Final Submittal

An Interpretive History of the Elwha River Valley and the Legacy of Hydropower on Washington's Olympic Peninsula

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Executive Summary

In June 2009, the National Park Service (NPS) and Olympic National Park contracted with Historical Research Associates, Inc. (HRA), of Seattle, Washington, to write an interpretive history of the Elwha Valley and the Elwha River dams. The two hydroelectric dams have stood on the Elwha River for more than eighty years produced power that spurred the growth of the pulp and paper industry in the nearby city of Port Angeles, but also blocked the passage of the once prodigious Elwha River salmon runs. After three decades of intense debate on the subject, the dams are now scheduled for removal in 2011-13, in order to restore the Elwha River ecosystem and help salmon and steelhead return to the river. In October 1992, President George H. W. Bush signed Public Law 102-95, the Elwha River Ecosystem and Fisheries Restoration Act, which set the dam removal project in motion. During the course of conducting the numerous studies in preparation for dam removal, the two dams were named eligible for listing in the National Register of Historic Places. Section 106 of the National Historic Preservation Act of 1966 requires mitigation to compensate for the alteration or removal of historic features such as these when they are owned or operated by the federal government. To address this requirement, the National Park Service, Lower Elwha Klallam Tribe, Washington State Preservation Officer, and Advisory Council on Historic Preservation entered a programmatic agreement detailing the steps required for mitigation. The mitigation agreement specified that the NPS would oversee the survey and documentation of all historic structures, and develop an interpretive plan that would ensure that the story of Elwha and Glines Canyon dams would be conveyed effectively to park visitors and the general public. This historical narrative is part of that interpretive effort.

As of this writing, the Elwha River Ecosystem and Fisheries Restoration Project is about to become the largest dam removal action in U.S. history and one of the largest NPS construction

projects ever undertaken. This book is but a small piece of the extensive mitigation activities connected to removal of the dams, which will include such momentous tasks as restoring the aquatic habitat of the Elwha River and replenishing the populations of all five species of native Pacific salmon once found in the Elwha. The project will also provide the Lower Elwha Klallam Tribe with access to their traditional sacred sites, cultural activities, and livelihoods in salmon fishing, and provide scientists an unprecedented opportunity to study the restoration of an entire ecosystem.

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Selected Chronology of Events: Elwha and Glines Canyon Dams, 1855-2009

1855	Treaty of Point No Point with Klallam, Twana, and Chemakum tribes
1856-57	First non-native settler in area that is now Port Angeles
1861	First homesteader in the Elwha Valley
1884	Indian Homestead Act
1889	Washington statehood
1891	Steam-powered electrical lighting comes to Port Angeles
1894	Thomas Aldwell begins buying land for Elwha River dam and reservoir
1897	Olympic Forest Reserve established
1905	Forest Reserves placed under the new U.S. Forest Service
1909	Mount Olympus National Monument established; Olympic Hot Springs Resort opens
1910	Aldwell and George Glines establish the Olympic Power and Development Company; initial work at Elwha Dam site begins
1911	Construction of Elwha Dam foundation blocks upstream fish passage for first time
1912	Blowout of Elwha dam foundation damages power plant and Elwha Klallam homesteads
1913	Reconstruction of dam foundation and completion of Elwha Dam
1914	Olympic Power and Development Company begins electrical transmission to Port Angeles and other customers in January
1914	Construction of state fish hatchery on Elwha River in lieu of fish passage.
1916	Olympic Power and Development reorganized as Northwest Power and Manufacturing Co.
1918	Crescent Boxboard Company, first pulp and paper mill in Port Angeles, begins operation
1919	Zellerbach Company buys Elwha power plant to run new mill in Port Angeles
1920	Washington Pulp and Paper Company mill completed and begins production on Ediz Hook; new mill built atop abandoned Klallam village and burials at Tse-whit-zen
1922	Construction of Elwha power plant annex and turbines; state hatchery at Elwha Dam site ceases operations
1924	Northwestern Power and Manufacturing Company reorganized to form Northwestern Power and Light Company
1926	Construction of Glines Canyon Dam begins; Federal Power Commission grants dam a 50-year operating license
1927	Glines Canyon Dam construction completed and power generation begins
1929	Beginning of the Great Depression
1930	Olympic Forest Products (subsequently Rayonier) opens mill in Port Angeles

1931	Olympic Peninsula Loop Highway opens
1934	Indian Reorganization Act; First Port Angeles Salmon Derby
1937	Crown Zellerbach Corporation purchases the Elwha and Glines Canyon dams
1938	Congress establishes Olympic National Park
1938	Fourteen Klallam families move onto land purchased for the tribe near the mouth of the Elwha River
1940	Expansion of Olympic National Park adds Glines Canyon Dam site and Olympic Hot Springs to park
1941	U.S. entry into World War II
1949	Port Angeles and Crown Zellerbach mill connected to Bonneville Power Administration grid
1966	Olympic Hot Springs Resort closed
1968	Crown Zellerbach files license application for the Elwha Dam; Lower Elwha Klallam Tribe gains federal recognition and establishes reservation along Elwha River
1973	Crown Zellerbach files application to relicense Glines Canyon Dam
1974	Boldt Decision reaffirms treaty fishing rights of western Washington tribes
1985	Lower Elwha Klallam tribe files suit to prevent relicensing of dams; Crown Zellerbach sells the Port Angeles mill and two Elwha dams to James River Corporation
1986	Seattle Audubon Society, Friends of the Earth, Olympic Park Associates, and Sierra Club, file motion seeking removal of Elwha River dams
1988	Daishowa purchases the Port Angeles mill from James River Company; Congress designates 95 percent of Olympic acreage as wilderness
1991	FERC releases Draft Environmental Impact Statement concluding that dam removal is feasible
1992	President Bush signs P.L. 102-495, the Elwha River Ecosystem and Fisheries Restoration Act
1996	Park issues final Implementation EIS for Elwha River Ecosystem Restoration
1999	First meeting between National Park Service, Fort James Company, and Daishowa America to discuss federal acquisition of Elwha and Glines Canyon hydroelectric projects
2000	Federal government completes acquisition of the Elwha and Glines Canyon hydroelectric projects
2004	NPS, city of Port Angeles, and Lower Elwha Klallam Tribe sign Memorandum of Understanding that identifies dam removal mitigation measures and responsibilities
2005	Park issues Record of Decision on Final Supplemental Environmental Impact Statement on Elwha Ecosystem Restoration Implementation

Introduction

The Elwha River in Clallam County is a turbulent stream that has flowed unvexed and unbinded from the mountains to the sea for countless centuries until it occurred . . . to harness the tumbling waters of the swiftest of rivers and compel it to work.
Sequim Press, April 8, 1911

On October 24, 1992, President George H. W. Bush signed Public Law 102-95, the Elwha River Ecosystem and Fisheries Restoration Act, which set the stage for the federal government to remove from the Elwha River two dams that have stood in the river's path for nearly a century. During that time, the dams generated hydroelectric power that attracted new industries and transformed the social and economic life of the Olympic Peninsula. Power from the Elwha River spurred the growth of the city of Port Angeles and its neighboring communities. But these gains came at a great cost to others, as the presence of the dams produced painful consequences for the Lower Elwha Klallam Tribe, which has lived in the Elwha River Valley since time immemorial, and for the once-prodigious runs of anadromous fish that were the staple of the Klallam diet and the central element of the Elwha River ecosystem. This history tells the story of the people of the Elwha Valley and the city of Port Angeles and describes how their social and economic connections to the river and the dams shaped their lives during the twentieth century.

The Elwha River is located on the northern half of Washington's Olympic Peninsula, descending 45 miles from its source in the heart of the Olympic Mountains to the river's mouth on the Strait of Juan de Fuca. About 83 percent of the Elwha River watershed, which includes over 100 miles of tributaries, now lies within the boundaries of Olympic National Park. The remaining five miles runs through land owned by the U.S. Forest Service, Washington State Department of Natural Resources, Washington Department of Fish and Wildlife, City of Port

Angeles, private landowners, and the Lower Elwha Klallam Tribe, which has its reservation at the mouth of the river. The river flows from south to north through lush old-growth and second-growth forests with stands of immense red cedar, Douglas fir, and western hemlock trees, which flourish in the 60 to 80 inches of rain the Elwha Valley receives each year. The forest provides important habitat for terrestrial animals that include Roosevelt elk, deer, black bears, cougars, coyotes, snowshoe hares, and numerous species of weasels, squirrels, mice, voles, and shrews.

The Elwha Valley is also home to numerous avian species, including eagles, ospreys, songbirds, waterfowl, and endangered marbled murrelets and northern spotted owls.[1] But the Elwha River gained its greatest renown from the eight species of anadromous fish that returned to the Elwha in large numbers each year to spawn in the river's main channel, tributary streams, and an upland lake. Local tribes, commercial fish operators, and anglers from around the region considered the Elwha to be the biggest salmon and steelhead producing river on the entire Olympic Peninsula. The Elwha's waters also provided excellent habitat for native trout, numerous amphibians, and a multitude of insects on which the fish and amphibians fed.

[1] Department of the Interior, Department of Commerce, and Lower Elwha S'Klallam Tribe, *The Elwha Report: Restoration of the Elwha River Ecosystem and Native Anadromous Fisheries. A Report Submitted Pursuant to Public Law 102-495* (1994), 18–20. Authors' note: At time of publication, the federally endangered/threatened status for each of these species should be rechecked.

Figure 1. Map of the Elwha River watershed on the north side of the Olympic Peninsula. The vast majority of the watershed lies within Olympic National Park. Courtesy of Olympic National Park. [Elwha Watershed_cropped.jpg]

For thousands of years, the Elwha River was free-flowing from the mountains to the strait. That changed in 1911, when a private company began construction of the first of the river's two hydropower dams, the Elwha Dam. Completed in 1913, the Elwha Dam is 105 feet tall and holds back the 2.5-mile-long Lake Aldwell reservoir.[2] The dam sits about five miles from the mouth of the Elwha River. The 210-foot-tall Glines Canyon Dam, completed in 1927, sits more than eight miles farther upstream at river mile 13.4. Behind it is the Lake Mills reservoir. In addition to storing water for hydropower production, the dams have accumulated approximately 21 million cubic yards of sediment that otherwise would have been deposited downstream in the riverbed, onto the Elwha River delta, and along the nearby shoreline of the Strait of Juan de Fuca. Originally, the roughly twenty megawatts of electricity generated by the two dams served numerous residential communities and industries on the Olympic Peninsula. But since the 1940s, the Elwha dams' power has gone to a single customer, the former Crown Zellerbach (now Nippon Paper Industries) pulp and paper mill in Port Angeles.[3]

The Power of the Elwha

The *Seattle Post-Intelligencer* journalist who wrote in 1901 that "the Elwha, sublime in its majestic and awe inspiring scenery, is destined to become a mighty power for good in the hands of ingenious humanity, for the present and future generations," was right about the Elwha River's capacity for electrical production once human hands had harnessed its energy.[4] But he also alluded to the fact that the river, with its "majestic and awe inspiring scenery," was already a

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[2] The Elwha Dam and powerhouse structures were completed by December 1913, but continuous power generation did no begin until January 1914. The delay was due to the failure of the electrical contractor, Chase Engineering Company, to complete their work on the transformer station in Port Angeles in time to receive Elwha power in December. "Elwha Juice in Town," *Port Angeles Olympic-Leader*, December 12, 1913.

[3] The dams could produce a maximum of 28 to 29 megawatts at times of peak water flows, but the average continuous production was approximately 19 megawatts of electricity. Orville Campbell, interview by Jacilee Wray, Port Angeles, Washington, April 6, 2010, transcript, 11.

[4] "Scenic Wonders of the Picturesque Elwha River," *Seattle Post-Intelligencer*, December 1, 1901.

mighty force. Indeed, for thousands of years, the river was a place of power for the Klallam Indians, as it was the source of their creation story and home to one of their most important spirits, Thunderbird. The river empowered the tribe by providing food, recreation, cultural traditions, and a transportation corridor. Because the tribe relied so heavily upon the river's resources, construction of the Elwha Dam and the resulting loss of valuable salmon runs significantly damaged the economic and spiritual foundations of the tribe.

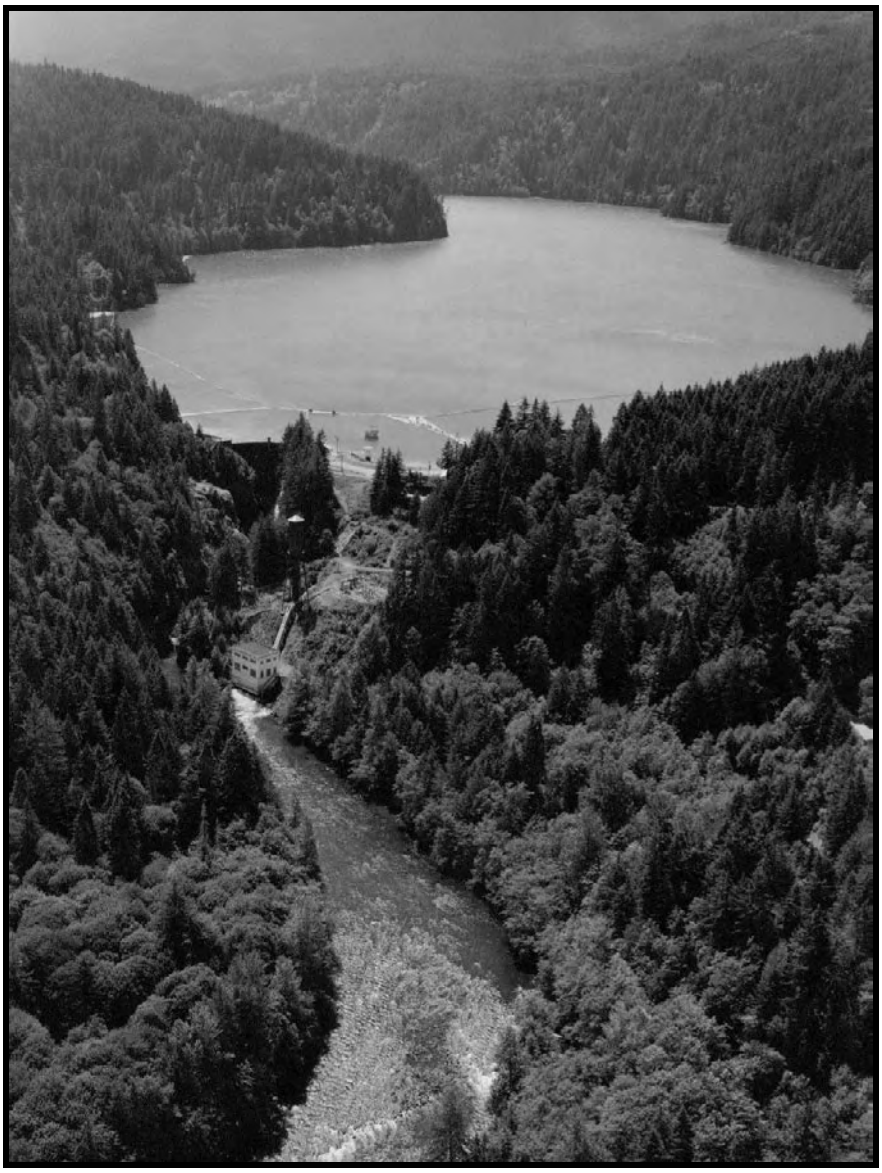

Figure 2. Aerial view of (top to bottom) Lake Mills, Glines Canyon Dam and power plant, and the Elwha River, n.d. Photograph by Jet Lowe. Courtesy of Olympic National Park. [HHWA130B1-1.jpg]

Elwha River power produced a very different story in the city of Port Angeles. Harnessing of the river for hydroelectric power helped propel the growth of the community, and shaped the lives of the people who lived and worked there. Olympic Power and Development Company helped change the face of the Olympic Peninsula in 1914, when it began transmitting electricity for residential lighting in Port Angeles, Sequim, and Port Townsend, and to power the development of new peninsula sawmills, a steel mill, pulp and paper mills, and the U.S. Naval Yard in Bremerton. The Elwha River that had sustained salmon runs and the Elwha Klallam people for millennia now nourished budding industries and sped the growth of former "frontier" communities. One twentieth-century industry in particular, the pulp and paper manufacturing business, seized upon the inexpensive and plentiful power from the Elwha and the abundance of another natural resource, Olympic Peninsula timber, to transform the economic and social life of Port Angeles. Pulp and paper mills built between 1918 and 1929 gave the city a core industry that became the basis for future economic growth. In 1926-27, construction of a second hydropower facility on the Elwha River, the Glines Canyon Dam, provided the electricity for the continued growth of the pulp and paper industry. For roughly the next fifty years, pulp and paper mills provided secure employment for hundreds of local residents and boosted the city's significance in the economy of the Pacific Northwest.

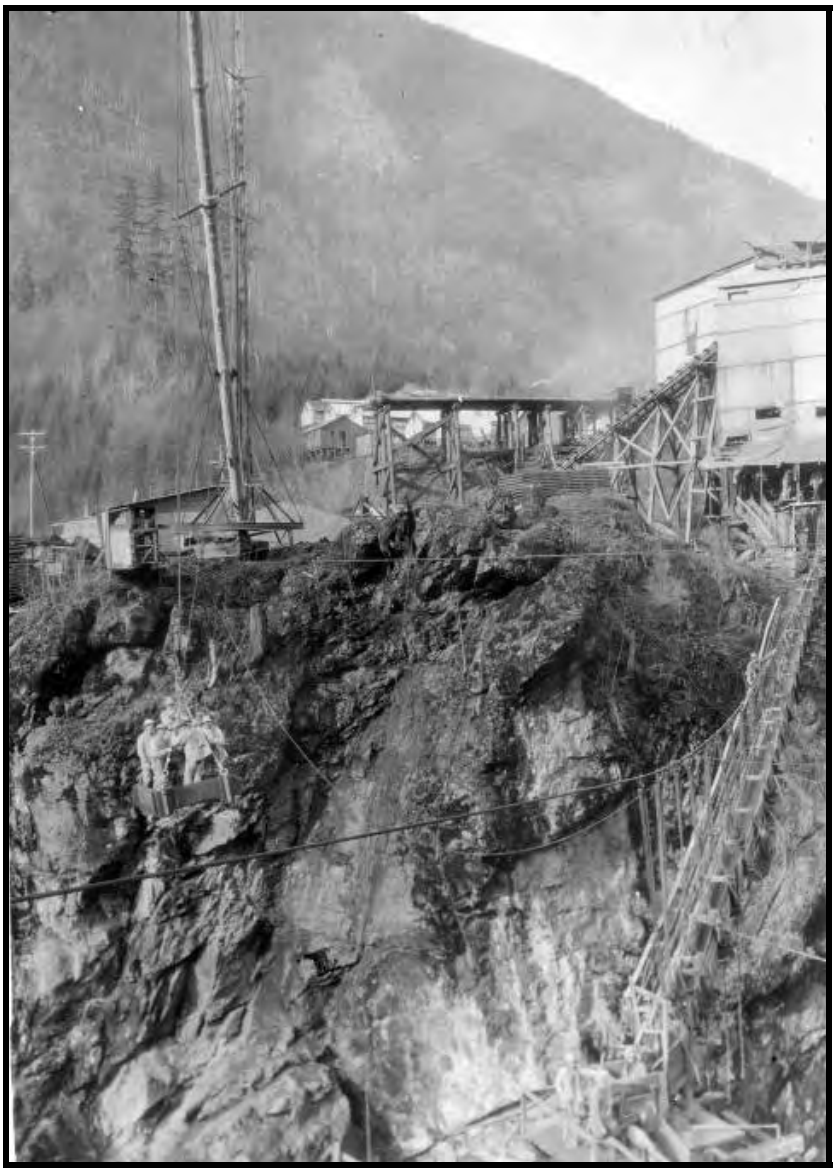

Figure 3. Construction workers hanging from a revolving crane in the early phase of building Glines Canyon Dam, ca. 1926–1927. Courtesy of Clallam County Historical Society, ONP ref. no. 2010.200.086. [201020086.JPG]

The two Elwha power plants operated with little regulation for 50 years, until the Federal Power Act required the owner, the Crown Zellerbach Company, to license the Elwha Dam and relicense the Glines Canyon Dam with the Federal Energy Regulatory Commission (FERC) in the 1970s. Challenges to the legitimacy and safety of the dams began soon thereafter, and led the Lower Elwha Klallam Tribe and several environmental organizations in the mid-1980s to call for

the removal of the Elwha River dams. After a long and controversial campaign aimed at helping salmon runs return to the river, restoring critical habitat, and providing safety assurances for the tribe, Congress passed the Elwha River Ecosystem and Fisheries Restoration Act in October 1992. The Elwha Restoration Act established the legal framework for the removal of the two dams and the subsequent environmental restoration. But another ten years transpired before Congress finally secured the necessary appropriations to pay for the project. In 2000, the National Park Service purchased the dams from the James River Company, and in 2004, representatives from Olympic National Park, the city of Port Angeles, and the Lower Elwha Klallam Tribe signed a Memorandum of Understanding that identified the measures necessary to protect municipal and industrial water supplies. In September 2010, preparation work at the dam sites commenced, keeping on schedule for dam removal to begin in fall 2011.

The history of the Elwha dams encompasses much more than descriptions of the concrete, turbines, and transmission wires that produced electricity for Olympic Peninsula consumers. The construction of the dams and their impact contain the interwoven story threads of various people, places, and events. In addition to a narrative involving the people of Port Angeles, Elwha Valley homesteaders, and the Lower Elwha Klallam Tribe, the pages of this book also encompass the activities of the work crews that built the dams; accounts of pulp and paper industry giant Crown Zellerbach and its successors; the efforts of many local and national environmental organizations; and the actions of federal agencies, including the National Park Service, U.S. Forest Service, and the Federal Energy Regulatory Commission. This book brings together these diverse stories about the river, the dams, and the people connected to them into a single narrative that describes a century of “balancing power” on the Elwha River.

Chapter 1
The Power of the Elwha River

We were told the salmon belonged to us, it was given to us by our maker. It was part of our culture . . . our way of life.
Beatrice Charles, Lower Elwha Klallam Tribe, 2002

For thousands of years, the Elwha River carved deep into the bedrock of the Elwha Valley, nourishing and sustaining an abundance of salmon runs, a rich lowland forest ecosystem, and the physical, cultural, and spiritual needs of the Klallam Indians who lived on the river's banks. Roughly 150 years ago, the river's resources fostered the settlement of a new community of non-natives who established homesteads along the Elwha River and introduced their own traditions and economic practices to the valley. About the same time, some five miles to the east of the river mouth, the frontier town of Port Angeles was beginning to grow into what would became one of the key economic centers on the Olympic Peninsula. The history of the Elwha River revolves around the history of the Klallam people, settlers of the Elwha valley, the city of Port Angeles, and other Olympic Peninsula communities that utilized the river's power to grow and prosper in the nineteenth and twentieth centuries.

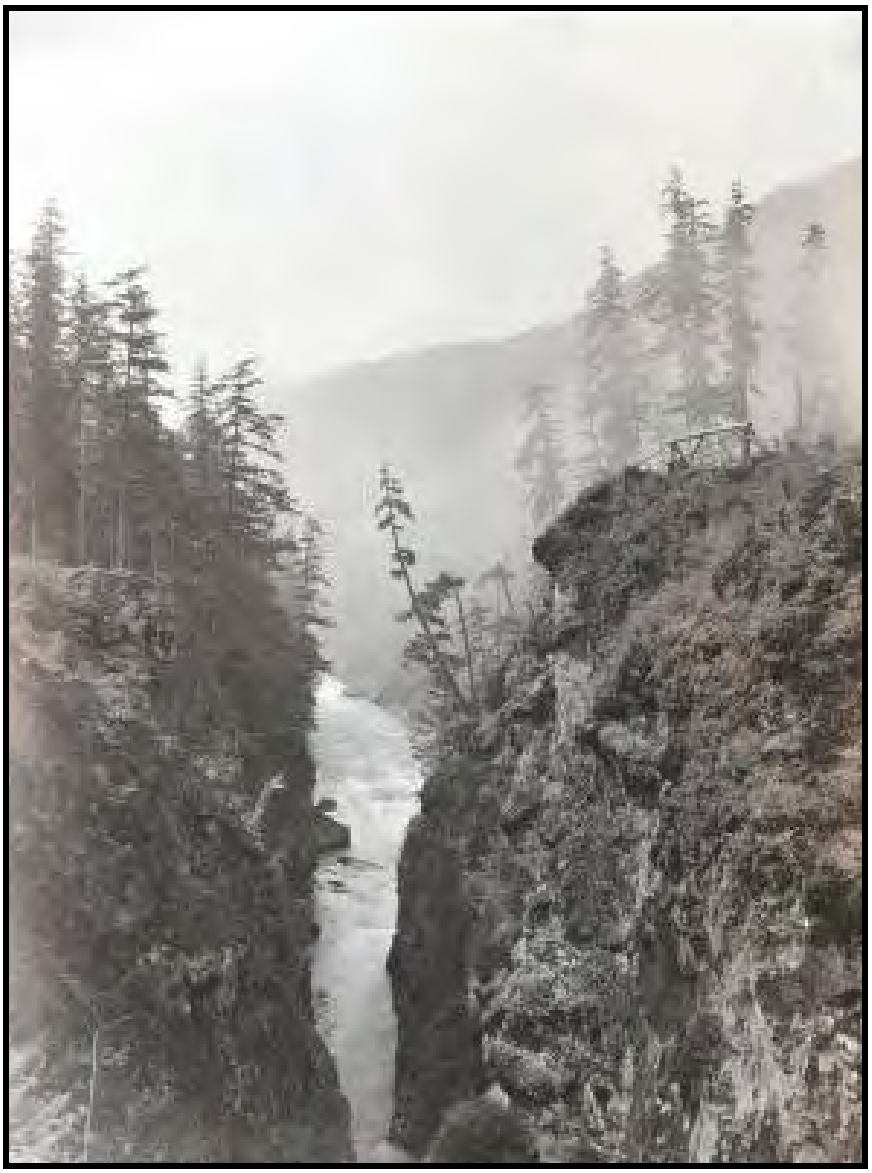

Figure 4. Elwha River. Courtesy of Olympic National Park. [elwha_21.jpg]

The Klallam People of the North Peninsula

The Lower Elwha Klallam Indian Reservation sits at the mouth of the Elwha River, on a small piece of former Klallam territory. Here the Elwha Klallam people continue to use the river's resources for their livelihood and for the cultural connection it provides to their past and for their future. The Klallam (the Port Gamble and Jamestown *S'Klallam* tribes spell it differently) people were one of several cultural groups that lived on the northern Olympic

Peninsula and both sides of the Strait of Juan de Fuca.[1] The ancestral territory of the Klallam extended along the north coast of the Olympic Peninsula from the Hoko River, west of the Elwha River, to Port Townsend and the northern reach of Hood Canal on the east. More than 30 permanent villages dotted Klallam territory, including Becher Bay, across the Strait of Juan de Fuca on Vancouver Island. Although the villages were separate political entities, inhabitants shared a common Klallam language and culture. The Klallam language is one branch of a large family of Native American languages called Salishan or Salish languages spoken by Indian tribes in a territory that encompassed what are now the states of Washington, Oregon, Idaho, and Montana, and the province of British Columbia.[2]

[1] See Wayne Suttles, "Central Coast Salish," in *Handbook of North American Indians*, ed. William Sturtevant, vol. 7, *Northwest Coast*, ed. Wayne Suttles (Washington D.C.: Smithsonian Institution, 1990), 453–56; and Jamie Valadez, "Elwha Klallam," in Olympic Peninsula Intertribal Cultural Advisory Committee, *Native Peoples of the Olympic Peninsula*: *Who We Are*, ed. Jacilee Wray (Norman: University of Oklahoma Press, 2002), 22. Here, the term *Klallam*, when used alone, refers to the collection of bands and villages that lived in the area prior to European contact. We refer to contemporary tribal entities as follows: Lower Elwha Klallam Tribe (or Elwha Klallam), Port Gamble S'Klallam Tribe, and Jamestown S'Klallam Tribe.

[2] University of North Texas, Department of Linguistics and Technical Communication, Klallam Language website, http://www.lingtechcomm.unt.edu//~montler/Klallam/index.htm (accessed July 22, 2010).

