

Mitigating Hydroelectric Power Impacts on Cultural Resources

Stephanie S. Toothman
Robert R. Mierendorf

U.S. NATIONAL PARK SERVICE
PACIFIC NORTHWEST REGIONAL OFFICE
Seattle, Washington

One of the key issues in the negotiations concerning the relicensing of Seattle City Light's Skagit Hydroelectric Project was the mitigation of the project's impacts on cultural resources. Before these impacts could be discussed, however, these resources had to be identified. And, most importantly, all of the parties involved had to concur that there were cultural resources within the project area.

In retrospect, given the unique history of the Skagit project and the archeological record that has emerged after five field seasons, it seems difficult to conceive that there were any questions about the need to do cultural resource surveys within the project area. However, the rugged topography and spectacular scenery of the North Cascades in north-central Washington have always dominated perceptions of the area. Human impact was limited historically by these natural forces; archeologists working in the Northwest had traditionally assumed that prehistoric peoples were similarly deterred, hugging the richly abundant coastlines and avoiding the treacherous high country.

Earlier in the century, City Light actively promoted the achievements and significance of the hydroelectric project to gain the support of its ratepayers. Confronted with the relicensing requirements and compliance with the National Historic Preservation Act, the utility was apprehensive about the consequences of finding any of its properties eligible for the National Register of Historic Places. Both traditional theory and institutional reluctance were overcome by solid research that has resulted in new insights on prehistoric use and occupation of the backcountry and in renewed pride in the historic engineering and civic accomplishments represented by the Skagit project.

The project is located in one of the last areas of the region to be explored historically. Before the 1880s its rugged topography and dense forests were the domain of native peoples; later in the 19th century, with the arrival of Euroamericans, trappers and miners entered the area. In 1897 the area was withdrawn from public settlement as part of 3.6 million acres of federal forest reserves created by a presidential Executive Order. After almost a decade of administration by the General Lands Office, the forest reserves were transferred to the administration of the U.S. Forest Service, under whose jurisdiction it remained until the creation of the North Cascades National Park Service Complex in 1968.

The Skagit River is the most prominent of the five major rivers that drain the North Cascades. Rising in Beaver Lake in British Columbia, the Skagit flows first south and then west through the Cascades to Puget Sound. Between the Canadian border and the town of Newhalem, the river drops over 1,000 feet in less than forty miles. For much of this distance, as the river shifts to a westerly direction, it

is compressed into deep, narrow, rock-walled canyons and gorges. It was these features—the 1,000-foot drop and the deep canyons perfectly suited for dam construction—that earned the Skagit the appellation “River of a Million Horsepower.”

The scramble for suitable sites to produce hydroelectric power was part of the intense competition that characterized the struggle between public and private interests during the first decades of the 20th century to control the supply of electric power. In Washington, most notably in the cities of Seattle and Tacoma, the growth of municipally owned electric utilities was part of the expansion of city services fueled by the Progressive civic reform movement. Dissatisfaction with the corruption and high prices that characterized the private utilities providing electricity in Seattle gave further impetus to the municipally owned utility. The first city-owned generators driven by hydropower started in 1904; by 1910 Seattle had one of the lowest electrical costs in the country and was advertising itself as the “Best Lighted City in America.”

The ordinance establishing the city lighting department, now known as Seattle City Light, was passed in 1910. Expansion of the supply of electrical power as the underpinning for future city growth was its driving theme. The search for new sources led City Light to the Skagit, and, in 1918, after several years of political maneuvering, the city of Seattle received permission from the federal government to build a hydroelectric facility in the Skagit gorge within national forest boundaries. The complex built under this permit ultimately ensured the survival of the city's electric utility.

The four dams and powerhouses of the Skagit project were built over a fifty-year period. Newhalem came first. Built in 1920 and 1921 on

Newhalem Creek as a temporary generating station to supply power for the construction of the principal dams on the Skagit, it consisted of a 2,770-foot power tunnel that brought water from a small crib dam on the creek to a small powerhouse containing two Pelton wheels and a Westinghouse generator. It began operating in 1921 and continues to supply power to the project. The wood-frame powerhouse burned down in 1966 and has been replaced but the original equipment survived and is still in operation.

