughout the relicensing process, as documented in Table 6.4-1. The following paragraphs summarize agency consultation to date.

PacifiCorp contacted the OAHF requesting comments on, and concurrence with, the findings of the draft FTR for Cultural Resources (PacifiCorp 1998c). Written comments from the OAHF were received on April 3, 1998. The OAHF concurred with the findings of the draft FTR for Cultural Resources and determined that the Yale Project and other historic sites are not eligible for listing in the National Register and that sites 45CW101, 102, 103, 105, and 106 are eligible for listing (letter from G. Griffith, Comprehensive Planning Specialist, OAHF, Lacey, Washington, to R. Howison, PacifiCorp, April 3, 1998).

### 6.4.1 Consultation with Cowlitz Indian Tribe

On October 3 and 4, 1996, PacifiCorp's consultant, Stephen Dow Beckham, met in Longview, Washington, with Cowlitz representatives John Barnett, Chairman; Carolee Morris, office manager; and Robin Torner, member of the Cowlitz Tribe Hunting and Fishing Committee, to discuss tribal concerns and cultural resource issues in the Lewis River area. On November 15 and 16, 1996, Dr. Beckham again met with Cowlitz representatives in Longview to discuss matters related to the Yale Project. Participants included Chairman Barnett, Ms. Morris, council member Marsha Williams, and Judith Erwin, author of a forthcoming history of the Cowlitz tribe. On November 14, 1996, the Cowlitz Tribe wrote to PacifiCorp to articulate its interest in participating in meetings and to raise areas of initial concern.

During 1997, Dr. Beckham maintained regular, weekly contact with Chairman Barnett regarding the tribe's participation in further investigations. On February 17, HRA (PacifiCorp's archaeological consultant) circulated a proposed scope of work for archaeological site assessment to the Cowlitz Tribe for review and comment prior to field investigations. PacifiCorp staff and Dr. Beckham met with Cowlitz representatives on February 22 to continue tribal discussions. In August 1997, a scope was verbally approved by Mr. Barnett to proceed with a limited program of interviews, analysis, and writeup. On September 4, 1997, Nancy Osborne of the Cowlitz Tribe began attending regular watershed scoping sessions on cultural and other resource issues at which Ms. Osborne was provided an opportunity to share a Cowlitz view on the Lewis River watershed. Both the TCP and archaeological investigations for the project have included frequent contact by phone or fax between the Cowlitz Tribe, Dr. Beckham, and HRA. On March 5, 1998, PacifiCorp and its consultant met with Marsha Williams, Nancy Osborne, and Carolee Morris of the Cowlitz Tribe for a tour of the 8 known archaeological sites at Yale Lake.

Limited interviews with tribal members have been conducted, with area-specific information pertaining to use of the project vicinity for hunting deer and elk and for fishing. No site-specific locations within the APE have been identified to date.

**Table 6.4-1. Record of cultural resources agency and tribal communications.**

<b>Date</b>	<b>Consultation Summary</b>	<b>Agency/Tribe/Other Interested Party</b>
12/2/95	Memo notification from Beckham on relicensing scoping meeting on December 11.	Cowlitz Tribe
1/17/96	Meeting scheduled 1/24/96 to discuss Yale relicensing.	YIN
2/7/96	Notice of Intent to file application for a new license.	BIA, Columbia River Intertribal Fish Commission, Cowlitz Tribe, NPS, YIN, North Clark County Historical Museum, USFS, OAHP
2/23/96	BIA requests to be deleted from project mailing list.	BIA
3/19/96	Spring '96 studies and schedule for FSCD.	Cowlitz Tribe, NPS, USFS, YIN
5/2/96	FSCD transmitted.	Cowlitz Tribe, Columbia River Intertribal Fish Commission, North Clark Historical Museum, NPS, USFS, YIN, OAHP
5/15/96	Notice of public meeting to review FSCD.	OAHP, Cowlitz Tribe, Columbia River Intertribal Fish Commission, North Clark Historical Museum, NPS, USFS, YIN
10/11/96	PacifiCorp requests meeting regarding cultural resource studies.	YIN
11/4/96	PacifiCorp responds to comments on FSCD.	OAHP, Columbia River Intertribal Fish Commission, Cowlitz Tribe, North Clark Historical Museum, USFS, YIN
11/14/96	Tribe advises PacifiCorp of relicensing concerns and willingness to meet.	Cowlitz Tribe
12/6/96	PacifiCorp responds to 11/14/96 letter.	Cowlitz Tribe
1/20/97	Interim Technical Report transmitted.	OAHP, Cowlitz Tribe, Columbia River Intertribal Fish Commission, North Clark Historical Museum, NPS, USFS, YIN
2/10/97	Watershed studies process meeting scheduled.	OAHP, Columbia River Intertribal Fish Commission, Cowlitz Tribe, North Clark Historical Museum, NPS, USFS, YIN
2/14/97	Letter update from HRA on status of records search and archaeological survey with proposed site evaluation scope of work.	OAHP
2/17/97	Letter update from HRA on status of records search and archaeological survey with proposed site evaluation scope of work and proposed dates of work; invitation to visit archaeological crew in field.	Cowlitz Tribe, YIN
2/19/97	Fax follow-up of 2/17/97 letter; follow-up copy of letter of notice of 2/21/97 relicensing meeting.	Cowlitz Tribe, YIN
2/19/97	Telephone follow-up of 2/17/97 letter.	Cowlitz Tribe, YIN