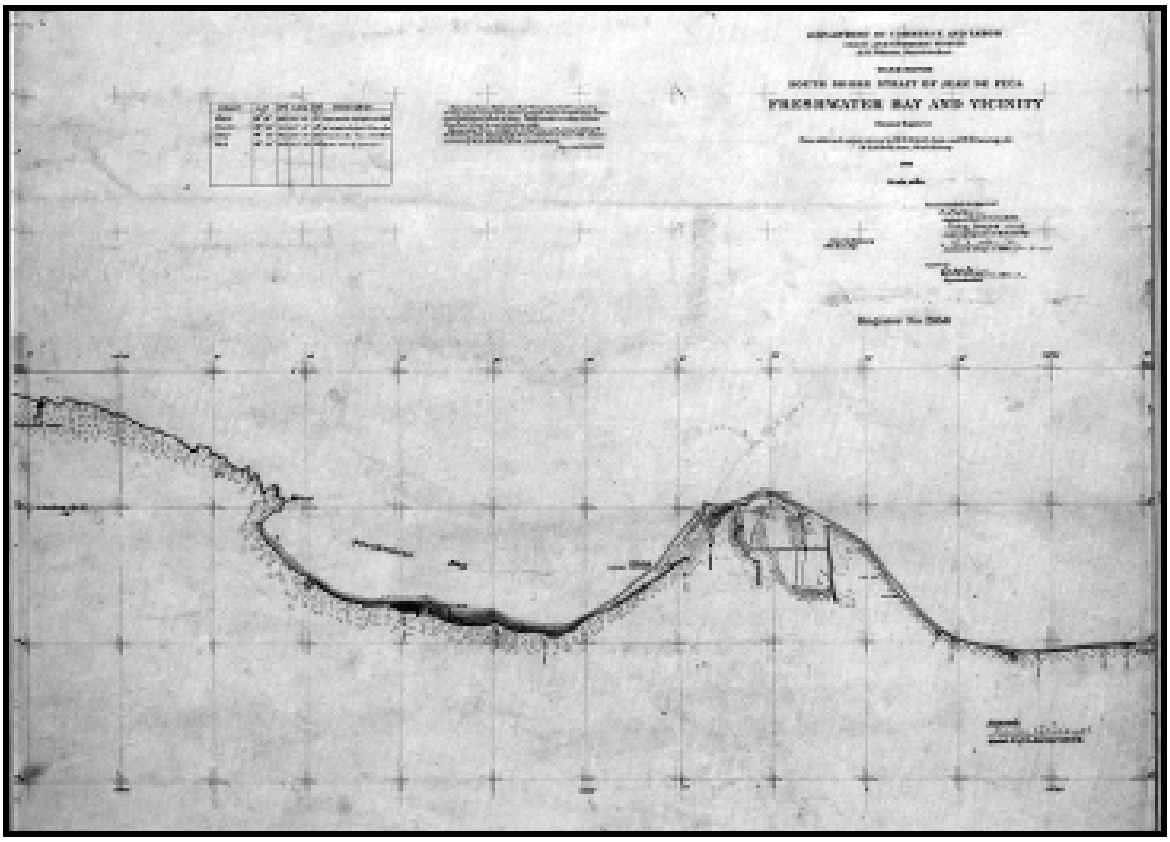

Figure 5. Map showing the mouth of the Elwha River, Freshwater Bay, and the location of the Elwha Klallam village, 1908. Courtesy of Olympic National Park Archives. [t2858.tif]

The Elwha River was at the heart of Klallam life and culture. More than ten Klallam villages sat along the Elwha River, on the Strait of Juan de Fuca east and west of the river's mouth, and at Ediz Hook.[3] Ediz Hook is a natural sand spit, formed by years of Elwha River sediment deposits, that extends from Port Angeles into the Strait of Juan de Fuca, forming Port Angeles Harbor. Descendants of families from these villages eventually formed the federally recognized Lower Elwha Klallam Tribe. The Elwha Klallam also had one permanent village roughly eight miles from the mouth of the river and made numerous trips into the high country, where they kept

[3] Randall Schalk, Lou Ann Speulda, and David Conca, "Elwha River Ecosystem Restoration Project, Cultural Resources Survey," prepared by INFOTEC Research, Inc. for the Lower Elwha Klallam Tribe, December 1996, 3.3, electronic file provided by Jacilee Wray, Olympic National Park (hereafter ONP).

seasonal and permanent camps.[4] Early historical accounts, such as that of the 1890 Press Expedition, the *Seattle Press* newspaper's exploration and publicity trek up the Elwha Valley and across the Olympic Peninsula, created the assumption that the Elwha Klallam had restricted their subsistence and cultural activities to the river valley and coastline. However, archaeological studies and recent interviews with tribal members have revealed that the Elwha Klallam frequently traveled through and occupied sites in the subalpine meadows of the Olympic Mountains, high above the Elwha River. Hurricane Hill and Obstruction Point were two of many traditional hunting and gathering grounds. The Klallam gathered berries and roots, hunted elk and other game, and traveled through the mountains to visit other peninsula tribes. One Klallam tribal member in particular, Boston Charlie, was renowned for his mountain hunting and exploration, blazing trails that later mountain travelers would continue to follow.[5]

[4] Personal communication with Jacilee Wray, ONP.

[5] Valadez, "Elwha Klallam," 22. On some occasions, tribal members crossed the Olympic Mountains to visit the Quinault Indians.

CLUES TO THE PAST

The prehistoric past of the Klallam people is revealed to us in several ways. Tribal elders have passed down traditional stories of tribal origins, beliefs, and momentous events. Artifacts found in archaeological investigations and ancient burial sites convey details about tribal cultural and spiritual practices. Recently uncovered artifacts at the site of Tse-Whit-Zen, a major village site in present-day Port Angeles, shed light on the day-to-day lives and ceremonial practices of Klallam ancestors. Tribal members working at the site carefully unearthed items that ranged from practical (tools, spear points, utensils) to ceremonial.[6]

[INSERT, if available, images of one or two items uncovered at Tse-whit-zen]

Sometimes, coincidence provides a new understanding of the Klallam past. In 1993, park visitors on a stroll near Hurricane Ridge stumbled upon a fragment of a 3,000-year-old Klallam basket at the very moment the item was melting out of a snow bank. Although some of the artifact crumbled when they tried to collect it, the family made a videotape of the item while still embedded in the snow and turned the fragments over to the park (a federal requirement).

[6] Lynda V. Mapes, *Breaking Ground: The Lower Elwha Klallam Tribe and the Unearthing of Tse-whit-zen Village* (Seattle: University of Washington Press, 2009).

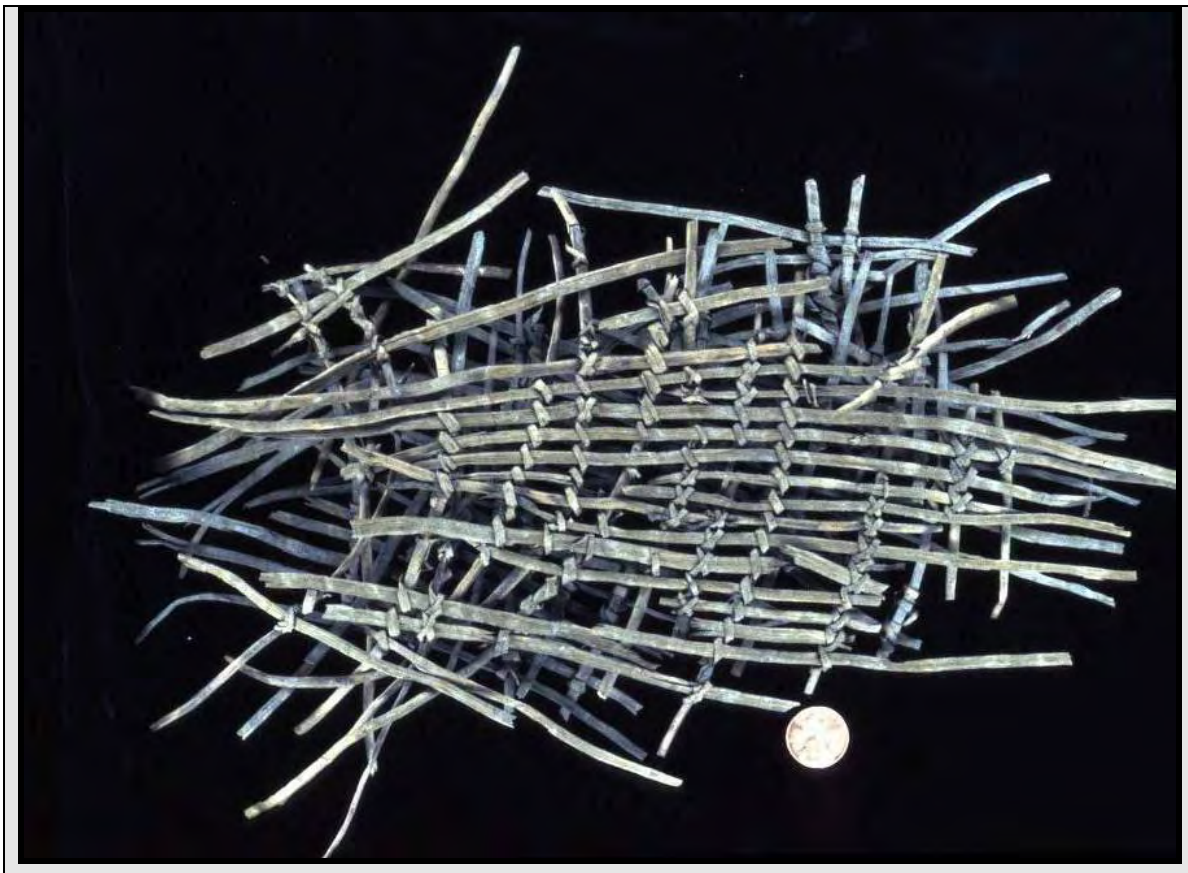

Figure 6. Fragment of an almost 3,000-year-old basket, made of roots and limbs, found by visitors to Olympic National Park, n.d. Courtesy of Olympic National Park. [10.20a.BasketFrag.jpg]

For those who know how to read the signs, the forests of former Klallam territory also provide clues to ancient Klallam activities. Klallam people used cedar, spruce, and western hemlock trees to create shelter, transportation, clothing, tools, and art. They might use an entire cedar tree to make a canoe or to cut planks for a long house. To manufacture other items, Klallam people harvested only the parts of the tree they needed. Most often, they collected bark, particularly the bark of the cedar tree, for a multitude of uses. Everything from soft diaper material to sturdy

baskets came from cedar bark. Tribal members used an adze or axe to cut into the bark and then pulled the bark away from the trunk.[7]

Figure 7. Example of a culturally modified tree. This scarred cedar was found in the Tongass National Forest of southeastern Alaska, 2009. Photograph by Eric Carlson, Historical Research Associates, Inc. [HRA_DSCN0766.jpg]

[7] Michael Lewis and C. M. Mobley, "Culturally Modified Tress of Bartlett Cove, Glacier Bay National Park, Alaska," 1994, report prepared for Alaska Region, NPS, http://www.nps.gov/glba/historyculture/upload/Lewis_Mobley_1994_CulturallyModifiedTrees_smallest.pdf (August 16, 2010).

Usually, the amount of bark stripped away allowed the tree to continue growing, but the scars remain, still visible hundreds of years later. The scars are typically triangular, rectangular, or oval shaped, depending upon the technique and type of tool used to pull the bark away. Scientists can count the number of tree rings to determine when the bark was stripped. These particular clues to the past, called culturally modified trees (CMTs), are found in the Elwha Valley, and throughout the forests of the Pacific Northwest, Alaska, and southwestern British Columbia.

Although tribal members trekked into the nearby mountains, the river was the constant lifeblood of Elwha Klallam economic and spiritual life. The river provided the tribe with food, transportation, recreation, aesthetic enjoyment, and spiritual retreat. Former tribal council member Patty Elofson called the Elwha River the cultural "core of our people," and added that "there is a lot of serenity being on the river. It's very spiritual. Our traditional stories, our birthing stories come from the river."[8] The river was the site of the tribe's creation story and the home of Thunderbird, a supernatural being who gave them strength and knowledge.[9] According to tribal legend, "Thunderbird lived in a cave and chased the salmon upriver by sending thunder and lightning toward the mouth of the Elwha."[10] The thunder and lightning signaled to the Klallam people that it was time to go fishing, because a large salmon run would soon come up the river.

[8] Patty Elofson, oral history interview by Paul Sadin, October 20, 2009, Port Angeles, Washington, audio recording and transcript, 2, Oral History Collection, OLYM-605, Olympic National Park Archives (hereafter ONPA).

[9] Valadez, "Elwha Klallam," 22.

[10] Valadez, "Elwha Klallam," 22.

Figure 8. Hand-colored postcard depicting the Elwha Canyon, prior to dam construction. Photograph by P. C. Nailer and Co., Port Angeles, Wash. Courtesy of Olympic National Park. [POL002055.JPG]

The Elwha Klallam considered salmon, "so precious . . . that they had additional restrictions for proper handling and harvesting."[11] As Elwha Klallam elder Beatrice Charles recalled in a film interview, "we were told the salmon belonged to us, it was given to us by our maker. It was

[11] Lower Elwha Klallam Tribe, Elwha Watershed Information Resource, "Lower Elwha Klallam Tribe," http://www.elwhainfo.org/people-and-communities/lower-elwha-klallam-tribe (accessed December 8, 2009).

part of our culture . . . our way of life."[12] Prior to 1910, the salmon were plentiful. In fact, the abundance of the river's anadromous fish runs and the size of some individual fish became well-known among Olympic Peninsula tribes. Tribal elder Ed Sampson recalled that the river was always filled with fish. "When I went out fishing with my grandmother," he said, "I would catch 50 fish. She would catch 100. We'd carry them back in a wheel-barrow. . . . The fish were so plentiful that there was no need to select "good" areas."[13]

SALMON LIFE CYCLE

Salmon and other anadromous fish (steelhead, bull trout) hatch in freshwater, swim to the ocean, and then return as adults to freshwater streams to lay their eggs (called spawning). The term *anadromous* is a Greek word that means "running upward." Salmon begin their lives as pea-sized eggs buried in the gravel of cold, swiftly running rivers. After hatching, juvenile salmon go through a smolt phase—a process that enables them to adapt to saltwater before they swim to the ocean. As they move downriver, smolts imprint on the sequence of odors they encounter. After maturing in the ocean, they find their way back to the waters of their birth to spawn, ending one and beginning another migration cycle. Salmon generally die after spawning, while steelhead can live to repeat the spawning cycle.[14] Five species of salmon—Chinook, coho, pink, chum, and sockeye—as well as steelhead, sea-run cutthroat trout, and sea-run bull trout were originally found in the Elwha River.[15]

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[12] Beatrice Charles, quoted in *Unconquering the Last Frontier: The Restoration of a River and a Culture*, VHS tape, directed by Robert Lundahl (Robert Lundahl & Associates, LLC, 2002).

[13] Quoted in Lane and Lane Associates, "The Conflict between Indian Terminal Fisheries and Hydropower on the Elwha River," unpublished manuscript, May 1990, 16, OLYM-1597, Resource Library, ONP.

[14] Lisa Mighetto and Wesley J. Ebel, *Saving the Salmon: A History of the U.S. Army Corps of Engineers' Efforts to Protect Anadromous Fish on the Columbia and Snake Rivers* (Seattle: Historical Research Associates, Inc., 1994), 11–12.

[15] Department of the Interior, Department of Commerce, and Lower Elwha S'Klallam Tribe, *Elwha Report*, 13.

Figure 9. Underwater view of swimming salmon. Photograph by National Park Service. Courtesy of Olympic National Park. [SalmonUnderWater.jpg]

Figure 10. Salmon eggs in stream gravel. Photograph by National Park Service. Courtesy of Olympic National Park. [SalmonEggsinGravel.jpg]

The Elwha Klallam used a number of fishing techniques that their ancestors had honed to perfection. Elwha Klallam tribal members employed a strategy, common to many Pacific Northwest tribes, of constructing a post and latticework weir across the river or its tributaries, in order to direct fish into an enclosure. Tribal members stood on a platform over the weir and used dip nets, gaff hooks, or forks to collect the salmon or steelhead. One of the most important Klallam salmon fishing sites was the confluence of Indian Creek and the Elwha River, which was the location of the permanent upriver village mentioned earlier. In addition to river fishing, Klallam Indians fished the open waters of the Strait of Juan de Fuca in their canoes, using gill nets or trolling lines to catch salmon, steelhead, halibut, cod, rockfish, and other species.[16] The abundant shellfish population, especially clams that grew in the intertidal zones of Freshwater Bay and other protected shorelines were a staple of the Klallam diet.[17]

[16] Lane and Lane Associates, "Conflict between Indian Terminal Fisheries and Hydropower on the Elwha River," 27.

[17] Department of the Interior, Department of Commerce, and Lower Elwha S'Klallam Tribe, *Elwha Report*, 14–15.

European Contact

The Elwha Klallam's first contact with Europeans likely took place when Spanish explorer Manuel Quimper anchored near the mouth of the Elwha River in Freshwater Bay in 1790. This meeting heralded the advent of a period of abrupt change for Klallam society. More frequent interactions with European and North American traders began in 1843, when the Hudson's Bay Company established Fort Victoria, a new trading post on the southern coast of Vancouver Island.[18] In the mid-1800s, three events marked a more permanent alteration of the Klallam world. First, there were deadly epidemics of European diseases, for which the native people of North America had no natural immunity. The second event—Euroamerican settlement of the peninsula—arrived much more slowly than the disease epidemics. The first permanent white residents on the north coast of the Olympic Peninsula staked homestead claims or established squatter's rights in the early 1850s, and by the 1880s, many homestead claims were filed, all the way into the upper Elwha Valley.[19] The third significant alteration to Klallam life during this period was the creation of Washington Territory in 1853.

Close on the heels of early peninsula settlement and the establishment of Washington Territory, the first governor of the new territory, Isaac Stevens, began a series of treaty councils with the various Indian groups within the territory. He intended to negotiate treaties that would move tribes onto reservations that were but a small fragment of the size of their aboriginal homelands. The tribes were to renounce their ownership claims to lands beyond the reservation,

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[18] Richard Somerset Mackie, *Trading Beyond the Mountains: the British Fur Trade on the Pacific, 1793-1843* (Vancouver, Canada: University of British Columbia Press, 1997), 276-79.

[19] Gail H. E. Evans, "Historic Resource Study: Olympic National Park, Washington" (Seattle: NPS Cultural Resources Division, Pacific Northwest Region, 1983), 76–77. Marcellas Huntoon was the first non-native to settle on the Elwha River, taking over a parcel of land where the Elwha Klallam had a village at the mouth of the river.

but were told they could keep their hunting and gathering grounds on "open and unclaimed land," and fishing rights at "usual and accustomed grounds and stations."[20]

In January 1855, Stevens and his entourage traveled to the northern Olympic Peninsula to negotiate a treaty agreement with the Klallam, Twana, Chemakum, and Skokomish tribes.[21] After the conclusion of the treaty proceedings, Indian leaders agreed to sign the treaty that ceded their former territorial claims and also restricted their movements to a small portion of the traditional homeland. In discussions with Stevens and government agents preliminary to signing the Treaty of Point No Point, Klallam leaders were led to believe that the government would provide them a reservation somewhere on the north Olympic coast.[22] But unlike their neighbors the Makah or the Skokomish, who obtained reservations within their ancestral territories, the terms of the treaty dictated that the Klallam leave their traditional homeland and move onto the Skokomish Reservation, some 80 miles away at the southern end of Hood Canal. The government expected them to leave behind their homes, sacred sites, ancestors' graves, and traditional hunting and fishing grounds to reside within the homeland of another tribe. Not surprisingly, most Klallam Indians chose to remain on the peninsula's north coast rather than move to the Skokomish Reservation. But in the eyes of the government and the non-native homesteaders who wanted to stake claims to Klallam land, the tribe had surrendered ownership of their traditional land base. The federal government quickly added the land to the public domain and opened the area for homesteading.

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[20] United States, "Treaty of Point No Point," January 25, 1855, Article 4, http://www.elwhainfo.org/people-and-communities/lower-elwha-klallam-tribe/tribal-history-and-periods/treaties (accessed January 5, 2010).

[21] Jacilee Wray, "Introduction," in *Native Peoples of the Olympic Peninsula*, 11.

[22] Wray, *Native Peoples of the Olympic Peninsula*, 19.

Figure 11. Hand-colored image of black and white photograph showing Glines Canyon and footbridge across Elwha River prior to dam construction, ca. 1900. Courtesy of Olympic National Park. [elwha_07.jpg]

Homesteading in the Elwha Valley

From the 1860s on, the Elwha Klallam shared the valley and the river's gifts with a slowly growing community of new residents, American citizens mostly of European descent.[23] Under the terms of the original Homestead Act of 1862 and the Timber Culture Act of 1873, new

arrivals hoping to make their living farming in the Elwha Valley staked claims to 160-acre parcels of land, almost always adjacent to the river and on former Klallam lands. Heads of families or individuals filed claims with the General Land Office in Olympia, after which they had five years to "prove up," which meant they had to show that they had made visible progress toward taking up residence and raising crops on their claim. If they were successful in meeting the requirements of the act, the government gave them title to the land. Thus a new source of power—the General Land Office, wielding the authority of the Homestead Act—began to alter the human geography of the Olympic Peninsula, including the Elwha Valley.

The Elwha's earliest non-Indian homesteaders settled in the Lower Elwha Valley almost simultaneous to passage of the first Homestead Act in 1862. Marcellus Huntoon became the first homestead claimant when he occupied a parcel of land at the mouth of the Elwha River that had once been part of an Elwha Klallam village. General Land Office records indicate that Huntoon first settled the site on Christmas Day, 1861, and two months later took up permanent residence in the "good, comfortable hewed-log dwelling" he built on the site.[24] Over the course of the next ten years, Huntoon also built two hay sheds and cleared 30 acres of his land. He received his title patent to the parcel in June 1873.[25]

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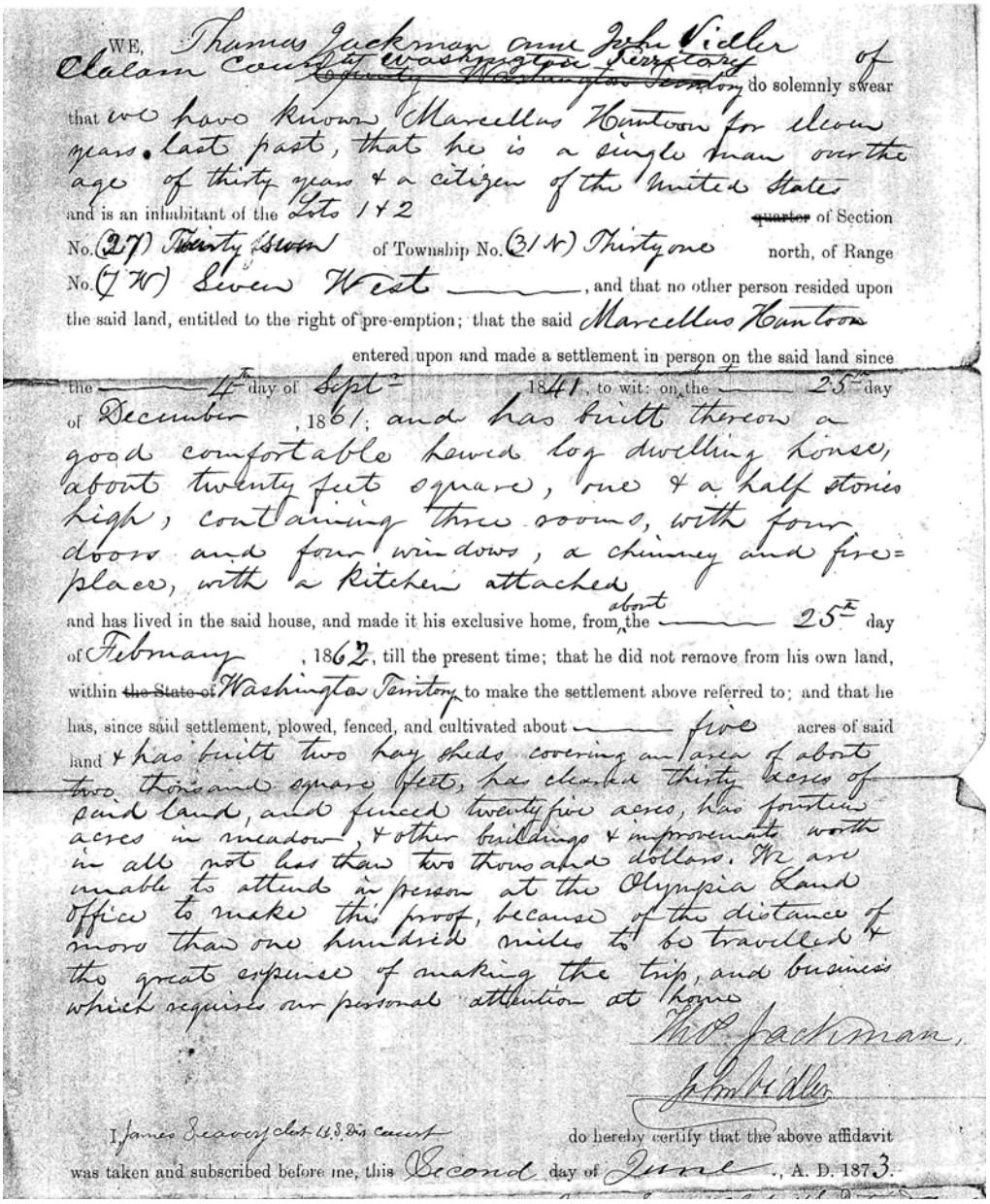
[23] One had to be a citizen to homestead.

[24] General Land Office, homestead affidavit given on behalf of Marcellus Huntoon, June 2, 1873, Olympia, Wash., Cash Entry File 4646, General Land Entry Files, Records of the Bureau of Land Management, Record Group 49, National Archives and Records Administration, Washington D.C. (hereafter RG 49, NA-DC).

[25] General Land Office, Patent Certificate of Marcellus Huntoon, June 5, 1873, Olympia, Wash., Cash Entry File 4646, General Land Entry Case Files, RG 49, NA-DC. Huntoon received the patent to Lots 1 and 2 of Section 27, Township 31 N., Range 7 W.



WE, Thomas Jackman and John Vidler of Clalam County ~~County Washington Territory~~ do solemnly swear that we have known Marcellus Huntoon for eleven years last past, that he is a single man over the age of thirty years & a citizen of the United States and is an inhabitant of the Lots 1 & 2 ~~quarter~~ of Section No. (27) Twenty seven of Township No. (31 N) Thirty one north, of Range No. (7 W) Seven West ——, and that no other person resided upon the said land, entitled to the right of pre-emption; that the said Marcellus Huntoon entered upon and made a settlement in person on the said land since the —— 4th day of Sept 1841, to wit: on the —— 25th day of December, 1861; and has built thereon a good comfortable hewed log dwelling house, about twenty feet square, one & a half stories high, containing three rooms, with four doors and four windows, a chimney and fire-place, with a kitchen attached and has lived in the said house, and made it his exclusive home, from about the —— 25th day of February, 1862, till the present time; that he did not remove from his own land, within ~~the State of~~ Washington Territory to make the settlement above referred to; and that he has, since said settlement, plowed, fenced, and cultivated about —— five acres of said land & has built two hay sheds covering an area of about two thousand square feet, has cleared thirty acres of said land, and fenced twenty five acres, has fourteen acres in meadow, & other buildings & improvements worth in all not less than two thousand dollars. We are unable to attend in person at the Olympia Land Office to make this proof, because of the distance of more than one hundred miles to be travelled & the great expense of making the trip, and business which requires our personal attention at home

Th. Jackman.

John Vidler

I James Deavers clerk U.S. Dis Court do hereby certify that the above affidavit was taken and subscribed before me, this Second day of June, A. D. 1873.

Figure 12. Affidavit testifying that Marcellus Huntoon made sufficient improvements to his homestead to obtain title to the land, June 2, 1873. The document indicates that Huntoon settled on the parcel on December 25, 1861, and moved into his permanent "log dwelling house" on approximately February 25, 1862. Courtesy of National Archives and Records Administration. [HuntoonAffidavit.jpg]

Between 1865 and 1889, a number of other non-Indian homesteaders joined Huntoon on the Lower Elwha; they included Daniel McClees, Silas Goodwin, Alden Loomer, Clara Goodwin, John McGarey, Harry Owen Daniel, Samuel Carusi, Joseph Morris, Dora Hall, and Julius Kragh. Between 1888 and 1889, Henry and Jake Hansen, brothers from Norway, and William

MacDonald became the first non-Indians to homestead in the vicinity of the eventual dam site. MacDonald also became the Elwha Valley's first postmaster.[26] Elwha homesteaders were not just men. Clara Goodwin, Silas Goodwin's daughter, made her homestead application in 1880; to "prove up," she erected a house and barn, planted fifteen apple trees, and cleared over two acres of land on her parcel.[27] Regardless of where they settled in the valley, Elwha homesteaders still faced the mammoth task of felling, burning, or otherwise clearing and hauling away the giant cedar, hemlock, and Douglas fir trees that stood on their claims.[28] To remove the stumps from a Pacific Northwest forest environment like that of the Elwha Valley, "the new farmer had to work harder and spend more money than in any other forested areas of the United States."[29]

[26] Gretchen Luxenberg and Jacilee Wray, "Final Draft—Cultural Resources of the Elwha River Valley: Elwha River Ecosystem Restoration Project Historic Context Statement, Olympic National Park, Washington," April 2010, 41–45, document provided by Jacilee Wray, ONP; and Alice Bretches Alexander, *A Pioneer Family: Homesteading the Upper Elwha River Valley* (Port Angeles, Wash.: N.p., 1993), 11–13.

[27] General Land Office, Homestead Application No. 4646 filed by Clara Goodwin, Olympia, Wash., October 25, 1880, H.F.C Case File 899, Bureau of Land Management Land Entry Case Files, RG 49, NARA.

[28] Matthew Sneddon, Olympic Peninsula Community Museum, "Northwest Homesteader," developed in partnership with the Center for the Pacific Northwest and the Department of History, University of Washington, Seattle, n.d., electronic file provided by Jacilee Wray, ONP.

[29] Richard White, *Land Use, Environment, and Social Change: The Shaping of Island County, Washington* (Seattle: University of Washington Press, 1980), 115.