The Gorge powerplant was next. A temporary rock-filled timber crib dam was built in 1923 to raise the river thirty feet and divert the flow into an 11,000-foot power tunnel, with a head of 270 feet. It was not replaced by a masonry dam until 1950. That dam, in turn, was inundated by waters impounded by the present Gorge High Dam, which was completed in 1959. The Gorge powerhouse was completed in 1924, together with the transmission line that carried the first electric power from the project to Seattle that September.

Farther north in the Skagit canyon, the Diablo Dam, a 1,170-foot-long constant-angle arch dam, was completed in Diablo Gorge in August 1930. The powerhouse, designed in a Moderne style with elaborate and unique interior architectural features, was dedicated in 1936. Its equipment was state-of-the-art when delivered and its generators were the highest-rated in the country at the time of its construction. It was this component of the Skagit complex that was included in the Washington State Historic Preservation Office's 1988 National Register multiple-property nomination of the state's historic hydroelectric facilities.

The last of the powerplants of the Skagit project to be started was Ross. Ross Dam is a constant-angle thin

arch dam, 540 feet high. Originally planned as the first dam of the Skagit project because it was where the gorge widened to form a large natural storage reservoir, the logistics of construction in this wild and remote location forced City Light to build it last. The dam was dedicated in 1949, with the reservoir, known as Ross Lake, reaching its full height of 1,600 feet above sea level in 1953. The Ross powerhouse was completed in 1952, with power generation beginning that same year.

In addition to the powerplants and their impoundments on the Skagit River and Newhalem Creek, a complex infrastructure was built by City Light, initially to support construction of the plants and, later, their operation. Two municipally owned company towns were built. Planning for Newhalem, originally called City Camp, was begun in 1920. Laid out in a linear arrangement on a flat bar surrounded by gorge cliffs and the Skagit, the buildings of Newhalem included bunkhouses and more elaborate bungalows for the managers, public buildings to serve the needs of the residents and visiting tourists, and warehouses, offices, and various support structures serving the railroad. The railroad itself was begun in 1920 and operated until 1954, providing for most of that time the only access to the towns and the project. At the east end of the town was the Gorge powerplant and Ladder Creek Falls, elaborate gardens developed by City Light director J.D. Ross above the powerplant in pursuit of his interest in horticulture and his wooing of the tourists visiting the Skagit project. Ladder Creek Falls featured an innovative light and sound show to enhance the visitor's appreciation of the area's great beauty.

Seven and a half miles upstream from Newhalem, the construction of the town Diablo began in 1928, fol-

lowing the extension of the railroad along the canyon walls. An incline railroad was built as a spur off the main line to carry loaded freight cars up a 68% grade to the dam construction site. At Diablo, a small Forest Service camp was replaced initially by construction camp buildings. Later, as in Newhalem, more permanent barracks and cottages were built to house the operators and other members of the work force. The Depression and fundraising difficulties intervened before plans for more elaborate tourist facilities planned by Ross could be built. The Diablo powerhouse, however, remains as a unique testament to Ross' interest in public relations. The powerhouse's elevated generators and interior detailing were all part of Ross' grand scheme to awe the citizens of Seattle with the wonders of their very own utility.

Although construction of the Gorge High Dam in 1959 was the most recent major construction project at the Skagit complex, it may not be the last. In 1970 City Light filed an application with FERC to amend its license, requesting permission to raise the height of Ross Dam. The U.S. Department of the Interior, which was involved because it oversees Ross Lake National Recreation Area, requested intervenor status in the consideration of the amendment application, objecting to the potential threats to the environment that the proposed extension posed. City Light's petition was granted by FERC, however, but the project has not proceeded because of the objections of environmentalists and the government of Canada. An international agreement was negotiated that provided power produced in Canada in lieu of power that would have resulted from the raising of Ross Dam.