**Table 6.4-1. Record of cultural resources agency and tribal communications (continued).**

<b>Date</b>	<b>Consultation Summary</b>	<b>Agency/Tribe/Other Interested Party</b>
2/21/97	Transmit record of 2/21/97 relicensing and watershed meeting.	Cowlitz Tribe, NPS, USFS, YIN
3/20/97	Telephone call from HRA to Gordon Lothson to follow-up on archaeological study scopes and results; left message.	YIN
4/1/97	Transmit study plan regarding reservoir drawdown effects.	OAHP, Columbia River Intertribal Fish Commission, Cowlitz Tribe, North Clark Historical Museum, NPS, USFS, YIN
5/9/97	Transmit information on watershed studies workshop.	OAHP, Columbia River Intertribal Fish Commission, Cowlitz Tribe, North Clark Historical Museum, NPS, USFS, YIN
6/2/97	Lewis River watershed studies workshop literature transmitted.	YIN
6/24/97	Scope of work for study of YIN traditional use of Lewis River vicinity.	YIN
8/4/97	Notice of watershed studies scoping meeting.	Cowlitz Tribe
8/14/97	TCP studies.	YIN
8/15/97	Telephone call from HRA to Gordon Lothson to follow-up on archaeological study scopes and results; left message.	YIN
8/18/97	Proposal for collaborative relicensing approach.	OAHP, Columbia River Intertribal Fish Commission, Cowlitz Tribe, North Clark Historical Museum, NPS, USFS, YIN
8/21/97	Telephone call from HRA to Gordon Lothson to follow-up on archaeological study scopes and results; left message.	YIN
8/29/97	Telephone call from HRA to Gordon Lothson to follow-up on archaeological study scopes and results; left message.	YIN
9/4/97	Relicensing meeting at Olympia, WA with Nancy and Dennis Osborne; K. Toepel in attendance from HRA.	Cowlitz Tribe
10/15/97	Donation to facilitate tribal participation.	Cowlitz Tribe
10/16/97	Telephone call from PacifiCorp regarding TCP interviews.	YIN
10/20/97	Telephone call from PacifiCorp regarding TCP interviews and to set up a meeting.	YIN
10/24/97	Acknowledgment of donation. Letter of interest in participation in Yale consultation from Cowlitz Tribe to PacifiCorp.	Cowlitz Tribe
10/27/97	Telephone call from PacifiCorp re: tribal elders to be interviewed.	YIN

**Table 6.4-1. Record of cultural resources agency and tribal communications (continued).**

<b>Date</b>	<b>Consultation Summary</b>	<b>Agency/Tribe/Other Interested Party</b>
10/30/97	Letter update from HRA and scope of work for additional site evaluation for Yale Lake.	OAHP, Cowlitz Tribe, YIN
11/24/97	Fax and letter follow-up inquiry from HRA regarding testing scope of work and testing schedule.	Cowlitz Tribe, YIN
11/24/97	Telephone call from HRA to follow-up on testing scope and schedule; left message.	YIN
11/24/97	Two telephone calls from HRA to follow-up on testing scope and schedule; left messages.	Cowlitz
11/25/97	Telephone call from HRA to follow-up on testing scope and schedule; left message.	YIN
1/11/98	Sample watershed study reports distributed.	OAHP, Columbia River Intertribal Fish Commission, Cowlitz Tribe, North Clark Historical Museum, NPS, USFS, YIN
1/22/98	Transmittal of Aquatics FTR.	OAHP, Columbia River Intertribal Fish Commission, Cowlitz Tribe, North Clark Historical Museum, NPS, USFS, YIN
1/28/98	Letter from Bill Iyall, Cowlitz Tribal Councilman, re: traditional use in the Upper Lewis River area.	Cowlitz Tribe
1/29/98	Transmittal of Recreation FTR.	OAHP, Columbia River Intertribal Fish Commission, Cowlitz Tribe, North Clark Historical Museum, NPS, USFS, YIN
2/5/98 and 2/9/98	PacifiCorp telephone contact re: visiting Yale Lake archaeological sites.	YIN
2/12/98	HRA telephone call to discuss tribal feedback on cultural studies for Yale; left message.	YIN
2/12/98	PacifiCorp telephone call inviting Cowlitz members to visit Yale Lake archaeological sites.	Cowlitz Tribe
2/18/98	PacifiCorp telephone call re: site visit and alternate dates.	YIN, Cowlitz Tribe
2/25/98	Telephone contact re: site visit.	Cowlitz Tribe
3/5/98	Transmittal of Cultural Resources FTR.	Cowlitz Tribe, SHPO, USFS, YIN
3/5/98	Site visit report on 3/5 to inspect archaeological sites with Cowlitz representatives.	Cowlitz Tribe
3/10/98	PacifiCorp telephone call confirming 3/11/98 site visit. YIN unable to attend.	YIN
3/11/98	HRA telephone call to discuss tribal feedback on cultural studies.	Cowlitz Tribe