Figure 13. Humes Ranch along the Elwha River, 1918. New residents quickly realized what Klallam tribal members had long known—the soil-rich bottomlands where the Elwha River's previous floods had deposited mud and debris were the best locations for settlement and raising crops. The terrain was also flatter than on steep slopes farther away from the river. Courtesy of Lyman R. Humes Collection, Olympic National Park. Ref. no. [OLYM1098.JPG]

Although several Elwha homesteaders painted rosy pictures of their parcels' agricultural productivity, they were simply repeating the common mantra found in most public narratives of nineteenth-century homesteaders throughout the American West. That is, the soil was rich and productive, crops abundant, water plentiful, and success right around the corner. In reality, non-Indians who staked claims in the valley faced less-than-ideal conditions for their traditional agricultural methods.[30] Most Elwha claims were small, annual rainfall was high, and few parcels were ready for immediate planting. After clearing their farmland of fir trees, homesteaders in Olympic Peninsula valleys such as the Elwha usually planted fruit trees and a garden. Farmers

[30] Historian Richard White explains that the soils of Pacific Northwest forests, even after the stumps are removed, are poorly suited for traditional agricultural practices (*Land Use, Environment, and Social Change*, 115-16).

helped make ends meet by taking some of their produce to Port Angeles to sell. The crops that generally grew the best on the small plots strewn with stumps and forest debris were hay, clover, and root crops such as potatoes."[31] Most Elwha homesteaders found that potatoes were their most successful crop, often producing enough both to sell and to store for lean times. But as Burt Herrick, son of an early Elwha homesteader, revealed about his hardscrabble life on the family homestead, they, "like most of the other 'farmers' of the Elwha [were] engaged in almost everything but farming."[32]

Figure 14. Dodger and Norma Bender in front of their home on the Elwha River. Photograph by Gary Wagner. Courtesy of Alice Alexander. [krouse 003.jpg]

[31] Sneddon, "Northwest Homesteader." In the case of truck garden, truck meant "trade," not a type of motor vehicle.

[32] Burt Herrick, quoted in "Early and Recent History of the Elwha District," *Port Angeles Olympic-Tribune*, September 27, 1925, News Clipping File, Newspapers 1916 to 1925, ONP Resource Library (hereafter News Clipping File 1916 to 1925).

Indeed, most Elwha homesteaders took on multiple occupations in order to survive for very long on an Elwha homestead parcel. Herrick, for instance, operated a grocery business, was a guide and packer for hunting and fishing groups in the Olympic Mountains, and managed the Elwha post office.[33] The Humes brothers also worked as guides and packers, in addition to hunting for food. Warriner Smith operated a sawmill on his homestead, while others, such as Ernst and Meta Krause and Will Anderson, grew crops, tended orchards, and raised livestock. Doc Ludden, who arrived in the valley a bit later than the original group of homesteaders, probably had the widest array of pursuits: he grew fruit trees and a variety of plants (including attempts at growing tobacco), maintained an apiary, and ran a hostel for travelers.[34]

[33] "Early and Recent History of the Elwha District," September 27, 1925.

[34] Evans, "Historic Resource Study," 77–87.

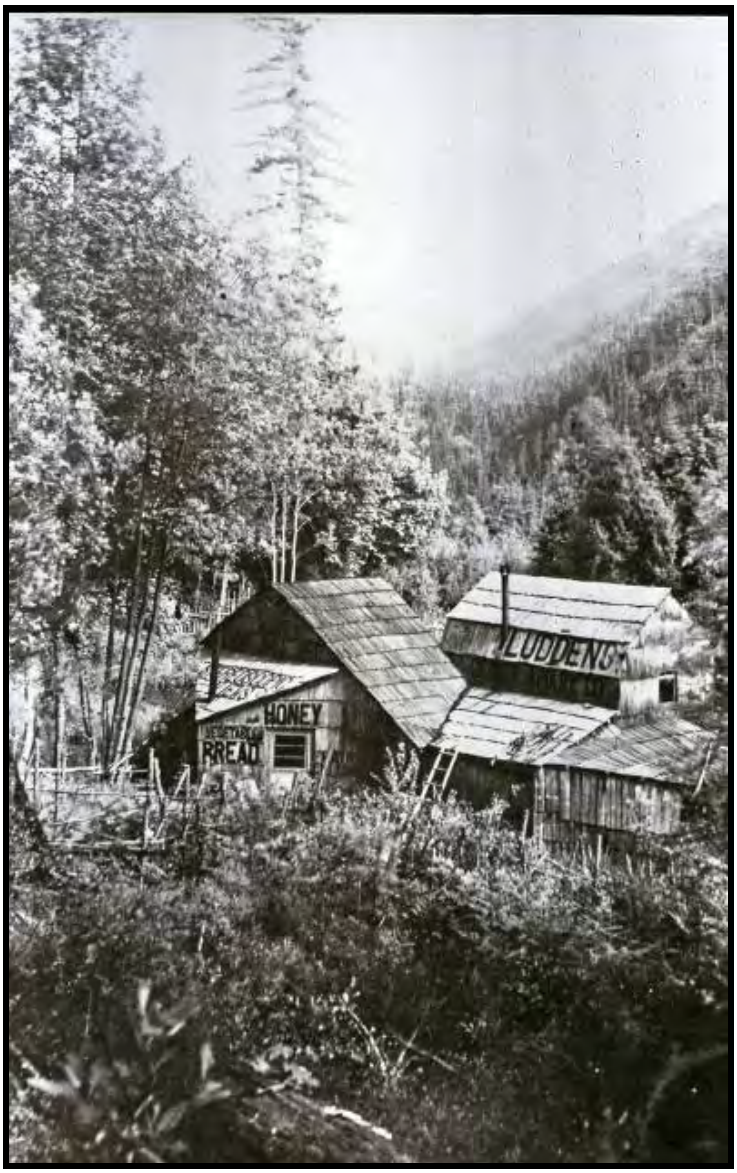


Figure 15. "Doc" A. Ludden's Geyser Apiary Co. in the Elwha Valley, ca. 1914. Courtesy of the Bert Kellogg Collection of the North Olympic Library System. [ELWA BLDX – 027.jpg]

THE HUMES BROTHERS

During their years in the Elwha Valley, the name Humes was well-known to homesteaders, local hunters and anglers, and even visitors from other regions. The Humes brothers' time on the Elwha spanned an era of significant transition in the valley community, a period when many homesteaders gave up their claims and moved away while the remaining residents took jobs in the recreation and tourism business. Will and Martin Humes, along with a cousin, Ward Sanders, arrived in the Elwha Valley in 1897, and Grant Humes came to join his brothers in 1899. Martin left the area shortly afterward.[35] While their original plan was to mine gold, the brothers soon realized that hunting and farming would prove to be more profitable endeavors. They claimed homesteads in the Upper Elwha, prepared their land for planting, and took advantage of the variety of wildlife available in the Elwha Valley.

A 1913 report on Will Humes' claim in the Olympic National Forest described his homestead: "he has about 12 acres under cultivation and has a full outfit of tools and farming implements such as plow, harrow, cultivators etc, the house is also well furnished with the ordinary conveniences and everything has the appearance of a permanent home. . . . Claimant has a substantial built four room house made of logs and shakes, one barn 50 feet–60 feet, root house and other outbuildings. The house is habitable at all seasons, a spring near the house furnishes the domestic water supply."[36]

[35] Gail H. E. Evans, *Historic Resource Study: Olympic National Park, Washington* (1983), 79-80. Sanders also left the area, though the date of his departure is not clear.

[36] Report by Chris Morgenroth, District Forest Ranger, Olympic National Forest, September 6, 1913, Record Group 49, Bureau of Land Management, Serial Patent Case File, 572288, National Archives and Records Administration. Washington, D.C.

Will Humes (l), Orlin Burdick, Grant Humes (r), Humes Ranch, 1905. Photo by Frank Pearson (Gerry Humes collection).

Figure 16. Elwha Valley homesteaders Will Humes, Orlin Burdick, and Grant Humes at the Humes Ranch cabin, 1905. Photograph by Frank Pearson. Courtesy of Gerry Humes Collection, Olympic National Park. [Humes1905-2.jpg]

In the late 1890s, "when the Humes brothers first settled on their Elwha land, it was necessary to walk ten miles in from the Elwha covered bridge and pack supplies in by pack train."[37] In order to keep food on the table, the Humes brothers tackled a variety of jobs. Will and Grant farmed in the summer, hunted in the autumn, and ran pack trains whenever someone hired them. They grew a wide variety of crops, almost all for their own larder. In 1913,

> Fully twelve acres are now producing agricultural crops, about one acre of this is in young orchard four year old a few trees about ten years old are now bearing very abundantly, one acre is planted to potatoes and other garden truck, the rest of the cultivated land is Oats Wheat and Clover. Claimant cleared and raised a small garden the first year of settlement, this clearing and cultivation has been increased

[37] "Death Comes To Grant Humes, 61, Elwha Pioneer," *Port Angeles Evening News*, April 21, 1934.

> to its present stage. There is also a slashing of six acres which has been burned over. and is now seeded to grass, this slashing is used for pasture … About 20 ton of hay and oats is raised on this land annually, this is fed to claimants' horses, cow and chickens. . . . Claimant owns nine horses and one cow, these are pastured on claimants own land and no permit is needed.[38]

Figure 17. Humes Ranch Cabin, interior, n.d. Courtesy of Clallam County Historical Society, ref. no. 988.64.24. [HumesRanchInterior010002.tif]

Hunting and fishing provided the men with subsistence and additional income. Elk, deer, and cougar were their most common prey. In 1933, Grant Humes wrote to his brother Will, who had

[38] Report by Chris Morgenroth, District Forest Ranger, Olympic National Forest, September 6, 1913, Record Group 49, Bureau of Land Management, Serial Patent Case File, 572288, National Archives and Records Administration. Washington, D.C.

returned to the East Coast in 1916, reminiscing about their early hunting exploits:

> I heard 3 or 4 hooters [grouse] and when one sounded pretty close by on the Seig bench, I sought him out and with my 'game-getter' (22 barrel) brought him to earth with a crease thru the back of his bean, the first of the season. You know we pronounced them a 'delicacy,' just as we did boiled dolly vardens in our first years here. Now, boiled fish are taboo, and I only kill 2 or 3 grouse a year–to have something fresh in place of bacon and ham . . . A tough old hooter–we now know–to be anything but a 'delicacy.' Verily, tastes change with the times and years.[39]

As more tourists began to come to the Olympic Peninsula, Will and Grant Humes became packers and guides for groups of fishing enthusiasts and mountaineers. Grant Humes was the official guide for roughly 60 members of The Mountaineers [of Seattle] during their three-week jaunt through and over the Olympic Mountains.[40] The brothers developed their pack train services into a commercial endeavor, "and during the thirty-five years of its operation, Mr. Humes became intimately acquainted with many Pacific Northwest celebrities who went to the upper reaches of the Elwha basin for summer vacations. The Humes ranch was an over-night stopping place for practically all parties enroute up the Elwha trail."[41] Grant Humes continued to farm, hunt, pack, and guide until his death in 1934 in Port Angeles.[42]

Elwha Klallam tribal members also made successful homestead claims in the valley. Initially, federal law prohibited the Klallam from making homestead claims in the valley that their ancestors had inhabited for several millennia. But the Indian Homestead Acts of 1875 and 1884 finally allowed Indians to file claims to land under terms similar to the General Homestead Act

[39] Grant Humes to Will Humes, April 19, 1927, Folder: 59 Humes Correspondence, Box 1, Philip Johnson Elwha Sources, Access. no. OLYM-428, ONP Archives.

[40] Helen Neal Radke and Joan Ducceschi, *Olympic Leaders: The Life and Times of the Websters of Port Angeles* (Port Angeles: Western Gull Publishing, 2003), 26.

[41] "Death Comes To Grant Humes."

of 1862.[43] Between 1879 and 1895, 10 Elwha Klallam obtained homestead patents, including nine in the Lower Elwha Valley—Boston Charlie, Seatcum (Shingle George), Joe Sampson, Hunter John, Alberni Jack, Charles Jackson, Moses Sampson, Charley Hopie, and Johnny George.[44] Adapting to new economic patterns in the Elwha Valley, tribal members raised a variety of crops for personal use and commercial sale; provided canoe transit for goods, visitors, and valley residents; worked in logging camps and lumber mills; sold salmon to settlers; and continued to engage in traditional hunting, gathering, fishing, and cultural practices.

[42] Evans, *Historical Resource Study*, 83-84.

[43] Under the terms of the 1875 Act, only those tribal members who took up "civilized pursuits" and cut off relations with their tribe could become citizens and obtain land under the Homestead Act. A second Indian Homestead Act in 1884 removed those restrictions and extended the trust period, during which the U.S. held the parcel in trust for the sole benefit of the Indian claimant or heirs, to 25 years. Act of July 4, 1884, *U.S. Statutes at Large* 23 (1884): 96.

[44] Luxenberg and Jacilee Wray, "Final Draft—Cultural Resources of the Elwha River Valley," 15-17.

Figure 18. Hunter John homestead on the Elwha River, 1915. Elwha Klallam tribal member Hunter John established a farm on this parcel in the mid-1870s, eventually receiving a homestead patent. After he died in 1912, the homestead went to his granddaughter Maggie Jackson and grandson Charley Sampson. Courtesy of Beatrice Charles. [1915 Homestead..sharper.jpg]

With the growth of the non-Indian population of the valley and nearby Port Angeles during the 1890s, tribal fishermen were able to sell fish to commercial fish packers in addition to what the Elwha Klallam kept for their own consumption. When the Port Angeles Packing Company opened in 1892, Klallam fishermen began to sell some of their catch directly to the cannery as well as to other commercial fish processors.[45] Thus by the end of the nineteenth century, the Lower Elwha Klallam Tribe's power as arbiters of their environment was diminished, but they remained a strong people living by the river that had sustained them for untold generations.[46]

[45] Lane and Lane Associates, "Conflict between Indian Terminal Fisheries and Hydropower on the Elwha River," 29.

[46] Lane and Lane Associates, "Conflict between Indian Terminal Fisheries and Hydropower on the Elwha River," 29–30.

Figure 19. Interior view of cannery. Courtesy of the Bert Kellogg Collection of the North Olympic Library System. [PTAN BLDN – 015.jpg]

In the late nineteenth century, a new, more diverse Elwha Valley community emerged. Homesteaders, seeking to make their lives more comfortable and their homes easier to access, built new roads, schools, and stores. By the early 1900s, the Elwha Valley supported Herrick's grocery store, a school, a post office, a grange hall, and a sawmill. Elwha homesteaders' most popular diversion was located in the picturesque valley of Boulder Creek, an Elwha tributary, where several small springs of hot water spilled from the hillside. The Elwha Klallam had long known of the springs and used the waters for medicinal purposes. In 1907, Billy Everett, whose mother was one-half Klallam, Charles Anderson, and Thomas Farrel began to develop the springs into a rustic resort and built the first trail to the springs. Before long, Farrell and Anderson pulled out of the operation, leaving it to Everett, his wife Margaret Schoeffel, and her

brother Karl Schoeffel to carry on.[47] They laid claim to the mineral rights, "constructed wood tubs, mud baths, a cabin and bathhouse," and opened Olympic Hot Springs as a rustic leisure destination in 1909.[48] Four years later, the two men obtained an 11-acre lease from the U.S. Forest Service in order to develop the hot springs as a full-fledged commercial resort. An account of a visitor to the hot springs in 1913 expresses the primitive conditions of the resort in its early years:

> The cabins were more like tents, with wooden floors and sides, and pyramid-shaped tents on top. . . . We enjoyed the pool. It was real primitive. Just a hole dug out and filled with hot mineral water. One end had smooth logs running down into the pool and I remember hanging onto a log at the top and then letting go and sliding into the water. Although we wore swimming suits, only all men or all women could be in the pool at any one time. If the women were in the pool a white shirt was hung on a limb. A red shirt was hung out for the men.[49]

The trip to Olympic Hot Springs during the early years of the resort was far from leisurely. Visitors had to make an 11-mile hike or horseback ride over a rugged trail to reach the resort. Yet it was the highlight of many Elwha Valley outings for city residents and homesteaders alike.

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[47] Alice Bretches Alexander, *Early Settlers on the Upper Elwha* (Port Angeles: Pen Print Incorporated, 2009), 51-52.

[48] NPS, Olympic National Park, "Cultural Landscapes Inventory, Olympic National Park," draft document, 1991, ONP Cultural Resources Division; and Evans, "Historic Resources Survey," 281.

[49] Emily Lewis Miles, *The Evolution of Emily: Frontier Child to Modern Woman* (Port Angeles: Creative Communications, 1981), 41–42.

Figure 20. First swimming pool at Olympic Hot Springs, prior to construction of a concrete pool, ca. 1910. Courtesy of the Bert Kellogg Collection of the North Olympic Library System. [ELWA ACTV – 001.jpg]

The arduous trek to Olympic Hot Springs underscores the fact that transportation up and down the valley was one of the most difficult aspects of life on the Elwha. While the Elwha Klallam were proficient at canoeing the river, non-Indian homesteaders had to rely on rough trails, rudimentary bridges, and slow-moving ferries (when bridges washed out) to move about. Even the trip to Port Angeles by way of Pine Hill and Coleman ranch followed "what at the time passed for a country road but which in reality was far from being a road."[50] Locals erected bridges across the river, but several washed away during the river's floods. Patty Elofson described how her grandfather, Joe Sampson, ran a small ferry across the Elwha River after the collapse of the foundation of the Elwha Dam washed out the footbridge in 1912.[51] The county

[50] "Early and Recent History of the Elwha District," *Port Angeles Olympic-Tribune*, February 20, 1925, News Clipping File 1916 to 1925.

[51] P. Elofson interview, 2.

paid him $50 a month to run the ferry until a new bridge was erected.[52] During that time, the ferry was the key transportation link for valley residents who had to cross the river.

Figure 21. Bridge across the Elwha River, prior to 1910. Courtesy of Olympic National Park. [Image32.jpg]

Despite the hard work homesteaders put into establishing their land claims, constructing roads and buildings, and creating a social scene, most of them gave up on their claims or struggled to make ends meet. The Elwha Valley community never grew beyond the high point

[52] Luxenberg and Wray, "Draft—Cultural Resources of the Elwha River Valley," 55-56.

reached in the early 1890s, and soon afterward the population began to shrink away. When the Laufeld family came to the Elwha Valley in 1898, they found most of the earlier homesteads abandoned. Their nine-year-old daughter Olive was often lonely because there were no neighbors close to their farm.[53] Her father eventually took a job as a ranger with the newly established U.S. Forest Service, as did a number of other settlers on the Olympic Peninsula. The former valley community based on homestead settlement, small commercial enterprises, and farming was withering just as a new era of federal administration and corporate hydropower development of the valley was about to begin.

Olympic Forest Reserve

At the end of the nineteenth century, the federal government increased its role in the affairs of the Olympic Peninsula. In 1897, President Grover Cleveland established the Olympic Forest Reserve to protect the vast coniferous forests of the peninsula; the reserve's original boundaries encompassed 2,188,800 acres of peninsula forestland including the upper reaches of the Elwha Valley above Haggerty Creek. Congress had laid the groundwork for the Olympic Forest Reserve when it established the Forest Reserve Act of 1891. The act gave the president authority to set aside large tracts of public domain lands to protect timber stands and rangeland from overcutting and to provide a steady source of timber for the United States. On March 30, 1891, President Benjamin Harrison created the first forest reserve—Yellowstone Park Timber Land Reserve—in Wyoming.[54] By 1905, roughly 63 million acres of the western states had been designated as forest reserve lands. That year, Congress created the U.S. Forest Service (USFS) to manage the quickly growing system of reserves; two years later, the new organization's first

[53] Alexander, *Early Settlers on the Upper Elwha*, 37.

[54] Forest Reserve Act of 1891 (26 Stat. 561); and U.S. Forest Service, "Reserve Act and Congress: Passage of the 1891 Act," http://www.fs.fed.us/global/wsnew/fs_history/issue12.doc (accessed December 17, 2007).

chief, Gifford Pinchot, replaced the term "forest reserves" with a new name, "national forests."[55] Olympic Forest Reserve thus became Olympic National Forest in 1907, by which time President William McKinley had reduced its size to approximately one million acres.[56]

Forest reserves were similar to the national parks in that they set aside large swaths of undeveloped land for the benefit of the American people. But there were also important differences between the two. Forest reserves and the USFS were part of the Department of Agriculture (rather than Department of the Interior), underscoring the new agency's emphasis on providing utilitarian benefits that included clean water, recreation, and timber harvests. National forests "reserved" forested lands for future public use and commercial timber harvests, while national parks "preserved" lands for future public use and aesthetic enjoyment.

On March 2, 1909, President Theodore Roosevelt gave the heart of the Olympic Mountains additional protection by creating Mount Olympus National Monument. Although it did not have the same preservation status as a national park, Roosevelt was able to utilize the authority of the Antiquities Act of 1906 to protect some of the upland forests from cutting and to provide a refuge for the herds of Olympic elk that Roosevelt admired.[57] The USFS introduced another group of residents to the Elwha Valley; forest rangers and their families joined the Elwha River community.

For people with a connection to the Elwha River, especially the Elwha Klallam Tribe, the remaining homesteaders in the Elwha Valley, the city of Port Angeles, and other north peninsula communities, construction of the first Elwha Dam brought tumultuous change. For the remainder

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[55] David A. Clary, *Timber and the Forest Service* (Lawrence: University Press of Kansas, 1986), 2–4; see also Samuel P. Hays, *Conservation and the Gospel of Efficiency: The Progressive Conservation Movement, 1890–1920* (Cambridge, Mass.: Harvard University Press, 1959).

[56] Hal Rothman, "American Eden: An Administrative History of Olympic National Park," final draft manuscript, July 2006, 33–34, electronic file provided by Jacilee Wray, ONP.

of their lifetimes, the dam would alter their relationships with the Elwha River. Dam construction changed the prior course of commerce, transportation, and subsistence living in the Elwha Valley and the emerging towns and cities of the region. Hydropower was about to spur the growth of cities and new industries, while at the same time the older communities of the Elwha Valley were diminishing.

[57] Rothman, "American Eden," 36.

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Chapter 2
Elwha Dam Construction Powers Industrial and Community Growth, 1900–1914

The story of power proved to be a battle royal from start to finish.
Thomas Aldwell

In early twentieth-century America, hydroelectric dams were the technological and aesthetic equivalent of medieval castles, whose thick, soaring walls were meant to hold back attacking armies and to convey the absolute power of a monarch or lord. As dams grew bigger and more complex, the nation's citizens and political establishment became enthralled with what historian David Nye called the "American technological sublime," a public fascination with feats of construction and engineering, best exemplified by suspension bridges and hydropower dams of that era.[1] It was common for newspaper reporters and guidebook authors to exclaim about dams "taming" the ancient power of rivers, and revealing humankind's superiority over nature. In a similar vein, when towns and cities began to light their streets and homes with electricity, civic leaders and residents saw the modern technology as a sure sign that their hometown had come of age. When a private company announced plans in the early 1900s to construct a hydroelectric dam on the Elwha River, city officials, newspaper editors, and community members in Port Angeles and other Olympic Peninsula towns gave it their wholehearted support.

[1] David Nye, *The American Technological Sublime* (Cambridge, Mass.: MIT Press, 1994).

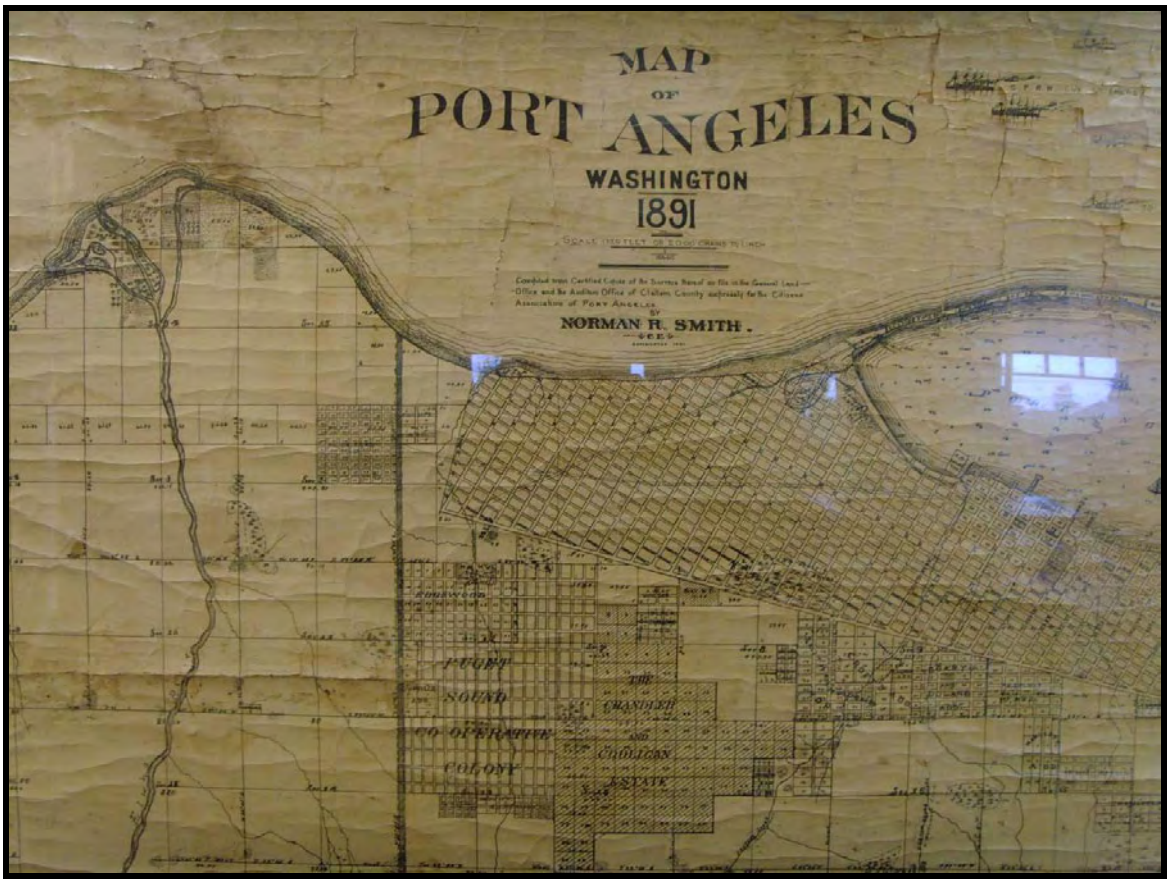

Figure 22. Map of Port Angeles, showing locations of Ediz Hook, platted downtown area, Puget Sound Cooperative Colony, and the Elwha River (far left), 1891. Courtesy of the North Olympic Library System. [SNV30001.JPG]

Prior to construction of the Elwha Dam, important new technologies had emerged that would enable the dam to produce enough electricity to power the industrial and civic growth of the Olympic Peninsula. A new type of wire that transmitted electricity via alternating current (AC), instead of direct current (DC), carried electricity produced in the Elwha power plant to nearby Port Angeles but also to customers as far away as the Bremerton Naval Base. The technological advances arrived just as Port Angeles was beginning its transition from wilderness outpost to emergent city. The timing of these intersecting events and technologies helps explain why the Elwha Dam played such a crucial role powering the life and growth of Port Angeles and other peninsula communities.

Thomas Aldwell and Elwha River Power

Thomas Aldwell, known for boasting about his accomplishments, wrote that he was the first to realize the potential of harnessing the Elwha River to produce hydroelectric power. In 1890, Aldwell, a Canadian citizen, left his banking job in Ontario to "go West" and find adventure. He arrived in Port Angeles aboard the steamer *George E. Starr* in 1890, seeking personal challenges and financial success. He explored his possibilities in the larger cities of Seattle and Port Townsend, but chose Port Angeles as his ultimate destination. He wrote, "I wanted something even newer, some place where only the potentials existed, unrecognized perhaps by other men."[2] Aldwell and other newcomers saw in the rawness of the town and the surrounding Olympic Peninsula a place where they could turn a profit and make a name for themselves by applying their entrepreneurial spirit to the growth of a community and the commercial development of a region.

After staking a squatter's claim to government land on a bluff above the waterfront, which he gained legal possession of a year later, Aldwell set out to make his fortune. He tried his hand at a number of vocations, including banking, running the local newspaper, and real estate speculation. He also served as a Port Angeles customs officer, county auditor, shopkeeper, and railroad lobbyist. During each of those endeavors, Aldwell promoted Port Angeles as a city of remarkable promise, and remained on the lookout for new enterprises that could bring him success. In addition to buying town lots, Aldwell also purchased and proved up on a parcel of land along the Elwha River, roughly five miles upstream from the river's mouth. In his autobiographical account of his exploits, *Conquering the Last Frontier*, he recounted that he valued the river property as a recreational and aesthetic haven. Aldwell wrote that the parcel's

[2] Aldwell, *Conquering the Last Frontier*, 17.

"needle-covered earth, the patterned tree branches, the sky, the fresh bracing woods' smell—all seemed to make me part of the earth I rested on."[3]

PORT ANGELES 1890

When Thomas Aldwell stepped off the steamer *George E. Starr* onto the Port Angeles harbor dock, he thought it looked to be a "wild frontier town." Many others arriving at that time might have said the same. Inez M. Isbell, who came to Port Angeles with her family in 1890, described the place to relatives back east, "I do not think it is a very pretty city for there are so many log huts and shake shanties scattered all over it. And it is only a few years [ago] when the whole town was forest. Now the town is covered with stumps and bare half burned tree trunks that spoil the look of the town. But of course they will get them out some day."[4] Inez also described the haphazard layout of the town, with businesses built over the water on pilings, and the residential area on the hill overlooking the beach.[5] The city's population was roughly 1,300, but the town already boasted 16 saloons and an opera house.[6] Port Angeles residents had migrated there primarily from Michigan and other states of the upper Midwest, where they worked in the timber industry. They made their way west to the untapped forest resources on the Olympic Peninsula after the forests of the Great Lakes region were depleted.[7]

[3] Aldwell, *Conquering the Last Frontier*, 69.

[4] Quoted in Phrania Jacobson, interview by Emily Thomas, June 1995, transcript, Oral History Collection, OLYM-605, ONPA, 11.

[5] Jacobson interview, 10–11.

[6] Aldwell, *Conquering the Last Frontier*, 18.

[7] Keith Thompson, interview by Russ Dalton, December 15, 1983, Port Angeles, Washington, transcript, Oral History Collection, OLYM-605, ONPA, quotation on 4, see also 2, 11–12, and 17.