The Department of the Interior's involvement with the Skagit project further intensified in 1977 when City

Light filed a second application with FERC—this time for a new license to operate the entire Skagit project. The department again filed for official intervenor status. In addition to the USNPS, within whose boundaries the project is located, at least two other of the department's agencies are directly involved in the licensing negotiations: the U.S. Fish and Wildlife Service and the Bureau of Indian Affairs.

There was no question in anyone's mind from the earliest stages of the application that there were significant natural resource and recreation issues that would be considered during the application process. Cultural resource issues were not actively considered, or even identified, until much later in the process. The reasons for this include:

- ◆ The natural and recreational resources of the North Cascades were foremost in the minds of those who established and first administered the park.
- ◆ In the late 1970s the USNPS Pacific Northwest Region was not particularly attuned to the identification and management of cultural resources in "natural" parks.
- ◆ The various Native American groups whose ancestors lived in and used the resources of the North Cascades were not as organized in expressing their concerns as they are today.
- ◆ There was no one at City Light or within the city of Seattle's Historic Preservation Office who was serving as an advocate for cultural resources at the Skagit project. (In fact, the Historic Preservation Office found they did not have jurisdiction over city-owned property outside of city limits.)

In addition, it was commonly held in Pacific Northwest archeological circles that the prehistoric inhabitants of the area had settled along the coastlines of Puget Sound, the Pacific Ocean, and rivers, and only minimally utilized the wild mountainous interior. This had received confirmation as recently as 1971 and 1975, when two archeological surveys found no sites along Ross Lake. The report for the latter survey essentially stated that the area was not attractive for use by Native peoples and that few archeological sites were likely to be present.

It was not until 1986 that the first references to considering cultural resources as part of City Light's relicensing application appear in USNPS records. Memos prepared by the park's resource management specialist raised the issue of whether City Light's relicensing application was subject to the provisions of the Reservoir Salvage Act for the identification, evaluation, and recovery of archeological resources. City Light's original permits, like all those of the region, has preceded the Reservoir Salvage Act and the National Historic Preservation Act by many decades; the question of impacts on natural or cultural resources had never been considered. In 1986, however, Congress passed the Electric Consumers Protection Act, which required that archeological resources and other values be considered during the FERC relicensing process. Thus, Exhibit E of the FERC application form now requires a report on historic and archeological resources, prepared in consultation with the State Historic Preservation Officer and USNPS.

In May 1987 the park prepared a progress report, based on recent USNPS-funded surveys, updating the basic archeological database along Ross Lake. This report, which documented fifteen prehistoric sites ad-

jacent to or below the high-pool level of Ross Lake, was submitted by the USNPS to help City Light plan its relicensing effort. Combined with the draft North Cascades ethnography then being prepared under contract, this report convinced the USNPS's regional archeologist that there was an excellent probability of locating many varied and significant sites along the Skagit. Citing the requirement of Exhibit E and the responsibilities of both City Light and the USNPS for managing the cultural resources of the project area, he convinced both parties to enter into a trial memorandum of agreement under which the USNPS, with funding provided by City Light, surveyed the perimeter of Diablo Lake during the October 1987 drawdown.

Although the time was short—three days—and much of the area exposed was covered by mud and silt, and though no sites were found during this initial foray by USNPS, the precedent had been set. City Light accepted their responsibility for surveying and evaluating archeological resources and agreed to fund an additional survey along Ross Lake the following year during the extended spring drawdown.

The second year of survey confirmed what had been suspected: that prehistoric groups had used extensively the resources of the interior, penetrating the wilderness along the Skagit and through the mountain passes. The multi-year survey that followed, funded by City Light and done by the USNPS, has produced results that are changing the traditional interpretation of the prehistory of the North Cascades "wilderness." A total of 11,747 acres has been surveyed, resulting in the documentation of 144 prehistoric sites. They include lithic scatters, rock shelters, cooking hearths and related features, and chert quarries. Rather than avoiding the high coun-

try, the Native peoples were making extensive use of the upper Skagit Valley.