**Table 6.4-1. Record of cultural resources agency and tribal communications (continued).**

<b>Date</b>	<b>Consultation Summary</b>	<b>Agency/Tribe/Other Interested Party</b>
3/11/98	Letter from Rick McClure, Forest Archaeologist, offering historical references of interest re: traditional use of the Upper Lewis River basin.	Gifford Pinchot National Forest
3/11/98	YIN telephone call apologizing for canceling site visit. Discussed FTR.	YIN
3/19/98	TCP interview: alternative approach.	YIN
4/2/98	YIN telephone call re: FTR, watershed studies.	YIN
4/3/98	Comments on Cultural Resources FTR.	OAHP
4/9/98	HRA telephone call to check to TCP study results; arranged to return call on 4/13/98.	Cowlitz Tribe
4/13/98	HRA telephone call to Carolee Morris to check Tribe's status with TCP studies.	Cowlitz Tribe
4/29/98	E-mail from PacifiCorp reporting on YIN interview status; confirmed 5/12/98 site visit with HRA.	YIN
5/4/98 and 5/6/98	Telephone calls about TCP interviews.	YIN
5/15/98	Site visit report on 5/12/98 inspection of archaeological sites with YIN representatives.	YIN
7/8/98	YIN telephone call re: TCP interview status.	YIN
8/6/98	Transmittal of draft License Application.	USFS, NPS, No. Clark Historical Museum, OAHP, Cowlitz Tribe, YIN, BIA
1/21/99	Transmittal of Request for Alternative Procedure.	FERC

#### 6.4.2 Consultation with the Yakama Indian Nation (YIN)

On April 14, 1997, PacifiCorp staff and their consultant Robert Winthrop met with Johnson Meninick, Director, YIN Cultural Resources Program, to discuss project-related investigations. It was agreed that a limited program of interviews was needed. PacifiCorp prepared a draft scope of work for the interviews, analysis, and writeup, which was approved verbally by Mr. Meninick on July 3, 1997. On July 24, Clifford Washines of the YIN Cultural Resources Program and Robert Winthrop attended a Lewis River watershed scoping session on cultural and recreational issues. Mr. Washines has attended regular watershed scoping sessions conducted in the fall/winter of 1997/98 and spring 1998. These meetings have provided an opportunity to present the YIN perspective on resource issues related to the Yale Project, including cultural resources. On August 6, 1997, Mr. Washines and other YIN representatives met with PacifiCorp staff and consultants for a tour of several of the Lewis River hydroelectric facilities. On May 12, 1998, PacifiCorp and its consultant met with Clifford Washines, Gordon Lothson, and

Gregg Kiona of YIN for a tour of 2 of the 8 known archaeological sites at Yale Lake. A tour with YIN staff of the 6 remaining sites is scheduled for April 1999.

PacifiCorp and the staff of the YIN Cultural Resources Program have agreed to a program of at least 5 interviews with tribal members to collect information on TCPs which may be affected by the project. The YIN reports that the interviews were conducted in May of 1998; however as of April 1999, PacifiCorp has not received documentation of the results.

## 6.5 CONTINUING IMPACTS

The enhancement measures proposed in Section 6.2 will protect and preserve the contributing significant aspects of the NRHP-eligible cultural resources in the Yale Hydroelectric Project APE. Continued operation of the project should have no adverse impacts on these resources.

## 6.6 IMPLEMENTATION, SCHEDULE, AND COSTS

PacifiCorp will protect and manage the archaeological, historical, and traditional cultural resources present in the Yale Project APE through methods incorporated into normal operating and management procedures, and in consultation with the Washington SHPO and other parties, as necessary. PacifiCorp will coordinate and cooperate with the cultural resource programs of other regional land management and historic preservation agencies, and will demonstrate good stewardship of cultural resources by encouraging public awareness of their value and fragility.

The procedures that PacifiCorp will follow for handling cultural resource concerns will be detailed in an interim CRMP, developed to manage cultural resources in the Yale Project prior to issuance of the operating license. The CRMP will include management guidelines and review procedures for PacifiCorp to effectively manage and regularly monitor existing cultural resources, to facilitate future project operation and development while continuing to identify and protect NRHP-eligible cultural resources, and to identify and implement appropriate staffing requirements and training. In addition, the CRMP will provide programs to reduce the threats of site vandalism and policies to maintain compatibility of cultural resources programs with other environmental and operational goals.

Development of the interim CRMP and other enhancement measures proposed above is expected to begin in 1999 and be completed by 2001. Implementation of the CRMP and other enhancements will begin by 2002. Costs are not expected to exceed \$100,000.