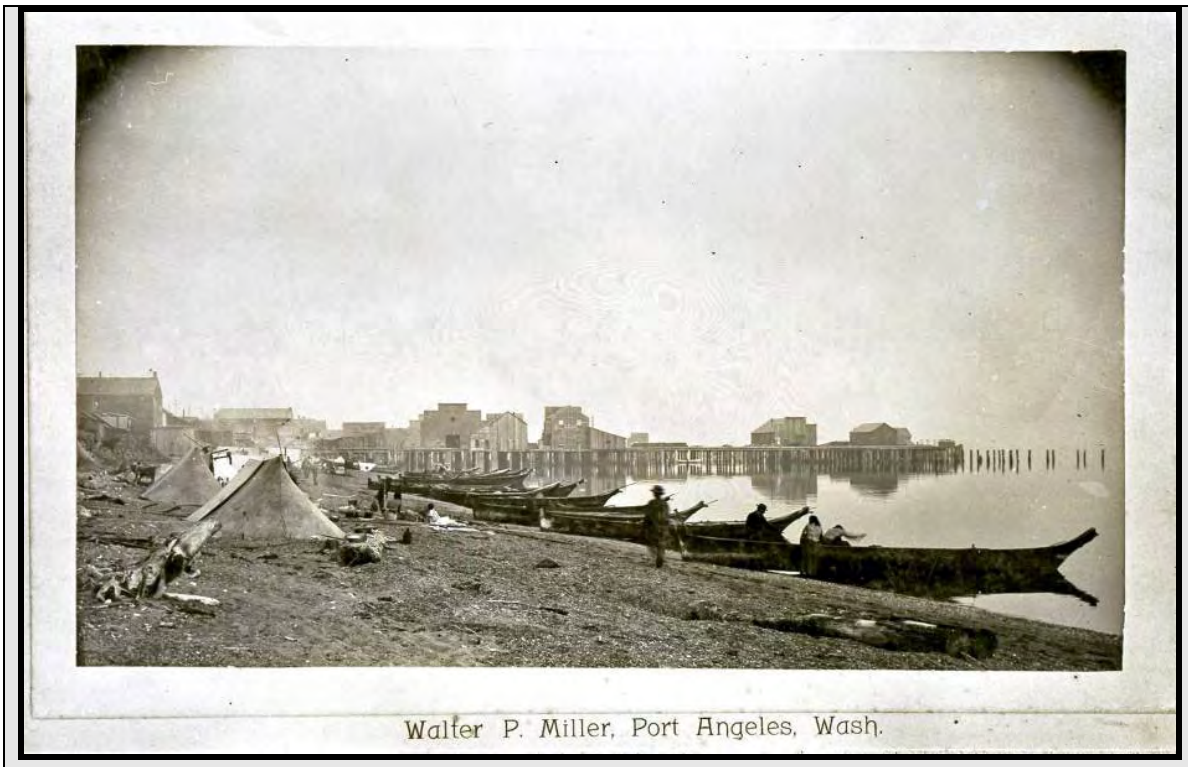

Figure 23. Unidentified tribal members camped on Hollywood Beach at the foot of Lincoln Street, ca. 1900. Courtesy of Bert Kellogg Collection of the North Olympic Library System. [INDN ACTV – 002.jpg]

Among the city residents were Klallam tribal members living in tents or houses along the beach to the south of the wharves, and on the sand spit of Ediz Hook, near the remnants of one of their former villages, Tse-whit-zen. Visitors from other tribes also stayed on the beach when they came to exchange trade goods. When Aldwell arrived, "between 200 and 300 Indians were living and camping on the beach in front of the town. Most of them had large canoes, handhewn from logs, and some practically lived in their canoes."[8] The majority made their livelihood fishing, though others worked in logging camps or other jobs.

[8] Aldwell, *Conquering the Last Frontier*, 18.

Figure 24. Front Street, looking to the north, ca. 1888. Courtesy of the Bert Kellogg Collection of the North Olympic Library System. [PTAN BLDX – 064.jpg]

Figure 25. Front Street, looking to the north, ca. 1889. Courtesy of the Bert Kellogg Collection of the North Olympic Library System. [PTAN BLDX – 053.jpg]

Figure 26. Front Street, looking to the northwest, ca. 1890. Courtesy of the Bert Kellogg Collection of the North Olympic Library System. [PTAN BLDX – 008.jpg]

Figure 27. View from harbor looking south to Port Angeles waterfront, showing piers and buildings along Front Street, ca. 1893. Courtesy of Olympic National Park. [Rotation of PA_BayView1903.TIF]

But Port Angeles, with the only deep, protected harbor on the entire peninsula, had an "up-and-coming" feeling to it as well. A local newspaper wrote that it was in 1890 that "Port Angeles first commenced to grow into prominence and give promise of becoming a city of importance."[9] That year, the city became the seat of government for Clallam County and began to show signs of rapid growth. The population increased from roughly 1,000 in 1890 to 3,000 residents in just two years, and the corresponding building boom resulted in the construction of roughly 200 new

[9] "The Electric Lights; Port Angeles Illuminated by Electricity," *Port Angeles Tribune*, February 19, 1891, reprinted in Crown Zellerbach Corporation, *1890–1949: More Power to You . . . Port Angeles and Clallam County*, brochure (Port Angeles: Crown Zellerbach Corporation, Port Angeles Division, [1949]).

structures by 1892, including the city's first opera house, as well as three additional wharves on the harbor. Larger businesses began to set up shop in Port Angeles, further convincing locals that the city's rise to prominence was inevitable. The first cannery opened in 1891, increasing local employment opportunities and creating a new olfactory experience for nearby residents.

Figure 28. The Port Angeles business district, looking east down Valley Street, in 1891. This photograph shows First Street being filled. Courtesy of the Bert Kellogg Collection of the North Olympic Library System. [PTAN BLDX – 011]

City residents found the living conditions and social climate improved as well. On February 14, 1891, Washington Electric Light and Motor Company fired up a steam-driven power plant and began producing electricity to light city streetlamps and a few of the homes in town. A *Port Angeles Tribune* reporter said, "the city presented the appearance of being studded by stars."[10] However, the company's electric rate of $5.40 per month was far beyond most residents' reach.

[10] "The Electric Lights."

In 1894, during his stint as manager of the local newspaper, Aldwell met R. M. Brayne, owner of an Oregon pulp mill. Brayne was looking for a possible power-generation site to provide electricity for a pulp mill on the peninsula. Aldwell and Brayne discussed how a mill of that kind could be the industrial driver for the growth of Port Angeles. At that point, Aldwell said, he saw the Elwha River as "a source of electrical power for Port Angeles and the whole Olympic Peninsula," a realization that "magnetized all my energies."[11] He suggested that his own Elwha property, where the fast-flowing stream ran between steep canyon walls, would be the ideal site for the hydroelectric facility. Aldwell seized the opportunity. He and Brayne entered into a partnership aimed at constructing a dam at Aldwell's homestead site that would create a reservoir filling the valley upstream. They envisioned that the potential water-storage capacity could generate 10,000 horsepower to produce electricity for a mill, other industries, and residents of Port Angeles.[12]

With or without Aldwell, the canyon would have prompted interest as a possible site for a hydroelectric dam. Indeed, the same year Aldwell hired hydraulic engineers to conduct a survey of the river canyon for its hydroelectric potential, the U.S. Corps of Engineers undertook a similar study of their own accord.[13] The decade of the 1890s was the outset of the dam-building "Reclamation Age" of water development in the western United States, which centered on the creation of irrigated gardens out of previously arid landscapes and the construction of dams for hydroelectric production.

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[11] Aldwell, *Conquering the Last Frontier*, 77.

[12] David Louter, "Elwha River Hydroelectric System, Port Angeles Vicinity, Clallam County, WA," Historic American Engineering Record report, HAER WA-130 (1995), 15.

[13] Virginia G. Egan, "Restoring the Elwha: Salmon, Dams, and People on the Olympic Peninsula, A Case Study of Environmental Decision Making" (PhD diss., Antioch University New England, 2007), 9.

Figure 29. Panoramic view of Port Angeles after the Townsite Reserve was opened, 1897. Courtesy of the Bert Kellogg Collection of the North Olympic Library System. [PTAN VIEW – 008.jpg]

Aldwell was enthusiastic about his prospects, but recognized the task before him would be long and difficult. For one thing, although Aldwell already held title to most of the planned dam site, he and Brayne would have to acquire the numerous upstream properties that the reservoir would eventually inundate when the dam was completed. Brayne bankrolled the realty costs, while Aldwell maneuvered carefully to purchase properties in an unobtrusive fashion, in order to avoid land speculation or competing claims. Moving slowly between 1894 and 1906, Aldwell recalled that "for 12 years, acre by acre, sometimes it seemed foot by foot, I bought up the land."[14] He succeeded in his task "without anyone's knowledge of our plans."[15]

[14] Aldwell, *Conquering the Last Frontier*, 80.

[15] Aldwell, *Conquering the Last Frontier*, 81.

During the time he was purchasing land in what would become the reservoir area, a realtor acquaintance introduced Aldwell to Canadian real estate investor George A. Glines. Glines became so intrigued with the project that in 1908 he bought out Brayne's half of the partnership.[16] In order to solicit financial support and negotiate contracts to sell their electricity, Glines and Aldwell established the Olympic Power and Development Company in 1910. The partners hired consulting engineers to ensure that their selected dam site would produce the power—and the financial payoff—they expected. In concert with Glines, Aldwell's next step was to obtain adequate financing for dam construction. To convince outside investors of the project's value, Aldwell and Glines had to assemble a suitable number of customers to purchase their electricity. They garnered contracts to deliver electric power to the city of Port Angeles, the Citizen's Electric Company of Port Townsend, the Western Steel Corporation mill at Irondale, and the U.S. Navy Yard in Bremerton, more than 70 miles distant.

Aldwell made several journeys to the eastern United States to drum up financial backing for the project. He succeeded in establishing a financial partnership with Peabody, Houghteling and Company, a Chicago investment firm. In making the agreement, however, Aldwell sacrificed much of the autonomy he originally held in the project. But the immense technical challenges and extensive costs of dam building, particularly hydroelectric facilities, almost always required the help of outside investors. Small companies like Olympic Power and Development did not have the wherewithal to pay for projects of this size.

The decision to obtain financial support from an outside investment firm marked an important juncture in the history of the Elwha Valley, which would produce unfortunate consequences for Aldwell and valley residents, especially members of the Elwha Klallam Tribe.

[16] Aldwell, *Conquering the Last Frontier*, 82.

The problems derived from the Chicago investment firm's decision to hire L. L. Summers and Company to build the dam. The Summers Company, a Midwestern construction outfit, was unfamiliar with the geologic and climatic conditions existing in the Elwha Valley. The construction company's design for the Elwha facility led to a catastrophic outcome—a blowout of the dam foundation—during the second year of construction.

In addition to outside investment, Aldwell and Glines also required local political capital to build the dam and power plant. Fortunately for them, they found an eager and willing audience in Port Angeles's city leadership and citizens. Port Angeles residents had already tasted the possibilities that electrification offered, as the Washington Electrical Light and Motor Company began producing electricity from steam-powered dynamos for city streetlights and some private residences in 1891.[17] But the cost of lighting a single family residence remained beyond the reach of the average citizen, and the small amount of electricity produced could not meet the power demands of large industries. But local residents had seen other Pacific Northwest cities benefit from new hydroelectric installations, such as the Snoqualmie Falls Hydroelectric Project, which began producing electricity to run streetcars and industries in Seattle and Tacoma in 1899, and the Whatcom County Railway and Light Company power plant at Nooksack Falls, which provided electricity to the city of Bellingham in 1903.[18] On clear nights, Port Angeles residents could see the electric street lights of Victoria, British Columbia, sparkling across the Strait of Juan de Fuca. Victoria's electrical lighting system went on line in 1883. As they watched events unfold in these other cities, Olympic Peninsula residents could see that accessible and

[17] Louter, "Elwha River Hydroelectric System," 11.

[18] Lisa Soderberg, "Hydroelectric Power Plants in Washington State, 1890–1938," National Register of Historic Places Multiple Property Documentation Form, 1988, E3, E6. For more detailed information on the development of hydroelectric power in the Pacific Northwest, see Robert Wing, ed., *A Century of Service: The Puget Power Story* (Bellevue, Wash.: Puget Sound Power & Light Company, 1987); and Craig Wollner, *Electrifying Eden: Portland General Electric, 1889–1965* (Portland: Oregon Historical Society Press, 1990).

inexpensive electric power handsomely profited and promoted the growth of those nearby communities; naturally, they desired the same benefits for their hometowns.

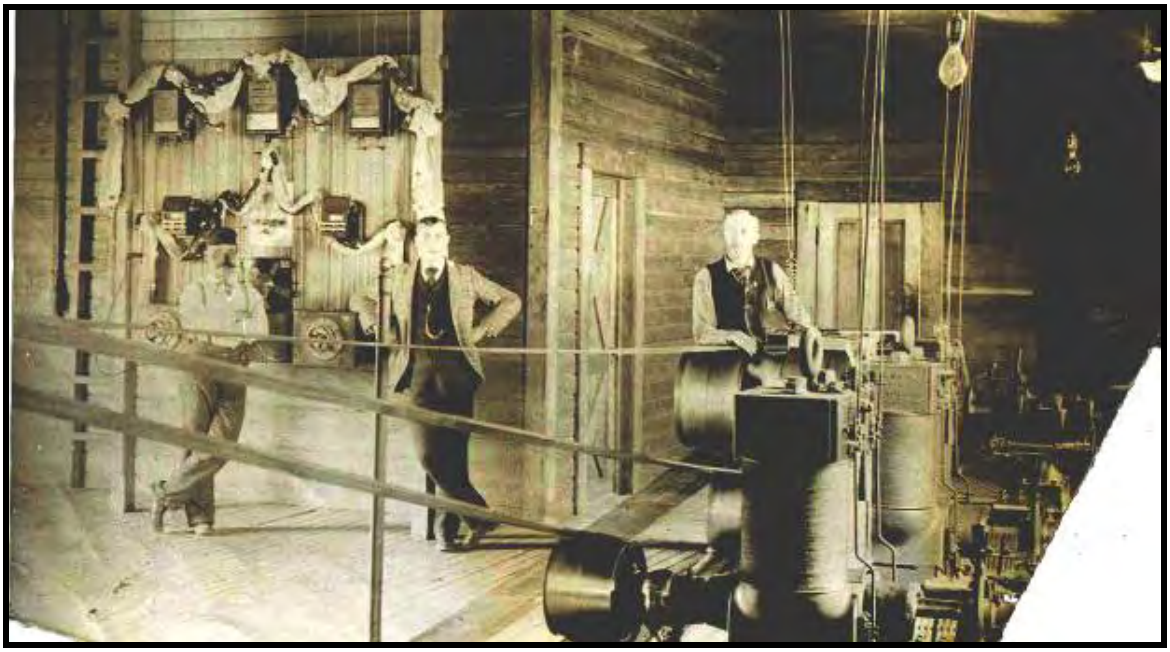

Figure 30. Interior view of the first electric light plant in Port Angeles, located on Cherry Hill. Courtesy of the Bert Kellogg Collection of the North Olympic Library System. [PTAN BLDN – 002.jpg]

A 1913 news article in the *Port Angeles Olympic-Leader* commented, "The completion of this work and the supplying of cheap power for factories means the certainty of a great era of prosperity for the Olympic Peninsula and Port Angeles in particular, as in this age there is no more potent factor in the upbuilding of communities than electricity."[19] The article summed up what most city residents were thinking regarding construction of the Elwha Dam. Likewise, the *Sequim Press* wrote, in an article titled, "Putting the Elwha to Work," that, "this river will be made a power for good . . . and it will be a powerful factor in developing this new country. Every step of the way in town or country, in field or farm or home, [you] will find electricity a help."[20]

[19] National Park Service, "Hydroelectric Power Plants in Washington State"; and "Contract Let for Canyon Dam," *Port Angeles Olympic-Leader*, May 16, 1913.

[20] "Putting the Elwha to Work," *Sequim Press*, April 8, 1911.

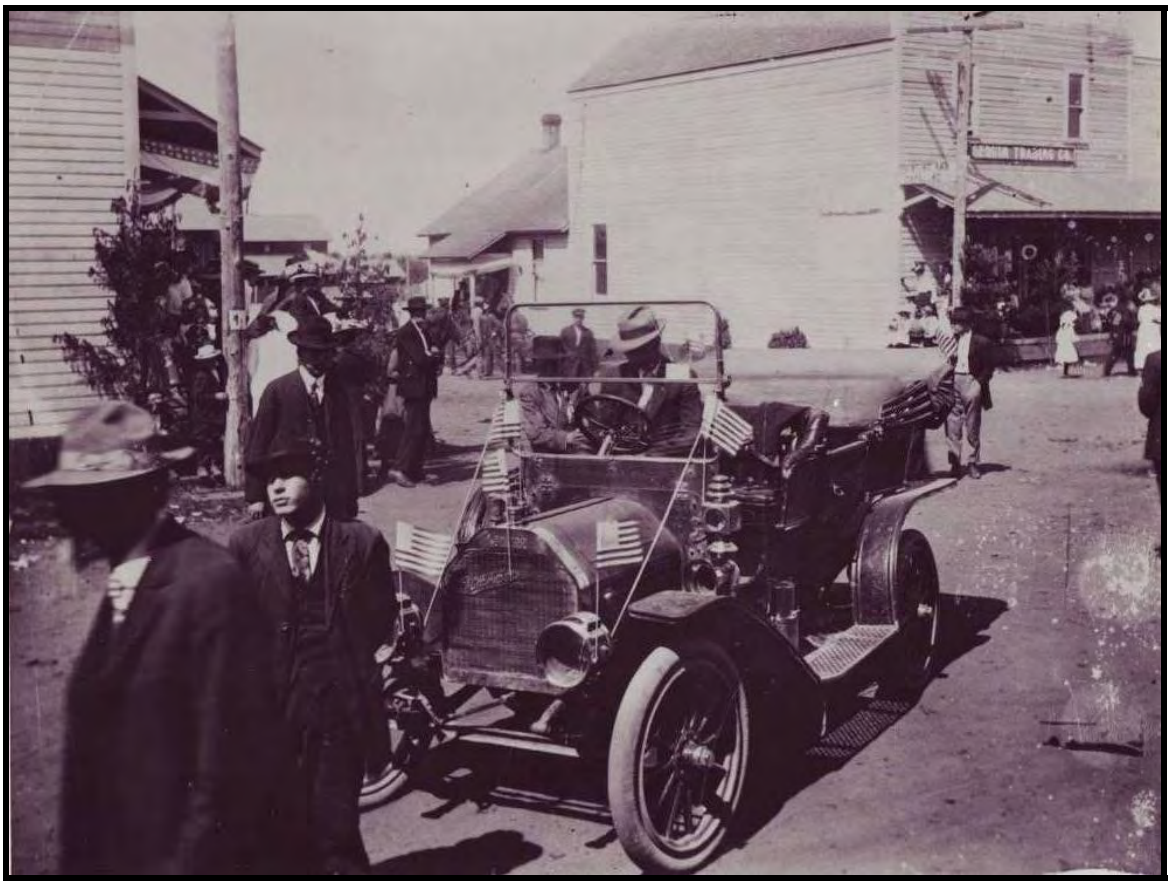

Figure 31. Decorated car participating in a Sequim, Washington, parade, 1910. Sequim was one of several Olympic Peninsula communities eager for Elwha River hydropower to boost the industrial growth of the city. Courtesy of Olympic National Park. [Sequim1910.TIF]

Other Olympic Peninsula communities wanted the benefits of electrification as well. As work on the dam got underway in February 1911, the *Olympic-Leader* proclaimed that the dam's hydroelectric production would "be sufficient to furnish lights and power for Port Angeles, Dungeness, Port Townsend, Irondale, and intermediate places, and this power will be undoubtedly utilized for many private enterprises throughout Jefferson and Clallam counties."[21] In the small town of Irondale, located on the peninsula about nine miles south of Port Townsend, the Western Steel Corporation contracted with Olympic Power and Development Company to

[21] "The Olympic Power Co.," *Port Angeles Olympic-Leader*, February 24, 1911.

supply 5,000 horsepower to run its plant.[22] The *Olympic-Leader* article noted that the peninsula's civic leaders and citizenry saw in the dam the potential to develop new industries and transportation systems, thereby transforming their communities into major cities like Seattle, Bellingham, or Victoria. In fact, this was the biggest difference between the Elwha project and similar dams and power plants built close to the same time on the west side of Puget Sound. Companies constructed the other turn-of-the-century hydroelectric facilities to meet the burgeoning power needs of existing urban populations and industries on the east side of Puget Sound. Olympic Power and Development Company, conversely, built the Elwha Dam to "spur development" of industries that, for the most part, did not yet exist in that area.[23]

[22] "Olympic Power Company," *Port Angeles Olympic-Leader*, June 23, 1911.

[23] National Park Service, "Hydroelectric Power Plants in Washington State," E13.

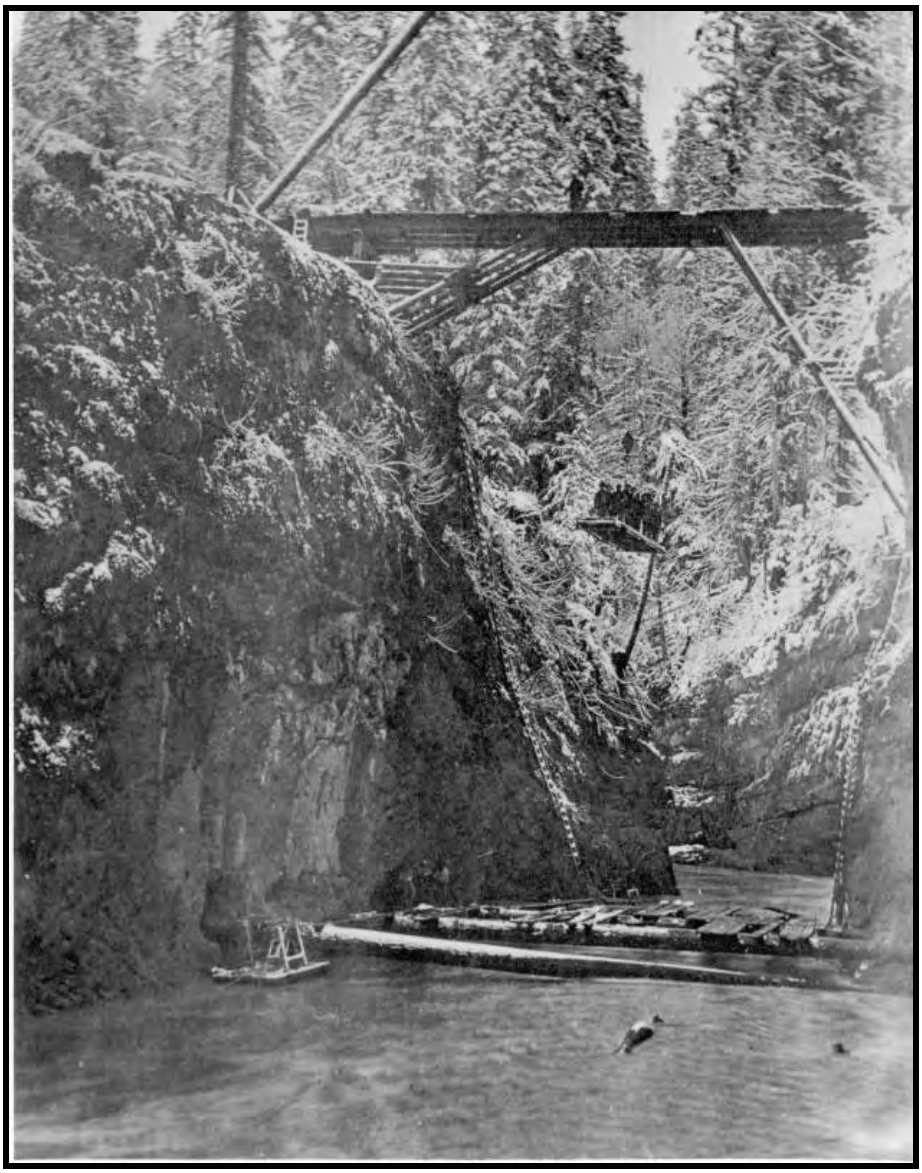

Figure 32. Elwha Dam in the earliest stages of construction, ca. 1910. Courtesy of Olympic National Park. [HHWA130A34-1.jpg]

The *Olympic-Leader* article regarding the Elwha Dam project also typified early twentieth-century thinking regarding the use of the country's natural resources:

> In the growth of new communities, the planting of new industries, the bettering of transportation, in fact, in all the activities called into action by the settlement, cultivation and improvement of a new country by an industrious people nothing more helpful and desirable could be installed among us than the great power of

> the river converted from its waste and loss into a magnificent source of energy and strength.[24]

This statement expresses major themes of that period of American history called the "Progressive Era," when political and social leaders voiced a can-do attitude about the country's future. Progressives anticipated the limitless potential of human achievement, believing that the utilitarian consumption of the seemingly endless bounty of America's natural resources could make the nation strong and virile. Conservationism was a central tenet of Progressive Era politics and politicians. But conservationists of the day, most notably President Theodore Roosevelt, believed the best strategy entailed making the most efficient use of natural resources while providing for their long-term protection. Progressive Era conservationists wanted to stop the rampant, ungoverned destruction of natural resources common to the nineteenth century. They wanted society to utilize natural resources in a way that furthered human progress and the nation's economic development. In the Progressive Era, waterpower was one of the key resources to "conserve," harness, and put to use to better humankind.[25] Citizens of the towns spread across the Olympic Peninsula who saw their region as a still "unsettled" frontier thus tended to focus on the benefits the river's power could produce to launch industries, propel transportation systems, and fuel urban growth of the area.

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[24] "Putting the Elwha to Work."

[25] Alfred Runte, *National Parks: The American Experience* (Lincoln: University of Nebraska Press, 1997), 68–71. For a complete discussion of the topic, see Samuel B. Hays, *Conservation and the Gospel of Efficiency: The Progressive Conservation Movement, 1890–1920* (Cambridge, Mass.: Harvard University Press, 1959).

Figure 33. Elwha Dam construction, ca. 1910-1911. Courtesy of Olympic National Park. [Image40.jpg]

Elwha Dam Construction

Concrete hydroelectric dam structures appeared in the United States during the early 1890s, spurred into use by new technological developments in several different fields. Hydropower is produced by diverting rushing water through large conduits into turbines connected to electrical dynamos. The dynamos convert waterpower into electrical current and then transfer the current through power lines. The earliest transmission lines operated on direct current (DC), which decreased in efficiency the farther the lines ran away from the power plants. Effective DC transmission also required the use of costly copper wiring and conductors.

By 1890, however, two new discoveries changed the situation entirely. In 1887, George Westinghouse patented a new transmission method, adopted from a technology first developed in Europe, called alternating current (AC). Electricity delivered on AC transmission lines could

travel much longer distances without the power loss that limited the earlier DC systems. The Westinghouse Company introduced another change that made AC electrical power more functional for various applications. In the Westinghouse systems, electrical current produced inside a generator at the low voltage appropriate for power generation was dramatically increased in order to travel efficiently along transmission lines. When the electricity entered transformers at the end of a power line, the Westinghouse system decreased the electrical charge to the appropriate voltage needed for residential lighting or heavy industrial production. Westinghouse installed the first high-voltage long-distance line to operate a mine generator at Telluride, Colorado, in 1891.[26]

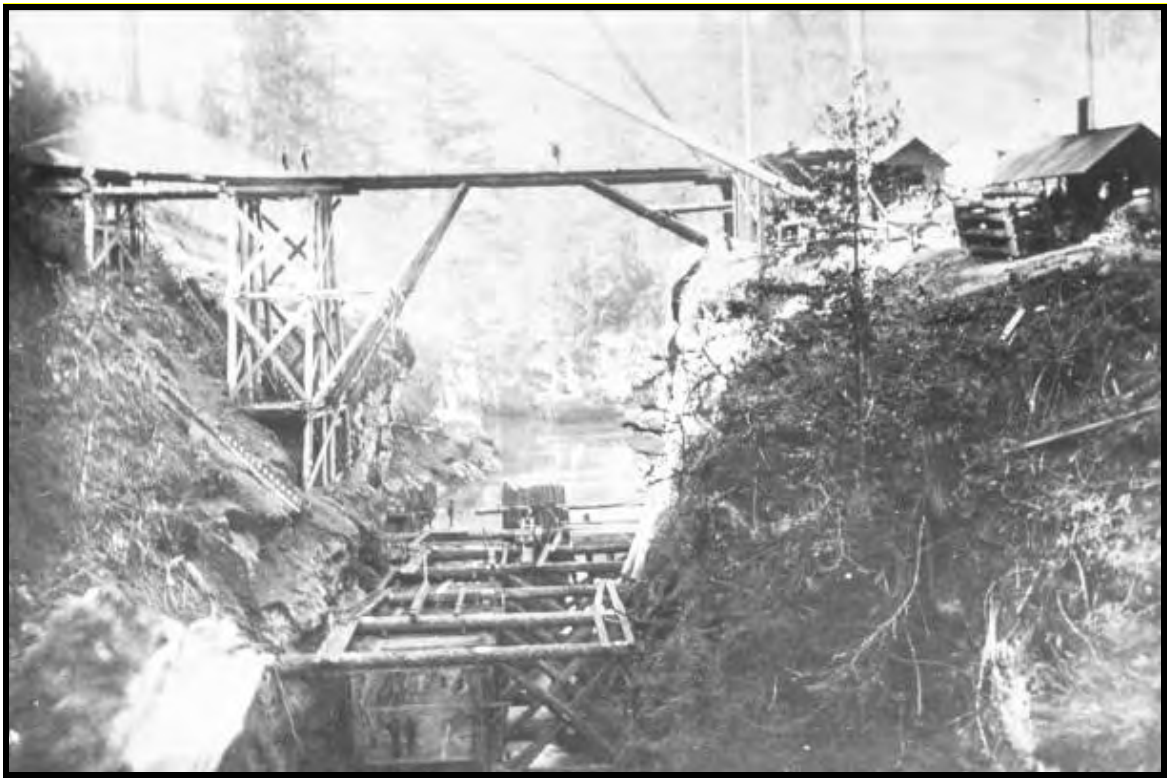

Figure 34. Elwha Dam construction, ca. 1910-1911. Courtesy of Olympic National Park. [Image43.jpg]

[26] Duncan Hay, *Hydroelectric Development in the United States, 1880–1940* (Washington D.C.: Edison Electrical Institute, 1991), 28–31; and National Park Service, "Hydroelectric Power Plants in Washington State, 1890–1938," E2.