Following the second year of archeological survey, attention turned to documenting the historic resources associated with the project. The State Historic Preservation Officer had included the Diablo complex in its multiple-property National Register nomination, and the USNPS had prepared a determination of eligibility for Newhalem in 1978 as part of a compliance package for the construction of a nearby campground. After doing a park-wide survey of the historic resources within the boundaries of the North Cascades Complex in the mid-1980s, the USNPS also believed that the town of Diablo, the incline railroad, the gardens at Ladder Creek Falls, and the other three powerplants were eligible for the National Register. Thus, as the negotiations for the third year of the Memorandum of Agreement began, the USNPS proposed documentation of these resources. As City Light was considering the proposal, a letter arrived from FERC outlining their requirements for a cultural resource survey in eleven single-spaced pages and referring them to the USNPS for further guidance. The deal was essentially clinched.

During the next two years, while the archeological surveys continued, complete Historic American Engineering Record documentation was completed. This included an intensive survey of forty potentially eligible structures and the powerplants, record photography, and a series of measured drawings that detailed the process of hydroelectric production through the entire complex. A greatly expanded National Register nomination proposed a non-contiguous historic district running the full length of the project, including all four dams, three of the four powerhouses, large portions of the towns

of Newhalem and Diablo, the Ladder Creek Falls gardens, and the incline railroad. Thirty-eight of the archeological sites surveyed were designated for further testing; to date, twelve appear to be eligible for the National Register.

Throughout the project, both City Light and the USNPS have sought to keep Native American groups with ties to the area informed of activities. Many also had status as intervenors in the relicensing application. In addition to regular informal communications and formal correspondence, two tours of the Ross Lake project have been held involving seven of these tribal groups, from the United States and Canada, to show them first-hand some of the sites that have been found.

The survey data and National Register documentation represent the first phases of this cooperative effort. The long-term commitment to managing these resources is reflected in the comprehensive agreements signed by Seattle City Light and the intervenors, described in the articles by Richard Rutz and Jonathan Jarvis in this issue of the FORUM. Management plans for the historic resources, including historic preservation guides and historic structure reports, have been reviewed, approved, and carried out. Similar plans are scheduled to be prepared for the archeological resources following the completion of fieldwork in 1994. Stabilization of critical sites has already begun. USNPS landscape architects are currently working on documentation of the Ladder Creek Falls and Newhalem landscapes, which will be used to develop management plans for these resources that address wilderness, visual quality, and cultural resources concerns. Annual workshops on preservation issues are co-sponsored by City Light and the USNPS and a jointly produced

publication for the general public illustrating the history and prehistory of the project area is scheduled to be produced.

While the situation of the Skagit project and the resources it contains may be unique, and the coincident mutuality of park and utility interests unusual, the opportunity it presented for cooperation between public agencies is not. Our experience in the Pacific Northwest has shown how the different groups involved can work together, abandoning often adversarial positions to accomplish significant goals. The results of this multi-year cultural investigation has

shed new light on the prehistory of the region and the history of its hydroelectric development. By cooperating rather than stonewalling, by seeking areas where we could be mutually supportive, all of the parties involved have made significant contributions to the preservation of these resources in a manner that is both timely and cost-effective. These opportunities are abundant; as public managers it is our obligation to seek them out and profit from them, thus better serving our various mandates and constituencies.

Engineering Drawing Credits: All courtesy of the Historic American Engineering Record, U.S. National Park Service.

Page 9: Site plan of Skagit Hydroelectric Project. Delineator: Dale O. Waldron

Page 13: Gorge Powerhouse. Delineator: Dale O. Waldron

Page 23: Diablo Powerhouse. Delineator: Douglas Pancoast

Page 33: Diablo Dam. Delineator: Diane De Martelaere