Other technological advances around the turn of the twentieth century helped set the stage for Elwha power production. These included the development of high-capacity hydroelectric turbogenerators (made by the Pelton Water Wheel Company), high-voltage transmission lines, and expanded applications for Portland cement in dam construction. After 1900, poured-concrete dams began to be constructed at steep-walled canyon sites where more traditional earthen or timber-crib construction was more difficult.[27]

In late 1910, Summers and Company hired a collection of workers from communities around the state of Washington to begin clearing timber and moving earth at the Elwha River construction site. Summers brought their own construction supervisors to the Elwha, but Aldwell managed to hire Fred Mandeau, a local Port Angeles man that he knew well, to be the construction foreman.[28] The initial phase of work was slow and deliberate due to the rugged topography and because, as a Port Angeles reporter described, "the close confines of the rock walls in which the preliminary work must be done" permitted only a "few men" to labor during each shift.[29] The first major task was the construction of a cofferdam to divert the natural flow of the river away from the dam site. The cofferdam was a large, wooden, watertight box built on the riverbed that allowed crews to begin pouring the cement foundation. By March 1911, cofferdam construction was well underway, with a crew of 97 men working and living on-site. The size of the work crews and support staff more than doubled the population of the Elwha Valley.[30] Construction camp brought together men from different social backgrounds, careers, and nationalities, creating a new community in the Elwha Valley.

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[27] Hay, *Hydroelectric Development in the United States*, 13–19, 48–50.

[28] Aldwell, *Conquering the Last Frontier*, 93.

[29] "The Olympic Power Co."

[30] "100 Men Working at Power Plant," *Olympic-Leader*, June 6, 1913.

Figure 35. Early stages of construction of the Elwha Dam spillway and powerhouse, looking upstream, ca. 1910-11. Photograph by Critchfield. Courtesy of Clallam County Historical Society, ONP ref. no. 2010.200.145. [2010200145.JPG]

Figure 36. Construction of the powerhouse at the Elwha Dam, ca. 1910-11. Photograph by Critchfield. Courtesy of Clallam County Historical Society, ONP ref. no. 2010.200.147. [2010200147.JPG]

DANGER FROM ABOVE AND BELOW

Workers at the construction site were familiar with physical risks involved in frontier labor, having worked in logging camps, construction sites, loading docks, and aboard ships. But construction tasks at the Elwha Dam carried dangers from both above and below. During initial construction, the crews had to descend into the canyon on shaky wooden ladders, or cross the gorge on rough wooden planks supported by skeletal scaffolding. No safety ropes or netting was there to protect them. The steep slopes above them loosed slides of mud and rock toward the workers. Far below, the Elwha River ran fast, deep, and cold. All the while, heavy machinery,

logs, and giant pieces of the power plant were hoisted over and into the canyon.

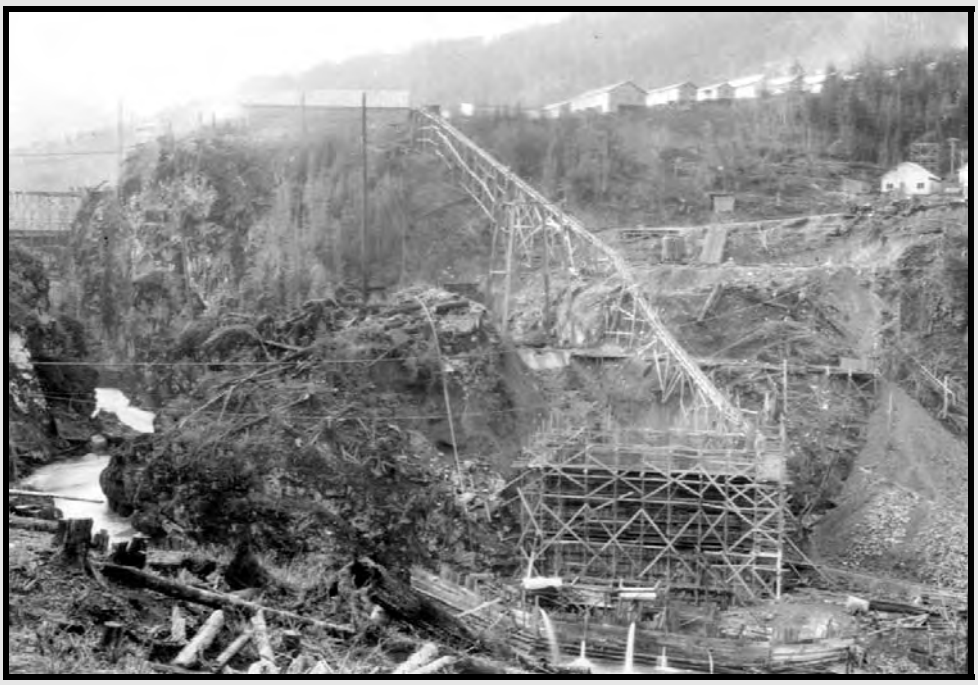
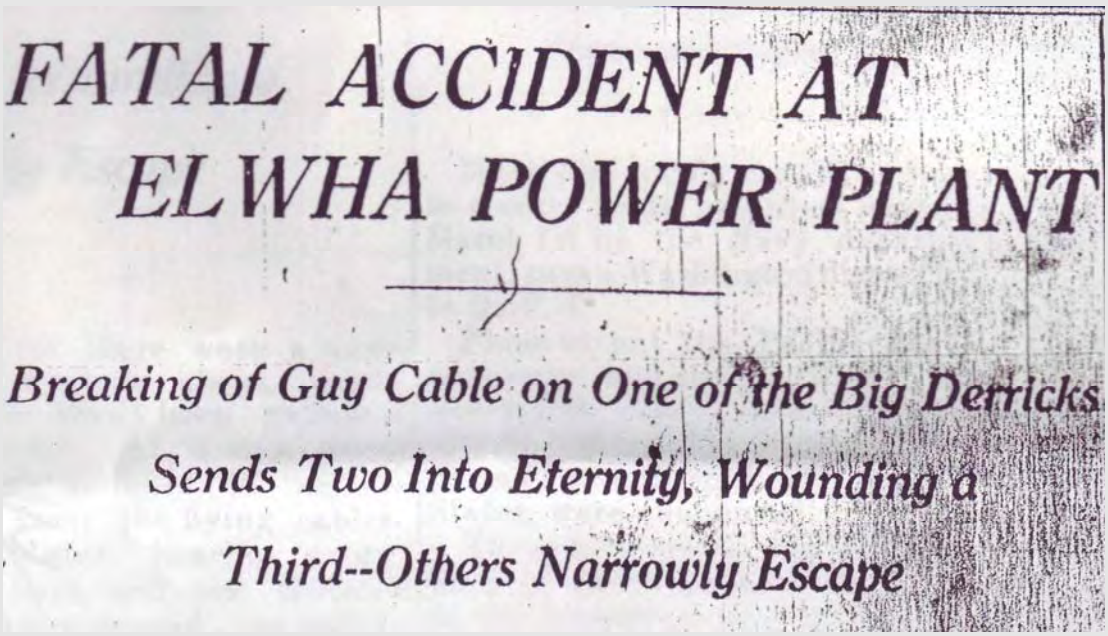


Figure 37. Scaffolding and unstable hillside during early phase of Glines Canyon Dam and powerhouse construction, 1926. Courtesy of Clallam County Historical Society, ONP ref. no. 2010.200.064. [201020064.JPG]

The 1912 blowout of the Elwha Dam foundation was the biggest accident during dam construction. Fortunately, no lives were lost. Several workers who fell victim to other accidents were not so lucky. Soon after construction began, in January 1911, a cable hauling a huge support log across the canyon snapped, sending the log plummeting toward the river and hurling one laborer—a resident of Port Angeles—through the air into a tree stump. He was lucky to survive, but had three broken ribs. Several weeks later, a much more serious accident occurred. Three workmen, residents of Seattle, standing on a section of wooden scaffolding suspended above the canyon were thrown into the river when a rockslide knocked them off of the platform. One of the men drowned and another received a broken collarbone and other injuries.[31]

[31] "Slight Accident at Aldwell Canyon," *Port Angeles Olympic-Leader*, January 6, 1911; and "Man Drowned at Elwha Canyon; Two Hurt," *Port Angeles Olympic-Leader*, February 3, 1911.



FATAL ACCIDENT AT ELWHA POWER PLANT

Breaking of Guy Cable on One of the Big Derricks Sends Two Into Eternity, Wounding a Third--Others Narrowly Escape

Figure 38. "Fatal Accident at Elwha Power Plant." Newspaper headline from the *Port Angeles Tribune Times*, March 8, 1912. [19120308_tribtimes.jpg]

Later in February, a similar accident led to another drowning. A Tacoma man, a ship's carpenter by trade, simply lost his footing atop the scaffolding and the river carried him away before anyone could help. In November 1911, another workman drowned when he fell into the river while trying to break up a log jam above the dam.[32] Then in March 1912, a near-repeat of the first accident occurred, but with a more deadly result. A guy cable supporting a hoist derrick snapped, sending the derrick crashing into the river and knocking two more workmen into the water, where both drowned.[33] All told, five men died while performing construction tasks at the Elwha Dam.

[32] "Man Drowned at Olympic Power Co.'s Plant," unattributed clipping, December 1, 1911, News Clipping File 1911 to 1915, ONPA.

[33] "Breaking of Guy Cable on One of the Big Derricks Sends Two into Eternity, Wounding a Third—Others Narrowly Escape," *Port Angeles Tribune-Times*, March 8, 1912.

Figure 39. Elwha Dam construction, ca. 1910-1911. Courtesy of Olympic National Park. [Image36.jpg]

In the rough-and-tumble atmosphere of a backwoods construction camp, individual antagonisms between workers could be dangerous as well. In August 1911, two immigrants laborers—one Polish and the other Danish—got into a fistfight near the lip of the canyon. During the fight, the Dane tripped, struck his head on a log, and plummeted into the river below. He was dead by the time they pulled him out.[34]

[34] "Fell over Canyon Wall," *Olympic-Leader*, August 18, 1911.

Figure 40. Workers at Glines Canyon Dam, ca. 1926–1927. Courtesy of Olympic National Park. [HABSHAER_OLYM437_Oliver4.TIF]

The worst dam construction accident on the Elwha River took place fifteen years later during the work on Glines Canyon Dam. While crews poured concrete on the partially completed Glines structure, the most dangerous tasks were those that required workers to climb up and walk along the top of the wooden scaffolding high above the unfinished dam. Tragedy struck on January 18, 1927, when a section of scaffolding collapsed, sending a number of men, large timbers, and machinery tumbling down onto other workers who were pouring concrete on the level below. Three men died at the site and eight were injured, including Oscar Sims, who died in a Port Angeles hospital two days later. Sims was one of the crew working beneath the scaffolding, where he was crushed under falling debris. The other fatalities were Arthur Fisher, a German immigrant, and Harold and Milton Anderson, brothers from the town of Ferndale, Washington.

Several of the men who survived had a long road to recovery.[35] Neil Pendley, who fell roughly 35 feet from the top of the scaffolding down to the area where the molds were being poured, stayed in the hospital for three years recovering from his injuries. He recalled he was carrying lumber along the rail track that stretched across the top of the scaffolding. They used the rails to transport the grout machine that mixed the concrete. Pendley was walking just in front of the grout machine when the structure gave in, sending him and the machine tumbling down together.[36] He remembered, "I went down into that concrete . . . my feet were buried kind of, because it's soft—see we had just been pouring the concrete, and I went down and then I was setting in it." When the ambulance finally got him to the hospital some 12 hours later, the medical staff had to scrape the dried concrete off of him as well as tend to his leg, which fractured in three places. Getting Pendley and some of the other injured men to the hospital took so long because there was only one ambulance available, and because the new section of road from Elwha Dam to Glines Canyon was still so rough that it took the ambulance five hours to make the round trip to the dam and back to the hospital in Port Angeles.[37]

[35] "Four Men Are Killed in Canyon Dam Tragedy," *Port Angeles Olympic Tribune*, January 21, 1927.

[36] Pendley interview, 4-5.

[37] "City News in Brief," *Port Angeles Olympic Tribune*, January 21, 1927.

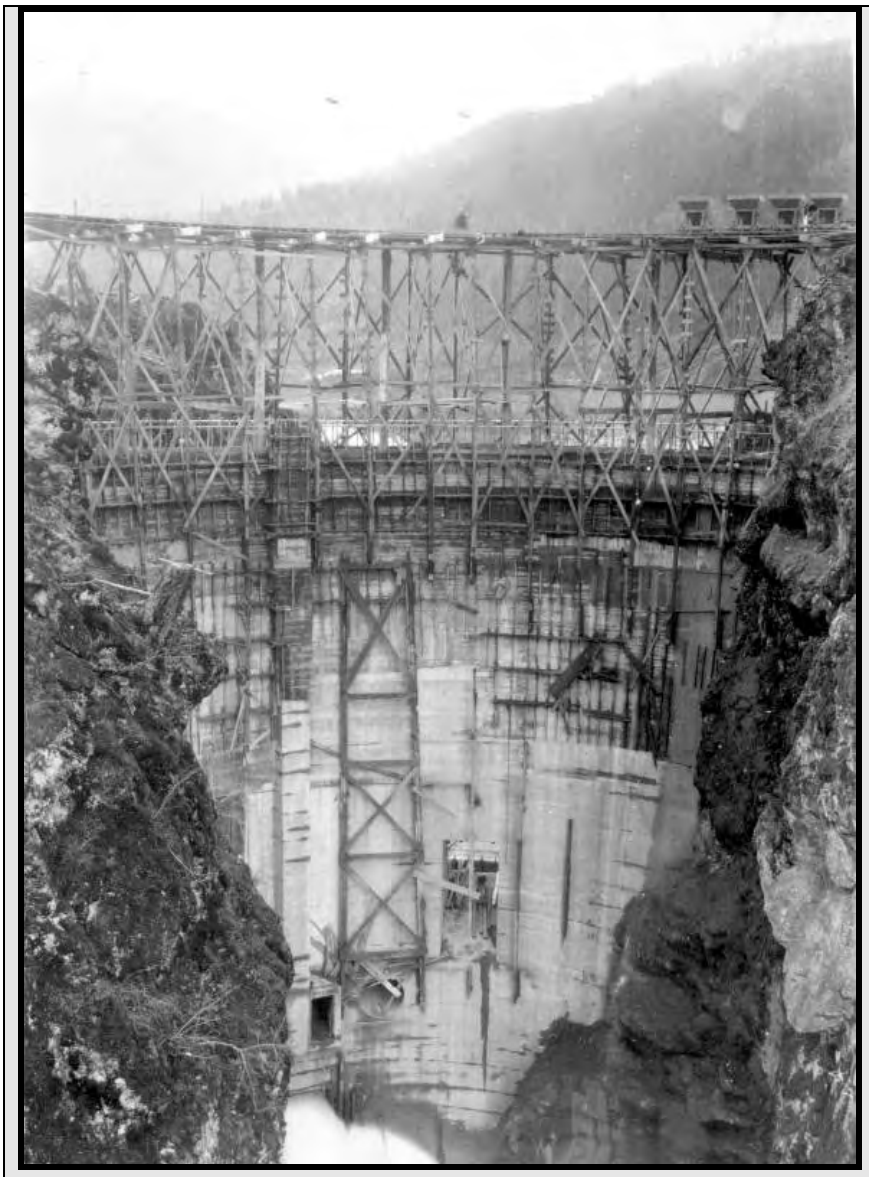


Figure 41. Scaffolding at the nearly complete Glines Canyon Dam, ca. 1927. In January 1927, a portion of scaffolding collapsed, killing four men and injuring seven others. Courtesy of Clallam County Historical Society, ONP ref. no. 2010.200.082. [201020082.JPG]

Olympic Power and Development Company also erected the power transmission lines that would carry electricity to Port Angeles, Port Townsend, Irondale, and Bremerton. Crews cleared the timber and debris from a 20-foot-wide right-of-way between Port Angeles and Irondale, and dug a total of roughly 1,000 seven-foot-deep holes spaced every 350 feet apart through the right-of-way. Into each hole, they sank twelve-inch-diameter cedar poles that would hold up the

transmission wires.[38] In their eagerness to get the job done, the work crew cut a 60-foot-wide, three-mile-long swath through the timber holdings of the Puget Mills Company before Aldwell had managed to obtain the right-of-way, leading the property owner to sue and obtain a settlement from Olympic Power Development Company for the damages.[39]

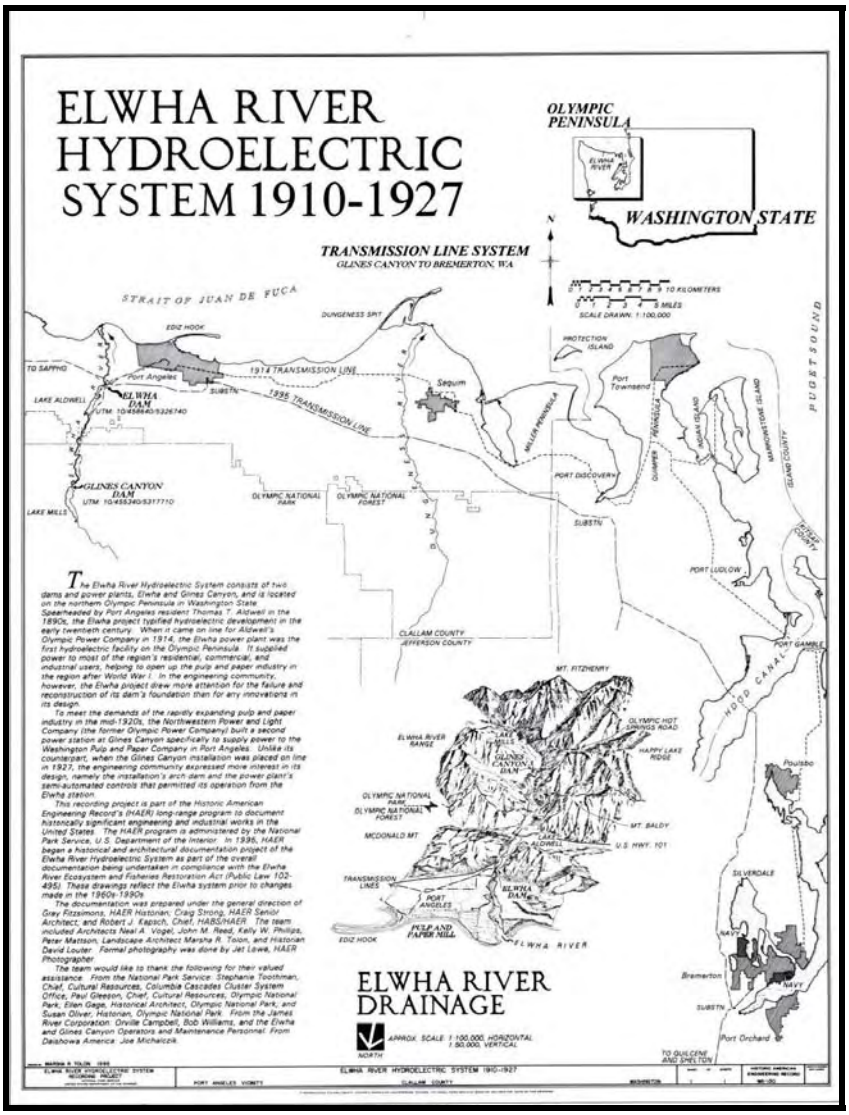


Figure 42. Historic American Engineering Record sketch of Elwha River Hydroelectric System, 1910–1927. HAER Drawing WA-130. Courtesy of Olympic National Park. [HABSHAER_OLYM437_Systemsketch.TIF]

[38] "Olympic Power Company."

Foundation Blowout and Aftermath

Despite the optimism in Port Angeles that the builders of the Elwha Dam had successfully exercised dominion over the natural world, the Elwha River continued to "fight back" by undermining the dam foundation while the water level rose and pressure increased behind the closed floodgates. The problem stemmed from the contractor's decision to follow a less expensive, but inadequate, design for the dam foundation. From the outset, Summers Company managers failed to grasp the importance of local conditions, including the geology of the riverbed and the wet coastal climate that could quickly swell the size of the reservoir before the dam was ready. Eight days after the reservoir reached its maximum water level, the river's undermining action finally forced a "blowout" of the entire foundation on October 30, 1912.[40] In the course of a single hour, all of the water stored behind the dam rushed through the opening, draining the reservoir and scouring away the entire foundation. The surge of water and logs also battered the power plant and damaged the power turbines.

The foundation blowout of October 1912 produced further hardship for Elwha Klallam tribal members who had homes and homesteads along the river: one watched the flood completely destroy his riverside home and property; several others saw the floodwaters wash away crops, canoes, houses, and portions of their land. They apparently received no advance warning of the disaster, and were fortunate to escape unharmed. None of the affected tribal members was compensated for their losses. The blowout's power heightened Elwha Klallam fears that the dam threatened their downriver homes. Even after completion of the dam, continuous small leaks in

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[39] Aldwell, *Conquering the Last Frontier*, 113–14.

[40] Resident Engineer, Mead and Seastone, Consulting Engineers, to Thomas Aldwell, June 13, 1913, File 1-34, Box 1, Accession 4082, Thomas Aldwell Papers, Manuscripts and University Archives, University of Washington Libraries, Seattle.

the foundation added to the wariness of the Elwha Klallam, who had seen firsthand the destructive power of the water if it was released too quickly.

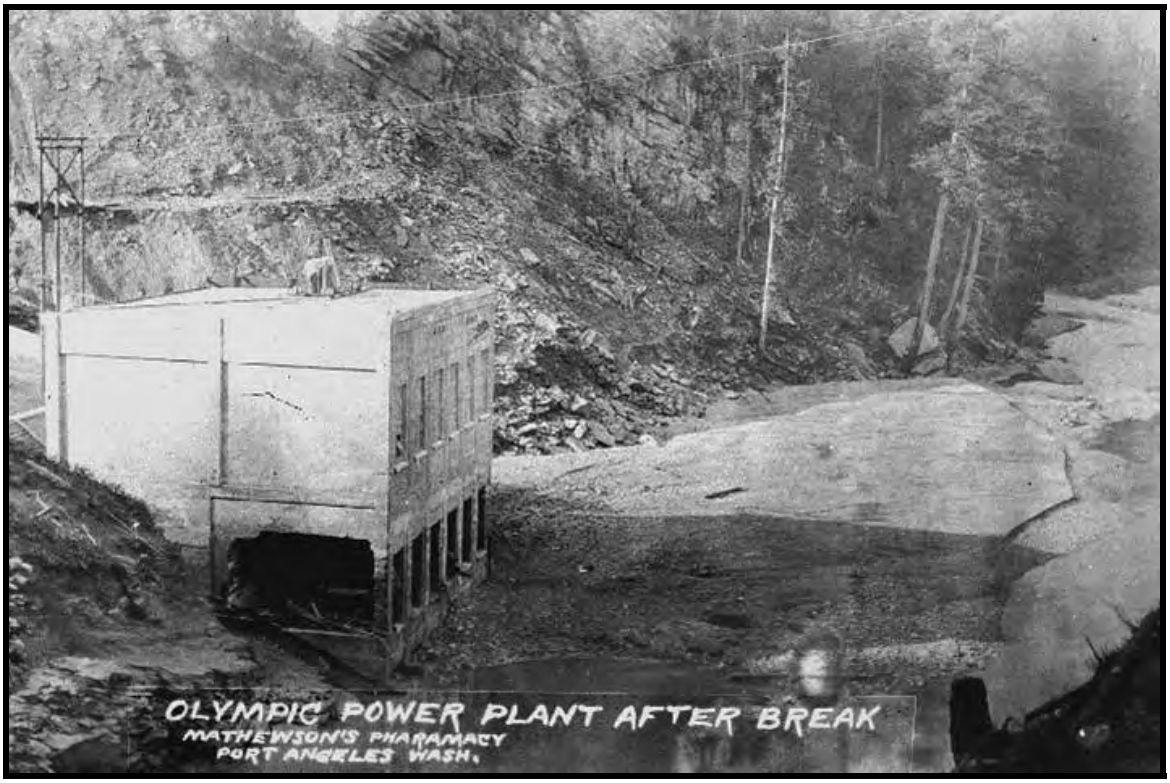

Figure 43. Elwha Dam powerhouse, showing damage from the 1912 foundation blowout. Courtesy of Olympic National Park. [Elwha Powerhouse after 1912.jpg]

The foundation blowout was also a distressing setback to the project. The accident, subsequent delays, and the uncertainties that followed nearly caused Aldwell and Glines to lose their financial backing and their local support for the project. In the immediate aftermath of the blowout, according to one news account, Port Angeles city officials began to inquire how much they could recoup if they exchanged the transformers meant to receive Elwha power for equipment to run a new electric plant in the city.[41] Aldwell, already struggling to refinance his company and regain the confidence of his Chicago investors, was understandably dismayed to

[41] "Power Ready by Next November," *Port Angeles Olympic-Leader*, April 18, 1913.

hear that his adopted hometown was losing faith in his project. He assured the city council that the company was already working strenuously to rebuild the dam and power plant. Aldwell told the council he had "at least 40 men . . . constantly at work" repairing the facilities, and asserted that the Elwha plant would be producing electricity by the end of November 1913.[42] He made this claim despite the fact that engineers still had not determined how to patch the damaged dam. He also acknowledged that the reconstruction job would cost an additional half-million dollars. The city council and his Chicago backers regained some confidence in the project when Glines put up $250,000 of his own fortune to refinance the work.[43]

Unlike the city council, the editors of the *Olympic-Leader* were quick to resume their praise for the power project and promote the benefits it would bring to the city and the peninsula. A May 1916 article about the project argued that the two owners had "certainly earned the hearty co-operation and support of all our citizens and everyone interested in the upbuilding of the peninsula."[44] The account stated that Aldwell and Glines were "deserving of a great deal of credit for the fortitude with which they took the catastrophe of the blow-out of the dam and their persistence in overcoming the trouble."[45]

Houghteling, Peabody and Company decided to put another Chicagoan, Jason Heyworth, in charge of the reconstruction as the lead contractor. Heyworth and his consulting engineers decided not to build the new concrete foundation down to the bedrock of the canyon, even though that construction strategy was the main cause of the blowout. To compensate for that problem, Heyworth's crew drove two rows of steel pilings into the bedrock, one set on each side

[42] "Power Ready by Next November."

[43] Aldwell, *Conquering the Last Frontier*, 108.

[44] "Contract Let for Canyon Dam."

[45] "Contract Let for Canyon Dam."

of the dam. Laborers then began blasting rock from the canyon walls below the dam to fill the area between the pilings and the foot of the dam. The blasting sent pieces of canyon rock weighing as much as ten to fifteen tons tumbling into the river below, along with cascades of smaller rocks and pebbles. According to a reporter on the scene, the blasting work had created "an enormous mass of great weight—a brace against the lower side of the dam which no power could by any possibility move."[46]

The *Olympic-Leader* boasted that "every engineer who has examined the work has unhesitatingly stated that there is no question but that the Elwha is harnessed at last and forever."[47] The correspondent's comment demonstrated the extent of pre–World War I society's trust in the engineering capabilities of modern humans (and the technological tools they wielded) to tackle even the most Herculean of tasks. In the case of the Elwha Dam, however, the engineers again underestimated of the organic power of the Elwha River, which continued to seek its way downstream. Large leaks appeared in the newly laid rock foundation, necessitating the contractor to apply additional loads of ballast to hold the foundation in place.

[46] "Elwha Harnessed for the Last Time," *Port Angeles Olympic-Leader*, November 7, 1913.

[47] "Elwha Harnessed for the Last Time."

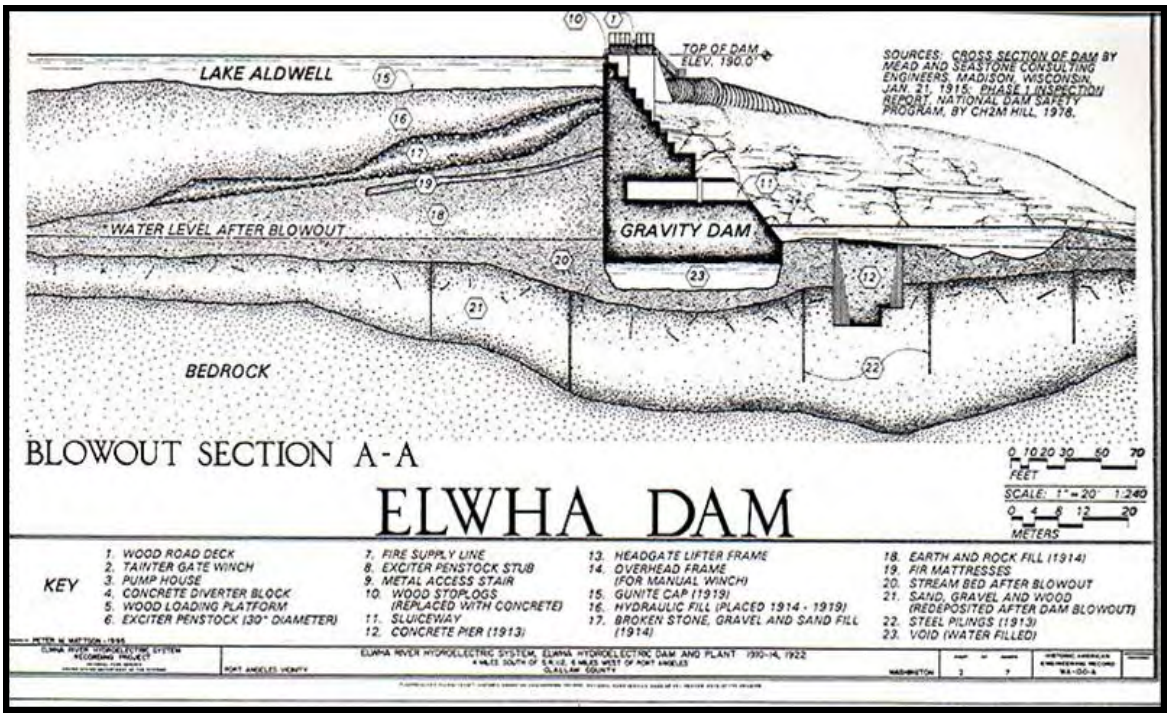

Figure 44. Engineering drawing of the Elwha Dam, showing the layers of materials used to shore up the dam's foundation to prevent further leakage. HAER Drawing WA-130-A. Courtesy of Olympic National Park. [Elwha plan.jpg]

Regardless of the *Olympic-Leader*'s proclamations of success, the company's engineers, contractors, and consultants never successfully ceased the Elwha's unrelenting power, which continued to create leaks that threatened the plant's potential power production. Workers at the site continued to dump rock and hydraulic fill material at the upstream base of the dam from 1914 to 1919, and finally, poured a gunite cap atop of the fill, thus "completing" the makeshift repairs and enabling the reservoir to rise to it full capacity. Nonetheless, leaks continued throughout the life of the dam, closely monitored by dam operators.[48]

[48] Joe Michalczik, oral history interview by Paul Sadin and Dawn Vogel, August 28, 2009, Port Angeles, Wash., transcript, ONPA, 10. Michalczik explained that operators monitor the leak via a gauge that tells them if the water flow is increasing or decreasing, but "it seems to have been rather stable all the years that I have been here."

Initial Impact of Elwha Dam Construction

Construction of the Elwha Dam produced both geographically far-reaching and intensely local consequences. The dam dramatically altered the riverine environment, interrupted the life cycles of as many as ten different anadromous fish runs, reduced the populations of terrestrial species in the valley, and gradually eliminated the nearshore habitat along the Strait of Juan de Fuca near the mouth of the river and east to Ediz Hook. Construction of the Elwha Dam also dramatically altered the world of the Lower Elwha Klallam Tribe. By the time Aldwell and Glines were drawing up plans for the dam, the previous centuries of European diseases and at least a half-century of white settlement and destructive government policies, had already reduced the tribe and its territory to a shadow of its former size and strength. But prior to 1911, tribal members could still count on abundant salmon runs and shellfish gathered near the mouth of the river for sustenance.

Figure 45. Lake Aldwell, behind the Elwha Dam, August 1946. Photograph by Thompson. Courtesy of Clallam County Historical Society, ONP ref. no. 2010.200.041. [201020041.JPG]

The most significant impact of dam construction fell upon the prodigious salmon fishery that was a central element of Elwha Klallam life and culture and a critical piece of the river's ecological systems. By late summer 1911, the completed sections of the dam already blocked the upstream passage of several valuable fall salmon runs. In response to a complaint lodged by area salmon cannery managers, Clallam County fish and game warden J. W. Pike visited the dam in late August. He found the disconcerting sight of "thousands of salmon at the foot of the dam where they are jumping continually trying to get up the flume."[49] He was referring to the power company's diversion flume that carried water around the dam during construction, which was not a fish passage.

Pike stayed to watch the situation until he was certain that no salmon could ascend above the dam. After reading Pike's report, John Crawford, general superintendent of the Washington State Fish Hatcheries, visited the dam site the following month. He confirmed Pike's observations that the dam had completely blocked upstream fish passage. The engineer at the dam site assured Crawford that he intended to construct a fish passage as soon as the dam "was high enough to make the fishway effective."[50] This must have come as a surprise to Aldwell and Glines because the dam's design did not include a fish ladder and because the engineer had no authority to make such a substantial change to the project.

Pike and the local sheriff were troubled to see the fish cut off from their spawning grounds, a situation they called "contrary to the statutes made and provided" to protect the state's fish runs.

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[49] J. W. Pike, Clallam County Game Warden, to Jno. [John L.] Riseland, State Fish Commissioner, September 12, 1911, Folder 48: Fishways for Dams Corresp.-State Fish Commissioner, Box 1, Phillip Johnson Elwha Sources, Access no. OLYM-429 (hereafter Johnson Elwha Sources), ONPA; and Lane and Lane Associates, "Conflict between Indian Terminal Fisheries and Hydropower on the Elwha River," 50.

[50] John Crawford, General Superintendent, Washington State Fish Hatcheries, to Jno. [John L.] Riseland, October 23, 1911, Folder 48, Box 1, Johnson Elwha Sources, ONPA.

During a September visit to the site, Pike found hundreds of salmon had "gathered just below the dam during the last few days until they are packed in together like a school of herring, or sardines in a box. Every few moments a big fellow makes a jump clear [out] of the water that shoots out of the flume . . . only to be thrown back to the pool below." Like Pike, Clallam County Sheriff Gallagher concluded that "not a single fish can get thru."[51]

Complaints of locals and game officials resulted in a variety of suggested schemes to move fish above the dam, but none proved practical or effective. Among the flurry of suggestions were proposals to net or otherwise trap the fish and transport them by derrick, truck, or "electric elevator" directly into the reservoir or to a temporary fish hatchery just above the dam.[52] State Fish Commissioner John L. Riseland informed Aldwell that it was the Olympic Power and Development Company's responsibility to build and operate a trap and lift system and to supply land above the dam for a state-run hatchery. If they failed to build an effective fish elevator, Riseland said, the company would be required to "construct a fishway in strict compliance with the provision of our State Law."[53] Eighteen months later, however, the dam was almost finished, but without any sign of a fish-passage facility.[54]

The Hatchery Agreement

Once the dam was completed, Aldwell argued that the various parties involved should admit there was no effective means to build a functional fish passage over a 100-foot-tall dam. In

[51] "Power Company Will Fish with a Derrick," *Port Angeles Olympic-Leader*, September 1, 1911.

[52] "U.S. Hatchery Secured," *Port Angeles Olympic-Leader*, February 23, 1912.

[53] Jno. [John L.] Riseland, State Fish Commissioner, to Thomas Aldwell, January 11, 1912, Folder 48, Box 1, Johnson Elwha Sources, ONPA.

[54] [Leslie H. Darwin], State Fish Commissioner to Aldwell, August 8, 1913, Folder 48, Box 1, Johnson Elwha Sources, ONPA.

August 1913, Commissioner Leslie H. Darwin offered a solution to Aldwell's liking.[55] Instead of building a costly fish ladder and stalling power production (costing him even more money) until the fishway was complete, all Aldwell needed to do to circumvent the state fisheries law was to donate land adjacent to the dam as a site for the hatchery. In a time when state government did not give public hearings or post notice of its doings, there was no opportunity for the Elwha Klallam Tribe, cannery owners, or concerned citizens of Port Angeles to voice their protest.

Even after securing the highly advantageous deal for Olympic Power and Development Company, Aldwell still postponed building the hatchery. In August 1914, Darwin complained to Aldwell that the failure to have the hatchery ready risked the loss of the 1914 salmon runs, since the state had no place to put the fish that began collecting at the foot of the dam. Darwin "threatened" Aldwell with a court order that would force him to build a fishway, because, he said, "it is out of question for us to allow another fish run to beat its brains out against the dam."[56] On advice of the company attorney, Aldwell finally paid for the construction of the hatchery at the foot of the dam. As a result of these negotiations, Olympic Power and Development Company could operate the Elwha Dam without any fish passage facility.

In 1914, the state built the Elwha fish hatchery with Olympic Power and Development Company money, but it would prove unsuccessful. High-water events caused by reservoir releases created intermittent floods that washed away the racks set to catch and hold spawning salmon.[57] The hatchery operation began collecting eggs from spawning salmon in 1915, but soon afterward, run size had decreased dramatically, to the extent that the hatchery ceased taking fish

[55] Darwin to Aldwell, August 17, 1913.

[56] Leslie H. Darwin to Thomas Aldwell, June 2, 1914, quoted in Lane and Lane Associates, "The Conflict between Indian Terminal Fisheries and Hydropower on the Elwha River," 56.

[57] Johnson, "Historic Assessment of Elwha River Fisheries," 87, 96.

in 1922. Thereafter, fish that were able to spawn in the lowest four miles of the river were the only salmon successfully reproducing.

The dam's completion marked a new reality for the river, the valley, and the Lower Elwha Klallam Tribe. For the tribe and the famous salmon runs of the Elwha River, the dam became an immense problem rather than a harbinger of future promise. But in Port Angeles, city leaders and residents' eagerness for hydropower to the spur the city's industrial growth easily overshadowed any concerns they might had about the salmon runs. Likewise in other peninsula towns, such as Sequim and Port Townsend, which envisioned the benefits they too might gain from Elwha electricity.

PORT ANGELES in 1914: PROSPERITY AND PROMISE

To the business leaders and residents of Port Angeles, 1914 was a benchmark year in the growth of their community. The year began with the transmission of electricity from the Elwha River Dam to the city, just one of the several changes remaking Port Angeles in 1914. A city booster proclaimed, "Port Angeles and the Olympic peninsula are enjoying a pronounced business revival, not only as a result of the completion of the power plant, but by reason of the coming of the Chicago, Milwaukee & St. Paul Railway, the building of the great sawmills, shingle mills and other industrial factors, all of which contribute to the general wave of prosperity."[58]

[58] "A Big Day in Port Angeles,"

Figure 46. "River de Front," Front Street in Port Angeles under water during regrade sluicing operations, June 1914. Courtesy of Olympic National Park. [Rotation of PA_RiverdeFront.TIF]

That summer, city work crews transformed the downtown. Using high-powered water jets, they sluiced through the hill that had formerly separated Front Street from the rest of the downtown area. A flood of water and dirt ran down Laurel Street until the water slackened and the dirt settled. The city then built new streets atop the fill material.[59] In the meantime, work had begun in 1914 on the new, all-brick Clallam County courthouse at Fourth and Lincoln. Down on the waterfront, Michael Earles completed the construction of his new sawmill in 1914. The "Big Mill," as it soon became known, dwarfed the downtown and the other businesses on the waterfront. The mill's large size compared to the buildings around it foreshadowed the dominant

[59] Paul J. Martin, *Port Angeles, Washington: A History* (Port Angeles: Peninsula Publishing, Inc., 1983), 109–15.

role that the lumber, pulp, and paper industries—powered with Elwha electricity—would occupy in the history of Port Angeles and the surrounding vicinity for the next century.

Figure 47. Dedication of the Clallam County Courthouse, located at Fourth and Lincoln Streets in Port Angeles, June 14, 1915. Courtesy of the Bert Kellogg Collection of the North Olympic Library System. [PTAN BLDX – 090.jpg]

Also in 1914, a grand new tourist destination, the Olympic Hotel, also opened its doors. The Olympic, a three-story, 50-room, brick edifice with hot and cold running water, electric lights, and telephones in every room, provided "all the convenience of a first class hotel."[60] The "Prosperity Edition" of the *Port Angeles Tribune-Times* noted that the Olympic Hotel gave "to Port Angeles an institution that she has long wanted."[61]

All the new developments in 1914—the hotel, the regraded waterfront area, the new courthouse, Earles Mill, and, especially, the transmission of affordable Elwha power to the city—left city

[60] "New and Modern Hotel Olympic," *Port Angeles Tribune-Times*, Prosperity Edition, n.d., ca. 1914, News Clipping File 1911–1915.

[61] "New and Modern Hotel Olympic."

leaders and civic boosters bursting with pride and boasting about the area's rosy future. The *Olympic-Leader* captured the city's swelling sense of importance in a June 1915 article revealing the city of Seattle's possible interest in purchasing Elwha power, or the power plant itself, from the Olympic Power and Development Company. The paper saw it as evidence that Port Angeles was "coming into its own and that the eyes of the world are daily watching the development of the Olympic Peninsula."[62] Every burgeoning former frontier community dreamed of growing into a regional power and gaining national recognition. Community members felt certain that the new developments of 1914 signaled that Port Angeles was ready to become one of the leading cities of the Pacific Northwest. Some of the expected benefits came to fruition. But in reality, Port Angeles and the north peninsula still had a long way to go to capture the full extent of the promise and anticipation in the air that year.

[62] "City of Seattle Wants Elwha Power Plant," *Port Angeles Olympic-Leader*, June 9, 1915.

Figure 48. The city's first passenger train, run by the Milwaukee Railroad Company, ready to leave Port Angeles for the Elwha River, July 21, 1914. Photograph by Angeles Studio. Courtesy of Olympic National Park. [PA_1stPassengerTrain.TIF]

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Chapter 3
Transformations:
A River, a Tribe, a City

Going on down the Seig trail to the great clearing overlooking two miles of bottom, it was at once evident that the Old Elwha is in tethers.
Grant Hume, 1927

Completion of the Elwha Dam powered the growth of Port Angeles and other Olympic Peninsula communities and shaped the lives of individuals who lived and worked there. Elwha River electrical production and another abundant local resource, Olympic Peninsula timber, brought important new industries, most notably pulp and paper processing, to the region. Just as Thomas Aldwell had foreseen, "power generation on the Elwha made industrial development possible" in Port Angeles, Sequim, and Port Townsend.[1] The introduction of hydropower to the region, coupled with scientific advances in timber processing, expanded the range of potential forest products that could be manufactured in Port Angeles. As a result, the town grew and flourished until the most difficult years of the Great Depression arrived.

[1] Aldwell, *Conquering the Last Frontier*, 120.

Figure 49. Laurel Street, looking north, 1916. Courtesy of the Bert Kellogg Collection of the North Olympic Library System. [PTAN BLDX – 025.jpg]

The Industrial Growth of Port Angeles

Even before the development of Elwha River hydropower, Port Angeles' economy was tied to timber and timber products. Logging camps and lumber mills were significant industries on the Olympic Peninsula as early as the 1880s, and their prevalence increased with the advent of new technologies. The peninsula's first loggers typically used draft animals to haul logs out of the thick Olympic forests to small sawmills or the nearest navigable body of water. But as the easily accessible stands near the shorelines disappeared in the latter part of the nineteenth century, timber operators turned to a mechanized device called the steam donkey to retrieve logs from deeper within the forests. The steam donkey employed a steam-powered winch that could drag large logs out of the forest to an area where the logs could then be loaded onto railroad cars or trucks. The steam donkey enabled loggers to increase production and work in previously

untapped timber stands.[2] Parts of the Elwha Valley, including the Indian Creek and Dry Creek tributary drainages, were logged at the turn of the century.[3] In 1912, the *Seattle Daily Times* boasted that Clallam County contained more than 60 billion board feet of timber on privately owned land and another 25 billion feet on federal land.[4]

[2] John McCallum and Lorraine Wilcox Ross, *Port Angeles, U.S.A.* (Seattle: Wood and Reber, Inc., 1961), 82, 104; and Elmer Critchfield, "Logging—Central Area Port Angeles to Lyre River and Twin Rivers Area," in *Jimmy Come Lately: History of Clallam County*, ed. Jervis Russell (Port Angeles: Clallam County Historical Society, 1971), 574–78.

[3] Evans, *Historic Resource Study*, 139.

[4] "Clallam County Is Empire in Itself," *Seattle Daily Times*, June 27, 1912, 28.

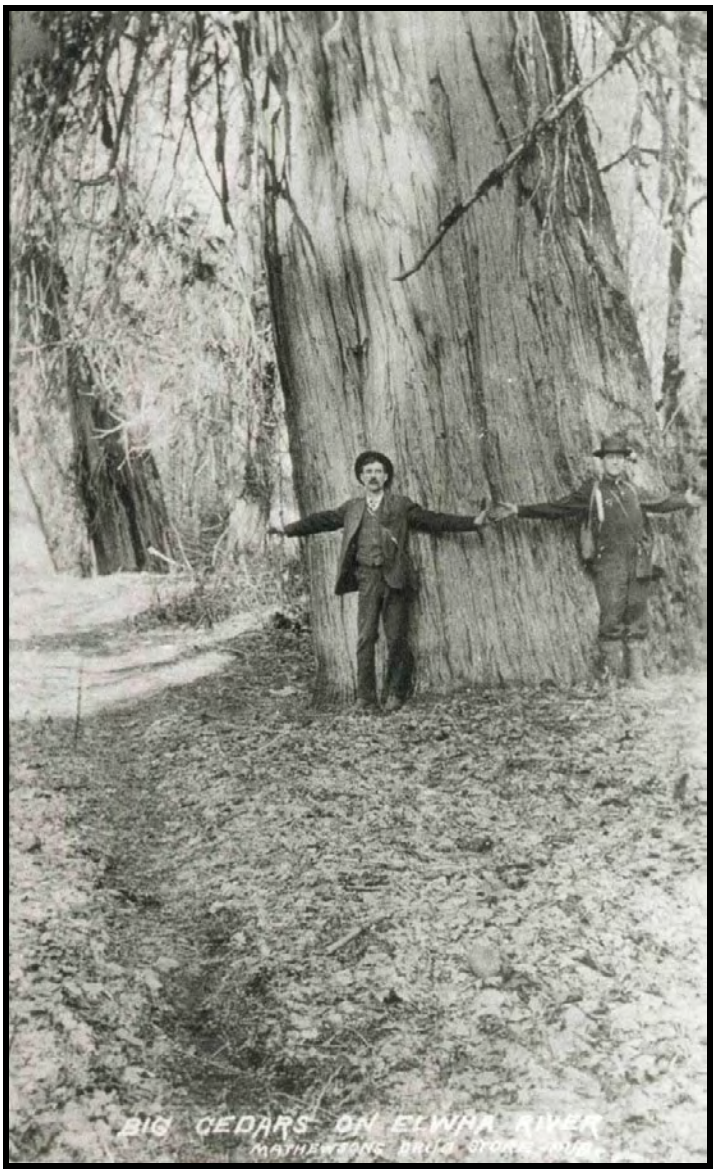

Figure 50. Jack Pike, on the left, and unknown companion by cedar tree along Elwha River, 1930. Courtesy of Olympic National Park. [FIS004001.JPG]

In the late nineteenth century, logging companies began laying railroad tracks to their inland timber holdings. The railroads that pierced the wilderness also boosted timber production and hastened the supply line of logs headed to the mills. A Seattle, Port Angeles and Western Railway promotional piece praised the company's logging rail line, which made it "possible to manufacture and market the vast timber resources of Clallam County at and from Port Angeles,"

putting the city "on a footing with other Coast localities."[5] Logging crews used railroads to move timber to mills in Port Angeles and elsewhere, allowing crews to work even deeper in the forests of the Olympic Peninsula.[6] Logging and timber mills also became the primary source of jobs in the region. Elwha Klallam tribal members, Indians from other tribes, long-established homesteaders, and new immigrants all found employment in the forests and mills.

Logging camps and small sawmills began to dot the peninsula soon after new homesteaders arrived. The Puget Sound Co-operative Colony launched the peninsula's first substantial logging and milling operation in 1887, which produced the materials needed to build the colony. Organizers of the colony hoped to create a utopian community where members lived and worked together, and selected the developing community of Port Angeles as the ideal location for their experiment.[7] The colony's mill, the first timber mill in Port Angeles, was located at the mouth of Ennis Creek. The mill began operation in 1888, producing lumber, shingles, shakes, and laths; it changed hands several times in 1889, before an 1890 housing boom in Port Angeles increased demand for building materials. The mill burned around 1904, close to the same time that the colony disbanded.[8]

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[5] Seattle, Port Angeles and Western Railway Co. *A New Empire* (Seattle: Izzard Company, 1915), [8], ONPA.

[6] Kit Oldham, "Clallam County—Thumbnail History," HistoryLink.org, Online Encyclopedia of Washington State History (hereafter cited as HistoryLink.org), http://historylink.org/index.cfm?DisplayPage=output.cfm&file_id=7576 (accessed November 13, 2009).

[7] Paul J. Martin, *Port Angeles, Washington: A History* (Port Angeles: Peninsula Publishing, Inc., 1983), 36.

[8] G. M. Lauridsen and A. A. Smith, *The Story of Port Angeles, Clallam County, Washington* (Seattle: Lowman and Hanford Company, 1937), 134–35; Martin, *Port Angeles*, 42; James Machenheimer, "Puget Sound Co-Operative Colony Mill," in Russell, *Jimmy Come Lately*, 598; and Kit Oldham, "The Puget Sound Co-operative Colony is established at Port Angeles in June 1887," HistoryLink.org, http://www.historylink.org/index.cfm?DisplayPage=output.cfm&file_id=8219 (accessed November 3, 2009).

Figure 51. The Puget Sound Co-operative Colony's lumber mill at the north end of Chambers Street, 1888. Courtesy of the Bert Kellogg Collection of the North Olympic Library System. [CLNY MILL – 002.jpg]

In 1893, the Filion brothers, Ismael, Felix, and Alfred, left their Michigan sawmill and moved to Port Angeles to open a shingle and lumber mill. They built the mill at West 16th Street between B and C streets, away from the Port Angeles Harbor in what is today a residential area. Despite the economic panic of 1893, the Filion brothers began milling operations, providing needed jobs for area residents. For two decades, between 1893 and 1914, the Filion mill employed more workers than any other company in Port Angeles. The mill closed only briefly when a 1903 fire necessitated rebuilding. The Filion mill remained running during World War I, employing women to work jobs vacated by men who were fighting in Europe.[9]

[9] Lauridsen and Smith, *Story of Port Angeles*, 131–32; Fred Filion, "The Filion Mill and Lumber Company," in Russell, *Jimmy Come Lately*, 601–2; Kit Oldham, "Port Angeles—Thumbnail History," HistoryLink.org,
… continued on next page

Figure 52. Filion Lumber Mill and men outside the mill during building construction, Port Angeles, 1893. Courtesy of the Bert Kellogg Collection of the North Olympic Library System. [loggmill—2.jpg]

Michael Earles, who had recently moved to the Olympic Peninsula from California's redwood country, opened the next sawmill in Port Angeles. Eager to boost industrial growth in Port Angeles, city civic and business leaders purchased land near the base of Ediz Hook for Earles to build what became known as the "Big Mill." Earles established the Puget Sound Mills and Timber Company and began milling operations in 1914.[10] That year, the *Port Angeles Tribune-Times* reported that the Puget Sound Mills and Timber sawmill was "the largest mill on Puget Sound and the most modern in the world."[11] The Big Mill produced lumber construction

http://www.historylink.org/index.cfm?DisplayPage=output.cfm&File_Id=8210 (accessed November 3, 2009); "Olympic Peninsula of the State of Washington," [14]; and Aldwell, *Conquering the Last Frontier*, 26–27.

[10] Martin, *Port Angeles*, 97; Lauridsen and Smith, *Story of Port Angeles*, 132–34; and "Olympic Peninsula of the State of Washington," [14].

[11] "Built at a Cost of One and a Half Million Dollars, Is the Last Word in Modern Methods of Handling the Manufacture of Lumber," *Port Angeles Tribune-Times*, May 1914, reprinted in *Straight History* 4, no. 3 (Spring 1989).

materials and also made boxes.[12] After Michael Earles' death in 1919, the Charles Nelson Company purchased the sawmill from the Puget Sound Mills and Timber Company.[13] By then, abundant timber resources, rail transportation, and Elwha River hydropower were making Port Angeles a center of the regional timber industry.

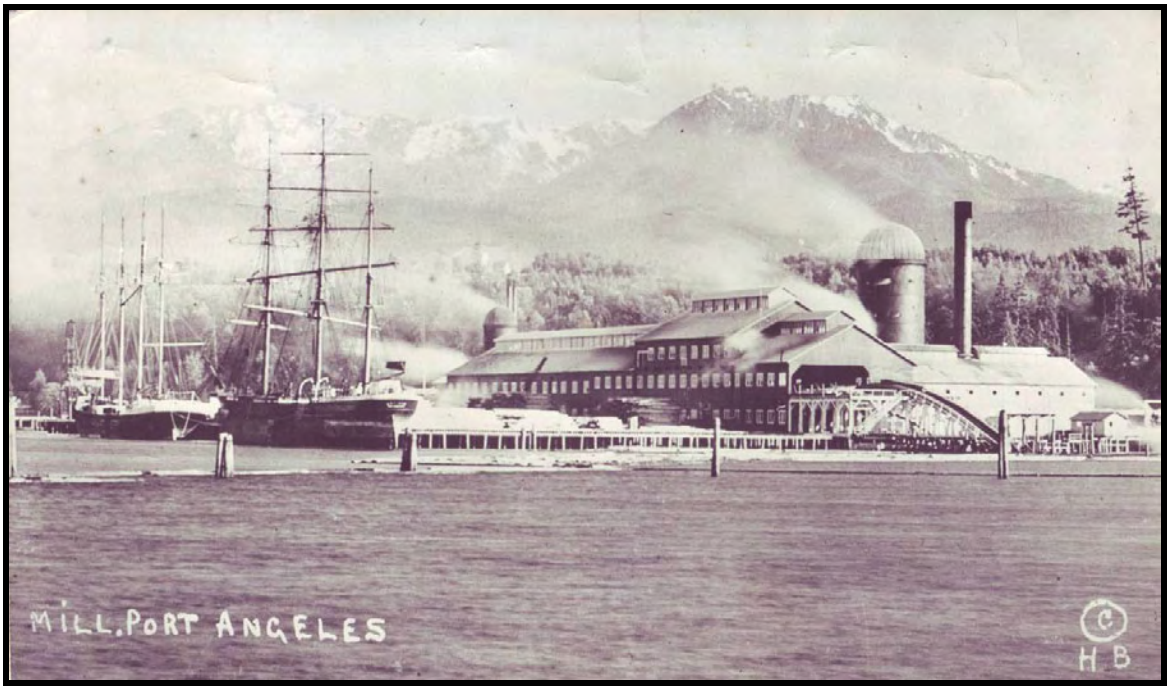

Figure 53. Earles' Mill, also known as the "Big Mill," ca. 1914. Photograph by "H. B." Courtesy of Olympic National Park. [Rotation of HAER_OLYM437_HistoricMill0001.tif]

After the onset of World War I, the U.S. Army's Spruce Division moved into the forests of the Olympic Peninsula to begin logging spruce trees, which had became particularly valuable because the lightweight wood was used to build airplanes. To facilitate spruce production, the Army laid tracks for a railroad from Lake Pleasant to Joyce (and a connection to the Port

[12] Martin, *Port Angeles*, 106.

[13] Martin gives Earles' death date and suggests that the Charles Nelson Company purchased the mill after that date (*Port Angeles*, 134), while Lynda V. Mapes gives both 1914 and 1929 as the date when the Charles Nelson Company took over operations (*Breaking Ground: The Lower Elwha Klallam Tribe and the Unearthing of Tse-whit-zen Village* [Seattle: University of Washington Press, 2009], 94, 97). See also Harriet U. Fish, "Port Angeles Mills that Located on Waterfront," *Chronicle*, January 2, 1985, available in Mills folder, Northwest Reference vertical files, North Olympic Library System (hereafter NOLS) clippings file, Port Angeles, Washington.

Angeles Western Railroad), via the northern shore of Lake Crescent.[14] To complement the logging camps and railroad, the army also decided to construct a Spruce Division lumber mill at the mouth of Ennis Creek in 1917. However, completion of this mill coincided with the end of World War I, and it never opened.[15] As soon as the war ended, the market demand for spruce plummeted.

Figure 54. The U.S. Spruce Corporation Mill, located at the mouth of Ennis Creek, ca. 1918. Courtesy of the Bert Kellogg Collection of the North Olympic Library System. [PTAN MILL – 002.jpg]

Pulp and Paper Mills, 1918–1929

Technological advances in the late 1910s expanded the range of products that companies could make from timber. Even logs that in the past were left behind could be ground up and processed to create pulp for papermaking.[16] The pulping process turned what were once termed

[14] Martin, *Port Angeles*, 131.

[15] Martin, *Port Angeles*, 126–31; Aldwell, *Conquering the Last Frontier*, 133–38; James Machenheimer, "United States Spruce Corporation Mill," in Russell, *Jimmy Come Lately*, 606; and Critchfield, "Logging," 578–79.

[16] Mapes, *Breaking Ground*, 83.

"slash" tree species, particularly the ever-abundant Western hemlock, into a valuable timber resource. The availability of Elwha hydroelectric power, the abundance of timber and fresh water, and growing demand for paper combined to make the pulp and paper industry a lucrative enterprise on the Olympic Peninsula.[17]

In 1918, the Northern Boxboard Company opened the city's first pulp and paper mill. At the time, Northern Boxboard already owned a boxboard mill in Sumner, Washington. Company owners and the general manager, A. H. Dougall, decided to expand their business to Port Angeles, where inexpensive Elwha hydropower and plentiful timber resources were sure to make them a profit. Thomas Aldwell helped convince Dougall to make the move, because the new mill would pay the Olympic Power and Development Company $45,000 annually for electricity from the Elwha Dam power plant.[18] The Chamber of Commerce, City Council, and Clallam County Board of Commissioners also wooed the boxboard company to come to Port Angeles by giving the company city land to build their mill. Northern Boxboard created a subsidiary, the Crescent Boxboard Company, which completed construction of the mill and began operations in 1918.[19] The mill produced boxboard, also known as fiberboard, which was used to make cartons for food products such as milk, ice cream, and other edible packaged goods.[20] Crescent Boxboard sat just southwest of Earles's "Big Mill" on the Port Angeles waterfront. Crescent Boxboard Company became Fibreboard Products, Incorporated, in 1927, but mill operations remained the same.

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[17] Louter, "Elwha River Hydroelectric System," 24.

[18] Aldwell, *Conquering the Last Frontier*, 131.

[19] Aldwell, *Conquering the Last Frontier*, 132–33.

[20] Aldwell, *Conquering the Last Frontier*, 130–33; Martin, *Port Angeles*, 133; McCallum and Ross, *Port Angeles*, 113; and James Machenheimer, "Fibreboard Paper Products Corporation," in Russell, *Jimmy Come Lately*, 603.

Even before the Crescent Boxboard Company arrived, Canadians James and George Whalen were preparing to build a paper mill of their own in Port Angeles. In 1917, the two brothers shipped sawmill equipment from their family-owned plant in British Columbia to the site they had chosen on Ediz Hook. But America's entry into World War I and the brothers' financial shortcomings put an end to their project before they could begin construction, leaving their machinery sitting in a warehouse.[21] In the meantime, Aldwell and Edward Mills, a partner at Peabody, Houghteling and Company were still looking for financially solvent customers to buy electricity from the Elwha power plant. They eventually convinced the Zellerbach Paper Company of San Francisco to open a new mill in Port Angeles. In the late teens, Zellerbach Paper Company was a large conglomerate of mills and other companies, but it did not yet have a stake in the Pacific Northwest. Isadore Zellerbach, head of the company, wanted to expand operations into Washington to tap into the state's wealth of forest resources.[22] Elwha River hydropower and abundant Olympic Peninsula timber convinced Zellerbach to launch a new mill in Port Angeles. In 1919, the Zellerbach subsidiary Washington Pulp and Paper Company purchased the Whalen brothers' equipment and began construction of a new pulp and paper mill at the base of Ediz Hook. That year, Zellerbach also purchased the Elwha Dam power plant from Northwestern Power and Manufacturing Company (successor to the Olympic Power Company) to ensure the mill would have the electricity it needed.

[21] William Welsh, *A Brief History of Port Angeles* (Port Angeles: Crown Zellerbach Corporation, 1941, rev. 1960), 24-25.

[22] Louter, "Elwha River Hydroelectric System," 25.

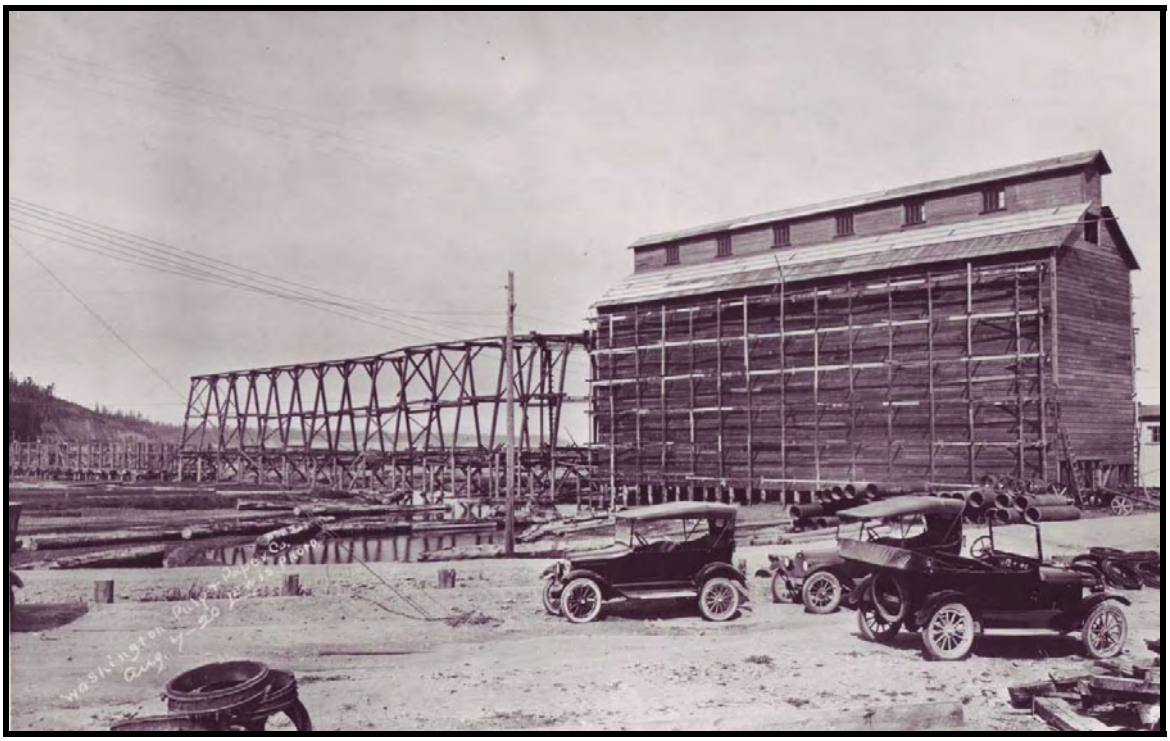

Figure 55. Construction of Washington Pulp and Paper Company mill, August 7, 1920. Photograph by F. G. Lewis Photo, Port Angeles, Wash. Courtesy of Olympic National Park. [PA_WAPulp_construc1920-rotatedcropped.TIF]

The Washington Pulp and Paper mill opened in late 1920, producing newsprint and paper for city and county directories. The mill had produced its first reel of newsprint on December 14, 1920. After some initial adjustments to the machinery, the plant began turning out 55 tons of paper a day, and the company made the first shipment of newsprint to San Francisco by the end of the year.[23] Washington Pulp installed the plant's second and third newsprint machines in 1922 and 1927, respectively. The company name changed to the more familiar Crown Zellerbach Corporation after the 1928 acquisition of the Crown Willamette Pulp and Paper Mill. By that time, the pulp and paper industry that would dominate the economic life of Port Angeles and the

[23] "Crown-Z Newsprint Mill Producing 350 Tons Daily," *Port Angeles Evening News*, April 19, 1941.

north peninsula for the next 80 years was flourishing with two large mills (Crescent Boxboard and Crown Zellerbach) operating at full speed and another soon to come on-line.[24]

TSE-WHIT-ZEN

One of the major Elwha Klallam villages, Tse-whit-zen, sat at the base of the Ediz Hook sand spit, which forms Port Angeles Harbor. When Elwha River hydropower helped bring a new industry—pulp and paper manufacturing—to Port Angeles, private companies built two of the new pulp mills on top of portions of the abandoned village and unearthed human remains in the process. Tribal elders kept alive, in their memories and oral traditions, the story of Tse-whit-zen and the knowledge that many of their ancestors were buried beneath the paper mills. But the full extent of the burial site was not clearly understood until 2005, when excavation for a new state dry dock unearthed the remains of what would eventually total more than 300 burials.

INSERT: Images of artifact(s) from site if available and permission obtained.

More Power from the Elwha

The promise of plentiful Elwha electrical power lured the Zellerbach Paper Company to Port Angeles to build the Washington Pulp and Paper Company pulp and newsprint plant. Yet within two years, Washington Pulp and Paper's power requirements had quickly outstripped the initial production capacity of the Elwha Dam, prompting the owners to return to the river to generate more electricity. In 1922, Northwestern Power Company, the corporate successor of the Olympic Power and Development Company, built an annex onto to the original Elwha power plant and

[24] Martin, *Port Angeles*, 135; McCallum and Ross, *Port Angeles*, 115–16; Aldwell, *Conquering the Last Frontier*, 119; and James Machenheimer, "Crown Zellerbach Corporation," in Russell, *Jimmy Come Lately*, 598–99.

installed two new Francis-type turbines with Westinghouse AC generators. A single 15-foot diameter penstock with a 'Y' joint at its end delivered water to both turbines.[25] The beefed-up power plant produced an additional 6,600 kilowatts of electricity, roughly doubling the plant's former capacity.[26]

Figure 56. Aerial view of the Elwha Dam, showing power plant annex (left of the main power plant building) and larger-diameter penstock, both added in 1922, n.d. Courtesy of Olympic National Park. [Walsh#8.jpg]

[25] Louter, "Elwha River Hydroelectric System," 14.

[26] Louter, "Elwha River Hydroelectric System," 26.

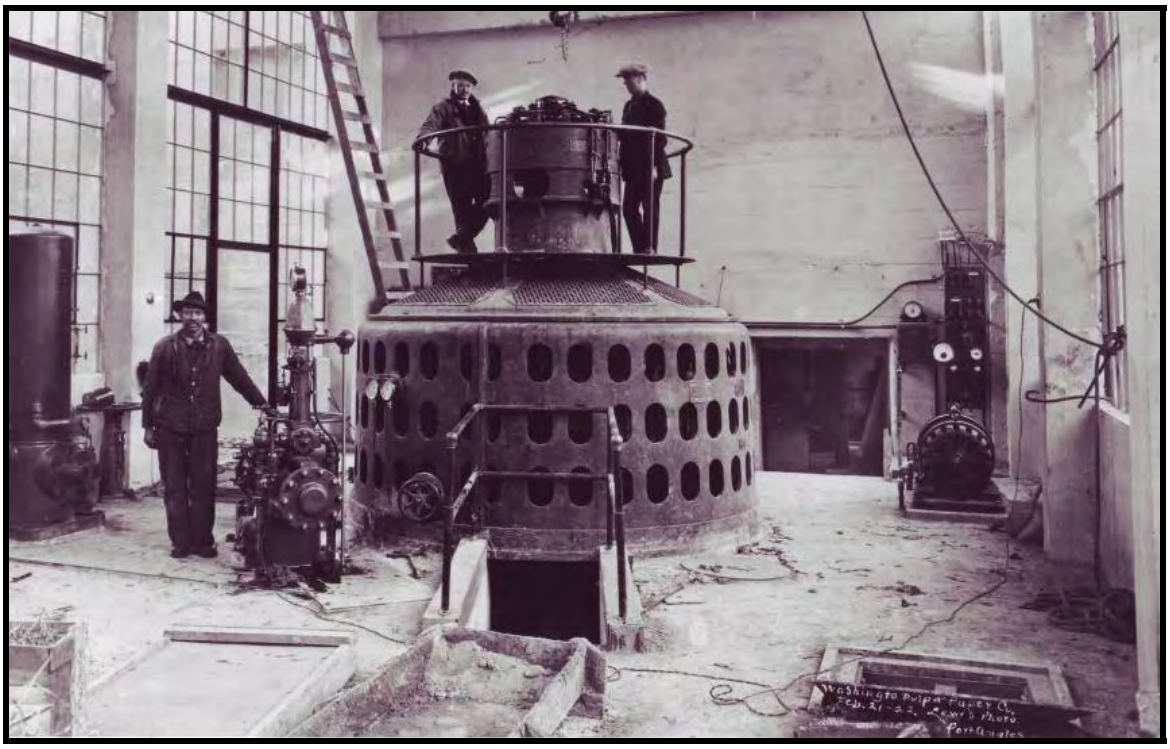

Figure 57. Interior of the Elwha Dam power plant, showing the no. 3 generator, ca. 1922. Courtesy of Olympic National Park. [HAER_OLYM437_LewisWP&P2.TIF]

Despite the increased voltage, just two years later, the Washington Pulp and Paper mill was again looking for more power to operate a third paper machine. The owners turned to the Northwestern Power and Manufacturing Company (another recapitalization of the original Olympic Power and Development Company) for a new source of electrical power production. The company's hydraulic engineers investigated possible sites for new dams on the Elwha River. They reported that three locations—McDonald Bridge, Rica Canyon, and Glines Canyon—were the most promising.

Figure 58. Thomas Aldwell and other company and city leaders at Glines Canyon Dam construction site. Aldwell is the fourth from the left, wearing long overcoat, ca. 1926. Courtesy of Olympic National Park. [HAER_OLYM437_LewisWP&P4.TIF]

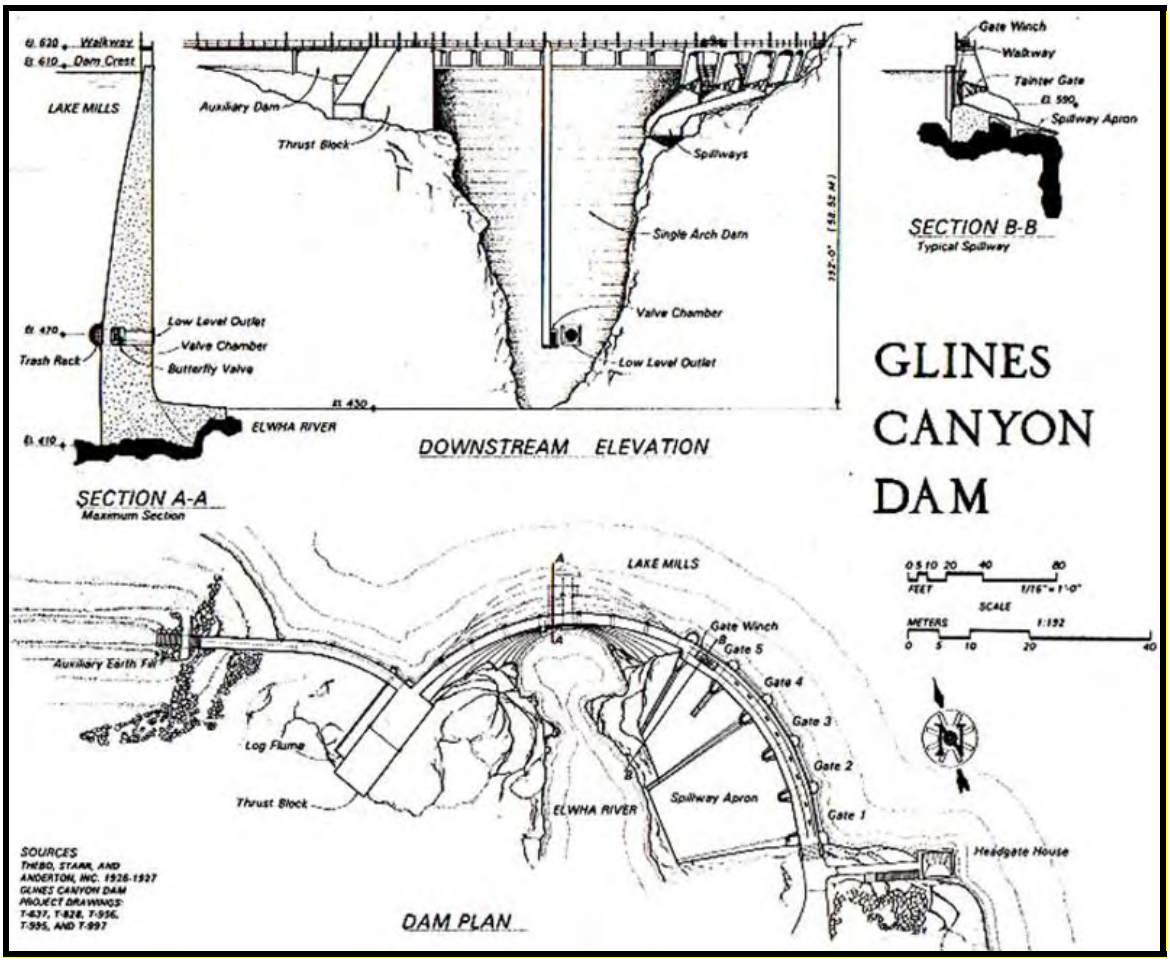

Figure 59. Engineering drawing of Glines Canyon Dam. Courtesy of Olympic National Park. [Glines plan.jpg]

The company eventually selected Glines Canyon, eight and one-half miles upriver from the Elwha Dam, because it offered several benefits over the McDonald Bridge and Rica Canyon sites. For one, Northwestern Power and Light already owned much of the land encompassing the dam site and impoundment area of the future reservoir, as part of Aldwell's land acquisition scheme in preparation for construction of the first dam. Second, the physical location was ideal for the type of dam they had in mind. Glines Canyon, unlike the Elwha Dam site, had bedrock immediately below the stream-bottom gravel, ensuring a sound foundation for the dam. And Glines was a narrow canyon that featured near-perpendicular walls rising roughly 200 feet above the river, an ideal spot for a concrete-arch dam, the favored hydropower structure of the day. In

fact, Seattle City Light had recently completed a similar arch dam at Diablo Canyon in the North Cascades Mountains.[27]

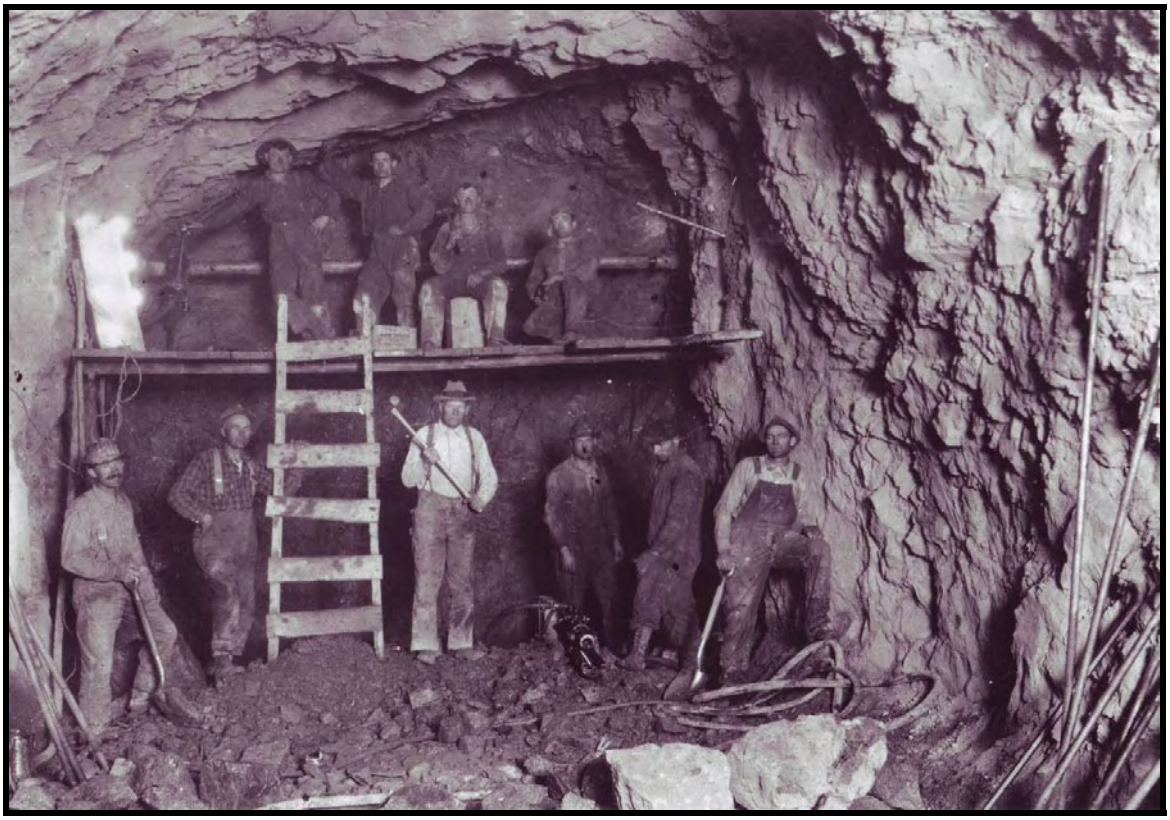

Figure 60. Crew digging bypass tunnel at Glines Canyon Dam, ca. 1926-1927. Courtesy of Olympic National Park. [HAER_OLYM437_Oliver1.TIF]

Concrete-arch dams, because of their higher strength-to-materials ratio, could be built at a lower cost than gravity dams like the Elwha Dam. Glines Canyon offered a second money-saving advantage: the company would link the new dam's hydropower generation and transmission systems to the existing Elwha power plant, significantly reducing the company's operational costs. Since Northwestern Power continued to face financial difficulties, they chose Glines Canyon because it offered them the greatest power generation at the lowest cost.

[27] Louter, "Elwha River Hydroelectric System," 29.

Figure 61. Construction of intake at Glines Canyon Dam, ca. 1926–1927. Courtesy of Olympic National Park. [HAER_OLYM437_SlemmonsElwha1.TIF]

The emphasis on cost savings, however, did not extend to skimping on the structural integrity of the dam. Aldwell and Peabody, Houghteling had learned their lesson at the first Elwha Dam. They chose a contractor with experience in the mountain West, the San Francisco-based construction firm Thebo, Starr and Anderton, Inc., to perform the work. Construction work began in May 1926. Before they could start the blasting and framing tasks in the canyon, the contractor first built a five-mile extension to the Elwha River Road in order to transport the

required equipment and materials to the site.[28] Workers then blasted a diversion tunnel through one wall of Glines Canyon to direct water around the dam construction site during construction. Thus the Glines Canyon project not only expanded the power production for Washington Pulp and Paper and Port Angeles but also expanded motor access to the upper Elwha Valley and Olympic Hot Springs, a result that area recreationists would take advantage of once construction was completed.

Figure 62. Diversion tunnel at Glines Canyon Dam, June 15, [1927]. The river was diverted through this tunnel while dam construction was underway. Courtesy of Clallam County Historical Society, ONP ref. no. 2010.200.135. [2010200135.JPG]

[28] Louter, "Elwha River Hydroelectric System," 28.

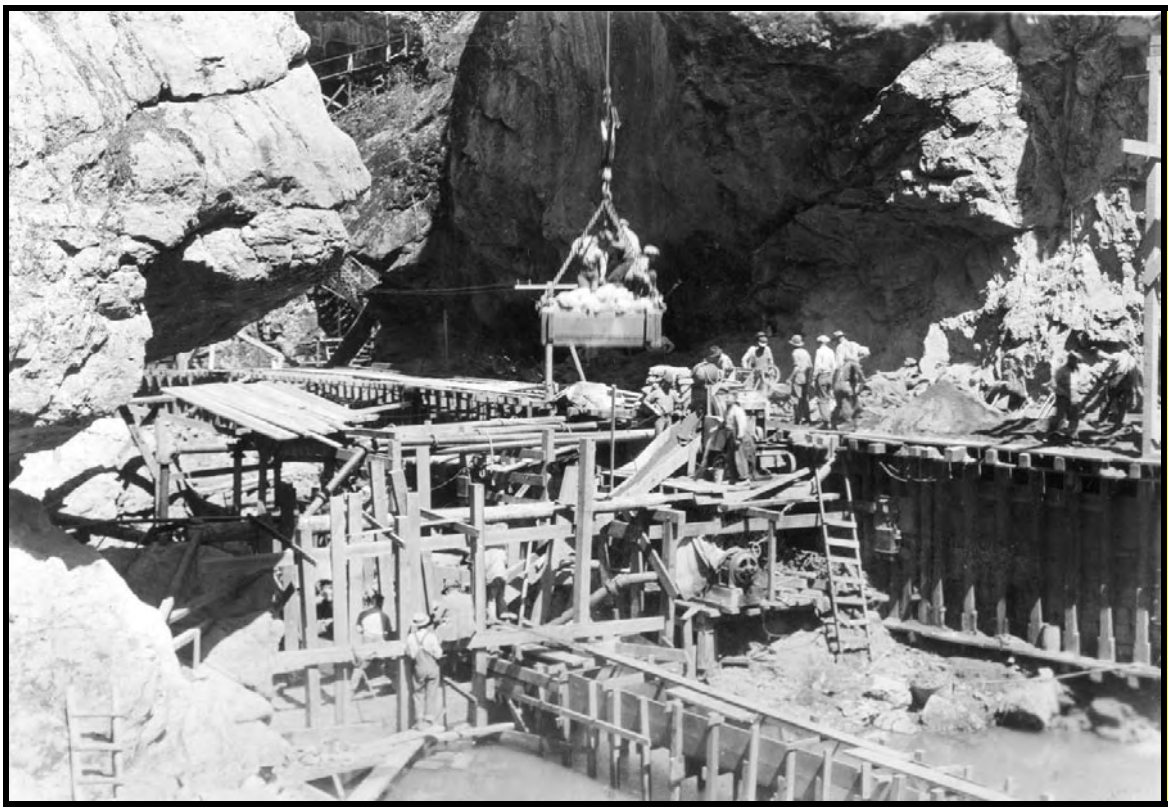

Figure 63. Construction of a cofferdam at Glines Canyon Dam, ca. 1926-1927. Courtesy of Clallam County Historical Society, ONP ref. no. 2010.200.089. [201020089.JPG]

Preparatory to building the dam, a community of workers, virtually all men, came to live and work at the construction site. The construction camp was situated on the river's west side, high on a bluff above Glines Canyon. Another tent camp was located about a mile farther upstream, occupied by loggers felling trees in the "backwater" area behind the dam. Before the road was completed, Oscar Peterson ran pack trains up and down the valley to keep the camp supplied with food and equipment.[29] The construction crew was a diverse group, made up of locals, residents of other Washington communities, and immigrants from Greece, Germany, and other

[29] Rollin Shaw, interview by Anna Clawson, January 6, 1995, transcript, Oral History Collection, OLYM-605, ONPA. 3-4.

foreign countries.[30] There were surveyors, engineers, equipment operators, laborers, carpenters, cooks, drivers, maintenance workers, and numerous other occupations represented in the camp.

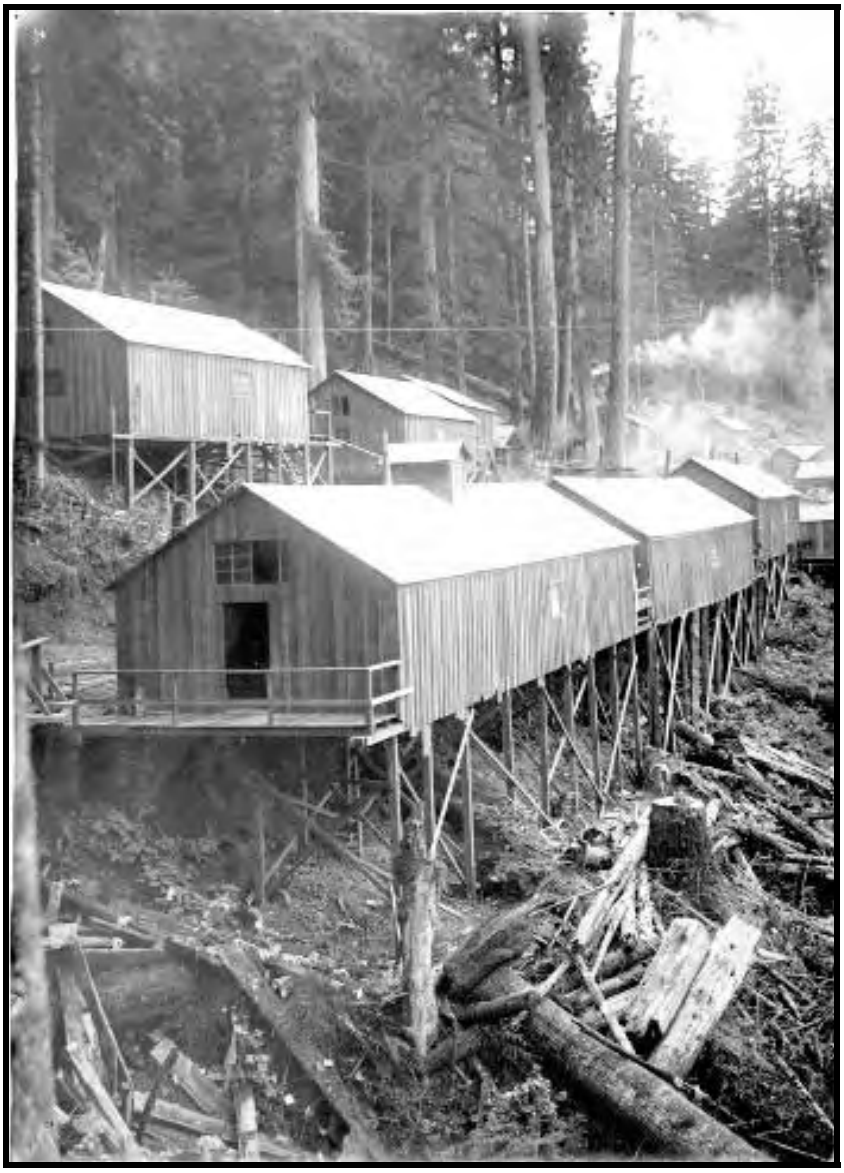

Figure 64. Glines Canyon Dam bunk houses, ca. 1926–1927. Courtesy of Clallam County Historical Society, ONP ref. no. 2010.200.144. [2010200144-2.JPG]

Dam construction drew spectators to the site as well. In an era before television, a major construction project provided high entertainment value. Charles Pangrantz remembered his

[30] Neil Pendley, interview by Jacilee Wray, July 26, 1996, transcript, Oral History Collection, OLYM-605, … continued on next page

family making Sunday trips up the Elwha Valley to Glines Canyon to view the construction activities. As he recalled, "That was quite a thing to see that dam going up in stages. My folks used to go up there and my dad was all interested in the outdoor activities and what not."[31]

Figure 65. Cooks for work crews at Glines Canyon Dam, ca. 1926–1927. During the two years of construction at Glines Canyon a temporary community of more than a hundred laborers, engineers, carpenters, pipe fitters, cooks, janitors, and so on enlivened that part of the Elwha Valley. Courtesy of Olympic National Park. [NPSElwha_Glines1.TIF]

The Glines Canyon location provided many advantages for dam building, but it also presented major challenges and dangers to the workers. The canyon was a narrow notch between near-vertical cliff walls, thus all of the contractor's housing, equipment, and materials staging

ONPA, 6.

had to be located high above.[32] One of the most critical functions--concrete preparation and pouring--was accomplished at a facility perched on the very edge of the canyon precipice. Crews sent the mixed concrete down flumes that extended out over the river, using gravity to help them pour the molds for the foundation and walls.[33] In January 1927, the wooden scaffolding buckled under a load of cement, sending logs, equipment, and cement careening to the base of the dam. Four workmen at the bottom were crushed to death, and seven others working above on the scaffolding suffered severe injuries from their falls.[34]

[31] Charles Pangrantz (CH) and Father Clement Pangrantz (CL), interview by Paul Gleeson, September 16, 2000, transcript, Oral History Collection, OLYM-605, ONPA, 27-28.

[32] Louter, "Elwha River Hydroelectric System," 29.

[33] Louter, "Elwha River Hydroelectric System," 30.

[34] "Four Men Are Killed in Canyon Dam Tragedy," *Olympic-Tribune*, January 21, 1927.

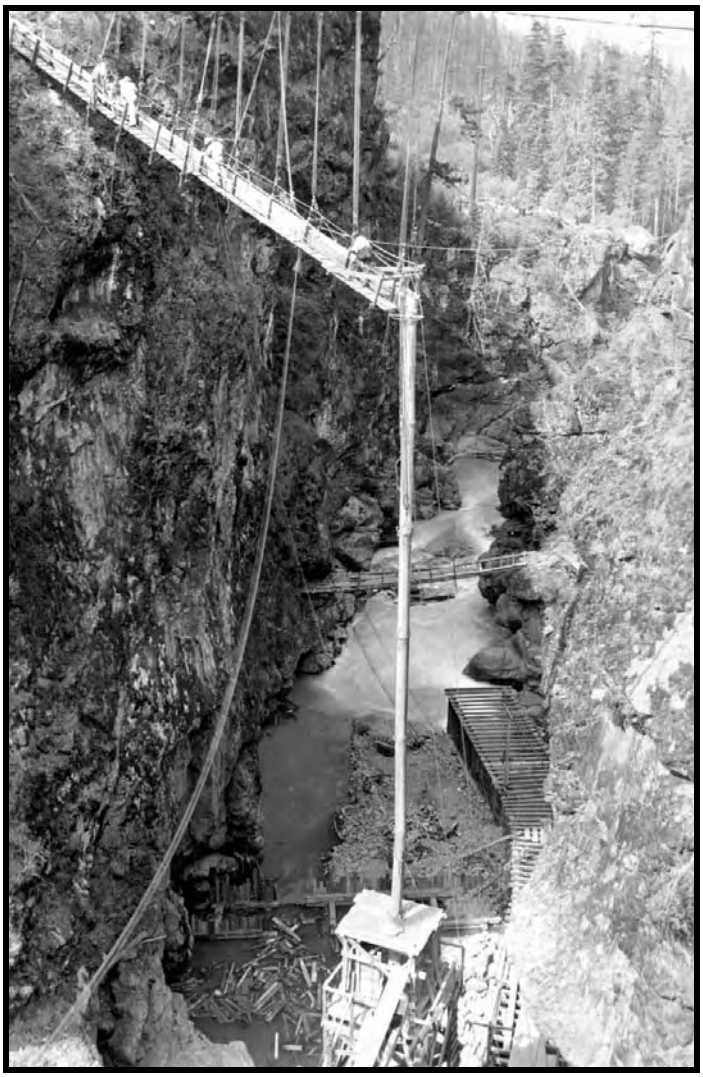

Figure 66. Cement chute at Glines Canyon Dam, ca. 1926–1927. Courtesy of Clallam County Historical Society, ONP ref. no. 2010.200.059. [201020059.JPG]

Figure 67. Workers at Glines Canyon Dam, ca. 1926–1927. Courtesy of Olympic National Park. [HAER_OLYM437_Oliver3.TIF]

A little less than a year later, the 200-foot-tall dam was finished. The new Federal Power Commission, established in 1920, issued a 50-year operating license for the Glines Canyon facility in 1926. The commission's authority did not include licensing dams built prior to passage of the Federal Power Act, so the original Elwha Dam continued to operate without a license. Northwestern Power Company began generating electricity at the Glines Canyon power plant on April 29, 1927. A penstock delivered water to a Frances Pelton Water Wheel Company turbine

that excited a vertical General Electric AC generator. At 17,500 horsepower, the Pelton turbine, and transformer, could generate up to 66,000 volts. High-power wires transferred the electricity to the Elwha power plant.[35]

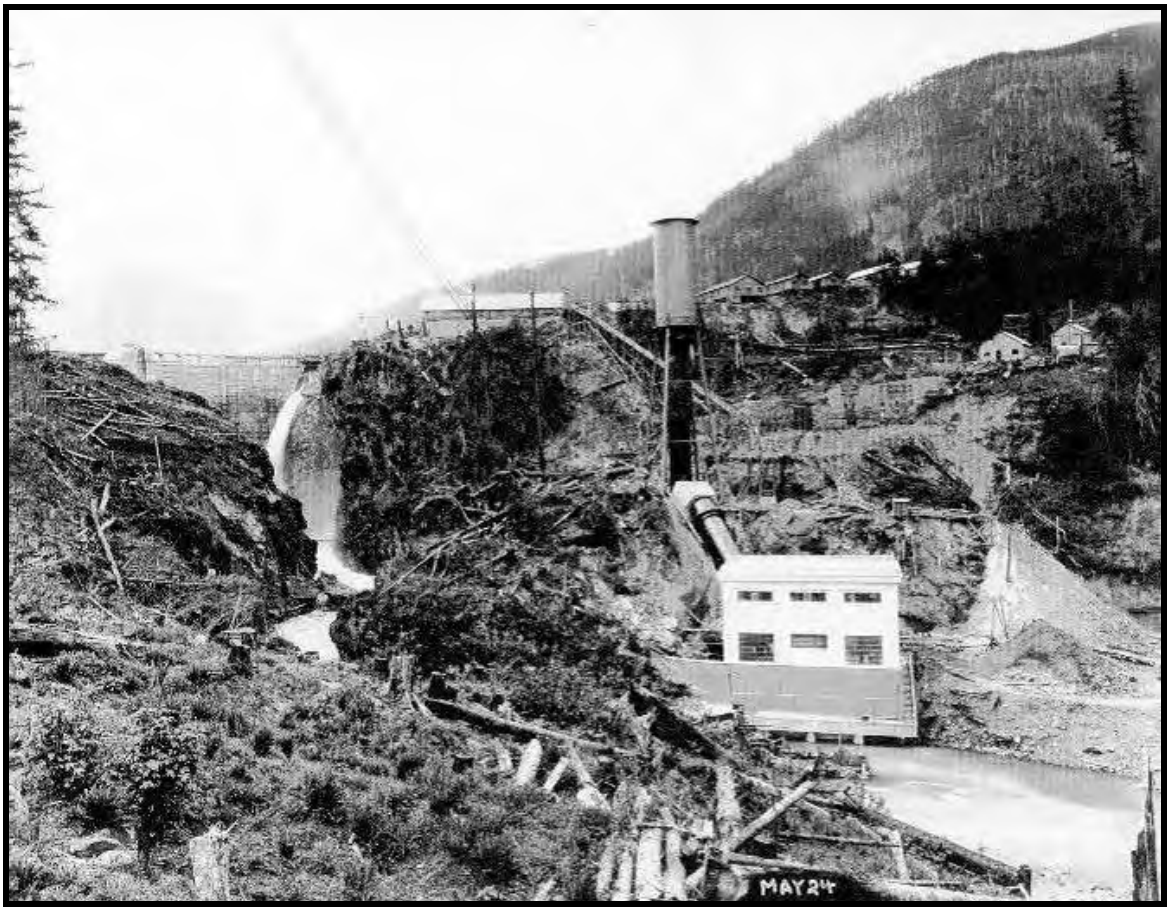

Figure 68. Overview of near complete Glines Canyon Dam, showing (left to right) upper portion of dam structure, water pouring from spillway, surge tank, section of penstock, and power plant, ca. 1927. Courtesy of Olympic National Park. [Glines May 24 1927-1.jpg]

A unique aspect of the Glines power plant was its "semi-automatic and remote control system."[36] At any given moment, the system could turn the generators on and off according to demand loads and water elevation. This remote operating system was important on the Elwha, because the company needed to synchronize power generation at Glines Canyon with the Elwha

[35] Louter, "Elwha River Hydroelectric System," 31.

Dam's power plant. Each power plant was typically staffed by one superintendent and five or six employees. Dam operators, supervisors, and maintenance personnel lived at each dam site with their families. The company required them to live on-site because, particularly in the early decades of the power plants, power outages were frequent occurrences. Since any stoppage of electrical generation at the power plants would also slow or shut down the Crown Zellerbach mill, the superintendent and his helpers had to be ready to respond immediately.

Figure 69. Air compressors at Glines Canyon Dam, ca. 1926–1927. Courtesy of Clallam County Historical Society, ONP ref. no. 2010.200.070. [201020070.JPG]

[36] Louter, "Elwha River Hydroelectric System," 31.

DISAPPEARING LANDSCAPE OF THE HOMESTEAD ERA

As the new reservoir (later named Lake Mills) began to fill behind the Glines Canyon Dam, longtime valley resident Grant Humes paid a final visit to the "landmarks of past years that are soon to disappear from view, forever."[37] As the water backed farther upstream, the lake inundated numerous fishing holes, recreational haunts, and old homestead claims familiar to him and to many of the valley's residents. During his excursion, Humes paused at the former homestead of Gustave and Emiline Wolff to mark the water's progress:

[An INSET PHOTO, portrait style, of Grant Humes would be effective here, but not currently available]

> Going on down the Seig trail to the great clearing overlooking 2 miles of bottom, it was at once evident that the Old Elwha is in tethers. The water is backing up rather rapidly—altho [sic] the river is low—about 1 ½ feet a day as conditions now are. At Seig Rock there is about 9 feet of new river on top of the old. . . . Took a picture looking up toward Mt. Fitzhenry over the cleared area—the last view of Wolff's ranch, probably, that will ever be seen. The water lacked by 2 feet of covering Wolff's old root cellar in the bank of the slough, some 200 feet down river from where the old barn stood, and it just reached the mouth of Boulder Creek, and also the spot where Smoky Cabin once stood. There is approximately 80 or 85 feet more water to come on when the dam is full to the top. . . . Of all Wolff's buildings that stood when I first came on the scene, nothing is left to tell the tale except two grassed over mounds of rock once serving as fireplaces, and within a week these will also be gone from view, even as Wolff himself—the builder—has passed from view.[38]

[37] Grant Humes to Will Humes, April 19, 1927, Folder 59: Humes Correspondence, Box 1, Johnson Elwha Sources, ONPA.

[38] G. Humes to W. Humes.

Figure 70. The Elwha River, June 1926. After the Glines Canyon Dam was completed, this spot was 100 feet beneath the surface of the reservoir. USFS photograph. Courtesy of Olympic National Park. [3137_210059.jpg]

In Port Angeles, construction of Glines Canyon Dam and power plant produced substantial economic gains. The additional hydropower enabled Washington Pulp and Paper Company to add a third paper machine at the mill, creating more income for the company and more jobs for the local community. Each paper machine required five people to operate; since the mills ran around the clock, with a workday usually divided into three shifts, the company required roughly

45 employees to operate the three paper machines. The company kept an even larger number of mechanics on the payroll, as well as employees who managed the many other tasks that went into paper production, such as hauling chips and wastepaper to the mill, converting chips to fiber, and reconverting fiber to pulp.[39] The timing of the expanded operations gained added significance two years later, when the country began its slide into the worst economic crisis of the twentieth century.

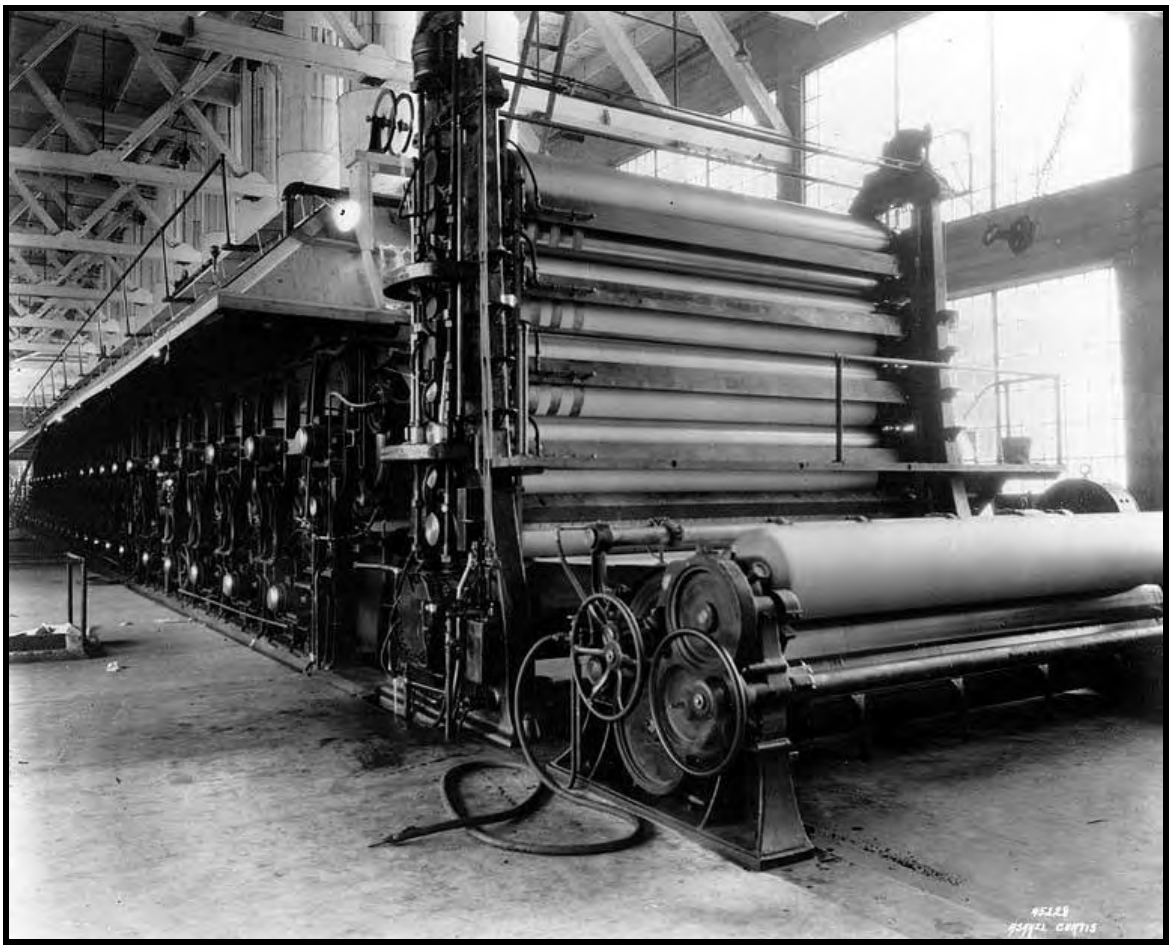

Figure 71. Papermaking machine inside Washington Pulp and Paper Company's mill, ca. 1923. Photograph by Asahel Curtis. Courtesy of University of Washington Libraries, Special Collections Division, Asahel Curtis Photo Co. Collection, PH Coll 482, CUR1477. [CUR1477.jpg]

[39] Michalczik interview, 12.

Figure 72. Washington Pulp and Paper Company mill, September 29, 1923. Photograph by F. G. Lewis Photo, Port Angeles, Wash. Courtesy of the Bert Kellogg Collection of the North Olympic Library System. [PTAN MILL – 063.jpg]

As Crown Zellerbach and the other Port Angeles mills continued to increase their output, they required more than just copious supplies of timber and electrical power; they also needed an abundance of freshwater. For this, the city again returned to the Elwha River. In 1929, Port Angeles residents voted their near-unanimous (2,819 to 11) approval for construction of a seven-mile-long water pipeline from the Elwha River to the city. A news editorial hailed the vote, saying that Port Angeles had "showed her colors to Northwest industrial leaders," and demonstrated that the city was "an ideal place to locate industries."[40] The new pipeline supplied city residents with drinking water and provided the water necessary for newcomer Olympic Forest Products to build another large pulp and paper mill on Port Angeles Harbor.[41]

[40] "A Solid Front," editorial, *Port Angeles Evening News*, September 31, 1929.

[41] Martin, *Port Angeles*, 165.

Olympic Forest Products began work on the new mill in late 1929, building near the mouth of Ennis Creek, on the site of the shuttered U.S. Army Spruce Division plant, after the latter had been demolished.[42] Edward Mills, the same man who helped convince the Zellerbach Company to expand to Port Angeles, and a group of business associates established Olympic Forest Products. Taking advantage of new advances in chemical pulping, the company specialized in converting Western hemlock logs into cellulose products such as rayon and cellophane. As John Gray, general manager of the mill after it became Rayonier, explained, "A tree is a bundle of cellulose fibers bound together by lignin, . . . What we do is take the tree apart and put it together again in a whole range of useful products."[43] The mill used the remaining wood scraps as fuel to power the plant. Their new plant began production in June 1930. In 1937, Olympic Forest Products merged with two other companies and became Rayonier, Incorporated.[44]

Port Angeles and the Great Depression, 1929–1945

When the Great Depression began in 1929, Port Angeles had two large sawmills, two existing pulp and paper mills, and a third pulp mill about to begin construction. Newspaperman E. B. Webster wrote to his son in 1933, describing the conditions in Port Angeles at that time. He said that the continued growth of the Zellerbach plant meant that "the hard times weren't felt here until two years after things generally flattened out. Really last year was the only year of what might be called hard times we had, but after the work stopped things were worse here . . . because so many came in to work on the mill . . . and then stayed on."[45]

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[42] Oldham, "Port Angeles."

[43] McCallum and Ross, *Port Angeles*, 113; and Martin, *Port Angeles*, 165.

[44] James Machenheimer, "I.T.T. Rayonier Mill, Incorporated," in Russell, *Jimmy Come Lately*, 606–7; and Martin, *Port Angeles*, 165.

[45] Helen Neal Radke and Joan Ducceschi, *Olympic Leaders: The Life and Times of the Websters of Port Angeles* (Port Angeles: Western Gull Publishing, 2003), 10.

All three pulp and paper mills in Port Angeles at the beginning of the Great Depression (Crown Zellerbach, Fibreboard, and Rayonier) survived those difficult years and persisted beyond the end of World War II. However, the Filion sawmill became a casualty of the Depression, and the Charles Nelson Company mill (formerly Earles' Mill) burned down in a 1940 fire.[46] As authors Helen Neal Radke and Joan Ducceschi noted, "During all the years, the mill's curl of smoke above the harbor meant paychecks and food on the table for many in Port Angeles. . . . Operating around the clock, Rayonier and the other mills provided a livelihood for many families and were the means by which the area contributed to the nation's productive effort."[47]

Nonetheless, the deadened national economy did affect the town. Crown Zellerbach's customers reduced newsprint orders during the Depression. By mid-1931, hard economic times forced the company to cut its hours of operation, and some mill workers volunteered to take a salary cut in order to remain employed.[48] Dick Goin, who came to the area with his family in 1937, recalled that in the late 1930s, the deer herds of the Olympic Peninsula dwindled because hungry local residents poached wildlife to put food on the table during the Depression.[49]

The Port Angeles pulp and paper industries recovered quickly from the Depression. Beginning in 1939, Fibreboard ran its mill nonstop—twenty-four hours a day, seven days a week—and maintained this schedule until at least 1953, when the *Port Angeles Evening News* reported on Fibreboard's 14 years of continuous operation. The labor requirements of such continuous operation meant that Fibreboard employed three shifts of workers throughout that 14-

[46] Martin, *Port Angeles*, 134; and Filion, "Filion Mill," 602.

[47] Radke and Ducceschi, *Olympic Leaders*, 63.

[48] Aldwell, *Conquering the Last Frontier*, 164; and Martin, *Port Angeles*, 150.

year stretch.[50] Crown Zellerbach also returned to full production during the war years, and continued to expand its operations. In 1940, Crown Zellerbach celebrated the twentieth anniversary of operations at the Washington Pulp mill, which was then producing 350 tons of newsprint a day and "pouring millions of dollars in wages and other expenditures into the town."[51] The following year, the *Port Angeles Evening News* celebrated the mill's continued growth, observing that "twenty-four hours a day, seven days a week, great ribbons of white newsprint paper are rolling out from the speeding machines at Crown Zellerbach mill."[52] By 1949, the company had 620 employees at its Port Angeles mill and a total of more than 800 workers throughout Clallam County on its payroll.[53]

The city's pulp and paper mills, particularly Crown Zellerbach, provided steady employment for hundreds of local men and women, and also became powerful fixtures in the fabric of Port Angeles social life, business connections, and labor organization. From the 1920s on, for example, Crown Zellerbach fielded company baseball, bowling, and other sports teams that competed in city and regional amateur leagues. Many mill employees earned salaries sufficient to buy homes in Port Angeles or in nearby towns, creating a more stable civic life and economic base.[54]

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[49] Richard "Dick" Goin, oral history interview by Paul Sadin, October 21, 2009, Port Angeles, Washington, audio recording and transcript, ONPA, 1–2.

[50] *Port Angeles Evening News*, November 28, 1953, quoted in Johnson, "Historic Assessment of Elwha River Fisheries," 55.

[51] Crown Zellerbach Corporation, *1890–1949: More Power to You . . . Port Angeles and Clallam County*, brochure (Port Angeles: Crown Zellerbach Corporation, [1949]).

[52] "Crown-Z Newsprint Mill Producing 350 Tons Daily."

[53] Crown Zellerbach Corporation, *1890–1949: More Power to You.*

[54] Port Angeles Chamber of Commerce, *A Brief History of Port Angeles, Washington* (Port Angeles: Crown Zellerbach Corporation, 1941, 1960), 26–27.

Figure 73. Crown Zellerbach baseball team photo, n.d. Photograph by Thompson Studio. Courtesy of Clallam County Historical Society. [CrownZbaseball.tif]

In another boost to the local economy, Port Angeles attracted a new lumber products operation in the early 1940s. In 1941, a cooperative of workers and investors created the Peninsula Plywood Company on the Port Angeles Harbor, located between the former Earles' Mill and the Rayonier pulp mill. Peninsula Plywood opened just prior to the attack on Pearl Harbor, and produced plywood made from several different types of native trees. The plant's customers included the U.S. government, Northwest Door Company of Tacoma, and the U.S.

Plywood Corporation.[55] Peninsula Plywood employed fewer people than did Crown Zellerbach or Rayonier, but the company played an important role in the continued growth of Port Angeles. Almost all of the 270 stockholders were local residents, and according to Aldwell, "the entire profits of their plant are expended in our community, of which they are really the backbone."[56] Peninsula Plywood operations also furthered the demand for Olympic Peninsula timber, raising the question as to whether the seemingly limitless supply of peninsula forest resources might have some limits after all.

By the 1940s, the dams on the Elwha River could no longer generate enough electricity to meet the demands of Port Angeles residents and industries. In fact, the Crown Zellerbach Corporation had already constructed a steam-driven power plant to provide supplementary power for their mill.[57] In 1940, Clallam County residents took advantage of state law that allowed them to form a Public Utility District (PUD). Four years later, PUD No. 1 condemned the Puget Sound Power and Light Company's holdings in Clallam County, and purchased their distribution lines and other infrastructure. But the utility district could not keep up with the rapid growth of Port Angeles and other nearby communities, which overtaxed electrical transmission facilities in Clallam County.[58] In 1949, the city, county, and Crown Zellerbach turned to a different source, the Bonneville Power Administration (BPA), to obtain adequate electricity.[59] The BPA generated electricity at a series of hydropower dams on the Columbia River. While Crown Zellerbach

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[55] Oldham, "Port Angeles"; Martin, *Port Angeles*, 181; and Glenn R. Wiggins, "Peninsula Plywood Corporation," in Russell, *Jimmy Come Lately*, 599–600.

[56] T. T. Aldwell to Horace J. Andrews, April 10, 1947, ONPA.

[57] Louter, "Elwha River Hydroelectric System," 34.

[58] Soderberg, *Hydroelectric Power Plants in Washington State, 1890–1938*, E-19.

[59] Soderberg, *Hydroelectric Power Plants in Washington State, 1890–1938*, E-19; Aldwell, *Conquering the Last Frontier*, 139; Crown Zellerbach, *1890–1949: More Power to You*; and Louter, "Elwha River Hydroelectric System," 35.

continued to use Elwha River hydropower to meet about 40 percent of its electrical needs, the BPA grid regulated the power and had the capability to bring in additional power when needed.[60]

PORT ANGELES SALMON DERBY

In the first half of the twentieth century, civic leaders and business boosters in Port Angeles sought additional ways to bring attention and prosperity to their city. Beginning in the late 1920s and early 1930s, town boosters successfully pitched Port Angeles as a new destination for sport fishing and boating. These promotional efforts dovetailed with increased popularity of outdoor recreation, including fishing, during the same period. In 1929, the Chamber of Commerce collaborated with the city boating club and the local branch of the Isaac Walton League, a national fishing- and hunting-oriented conservation organization, to create a boat-mooring and fishing facility on Ediz Hook. In 1933, a group of Port Angeles business and civic leaders formed the Port Angeles Salmon Club, with the prime objective of creating a "salmon derby" to draw more sport fishing enthusiasts and boaters to Port Angeles. [61]

[60] Michalczik interview.

[61] Johnson, "Historic Assessment of Elwha River Fisheries," 102.

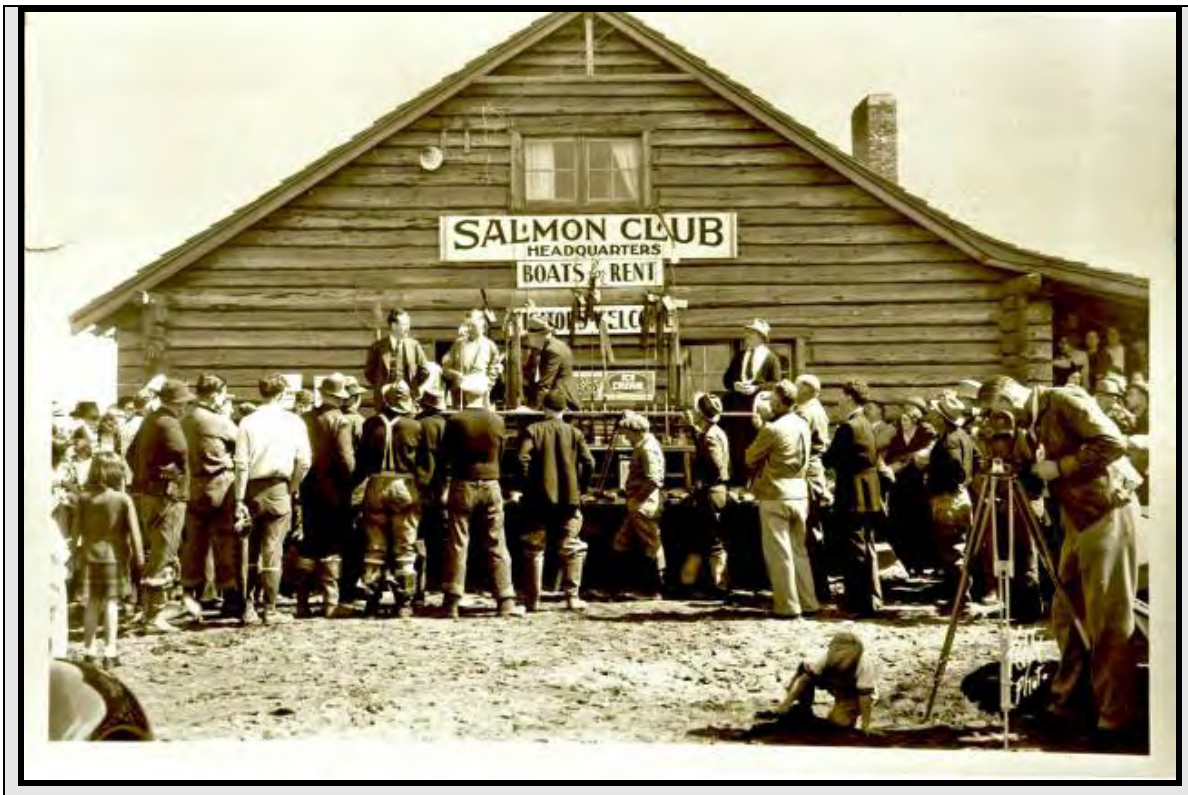

Figure 74. Port Angeles Salmon Club headquarters, 1937. Courtesy of the Bert Kellogg Collection of the North Olympic Library System. [PTAN ACTV – 021.jpg]

Figure 75. Salmon Derby Clubhouse on Ediz Hook, ca. 1940. Courtesy of the Bert Kellogg Collection of the North Olympic Library System. [PTAN ACTV – 024.jpg]

In 1934, the Salmon Derby's first year, 190 people initially entered the contest, and 44 men continued on to the finals. Ultimately, Wilbur Hughto caught a 27 pound, 6 ounce salmon just off Ediz Hook to win the first derby. Two years later, the Salmon Derby included a junior division, and Glen Rudolph and Sally Price won bicycles for their prize salmon, both of which weighed in at just over 11 pounds.[62] The Salmon Derby quickly grew into a local and regional phenomenon, attracting anglers and news coverage from all across the state.

Figure 76. Boats in Port Angeles harbor, n.d. Courtesy of Olympic National Park. [FishingFleet.jpg]

During the 1950s, Port Angeles began to promote itself as a "livable" community, a good place to find work, start a family, and own a home. Promotional literature explained that "aside

[62] Martin, *Port Angeles*, 161–62, 165.

from its attraction as a tourist and vacation area, Port Angeles is a busy, thriving community—a good place to live."[63] As evidence, city leaders touted the National Municipal League's 1954 selection of Port Angeles as an "All-American City." The Municipal League bestowed the award because of the community's "civic pride, the friendly spirit of [the] people," and a knack for "getting things done."[64] All the while, the pulp and paper mills remained at the heart of the community's work life and social spheres, employing approximately 2,300 people during the 1950s.

Since 1914, residents of Port Angeles had enjoyed the benefits hydroelectric power and abundant timber resources brought to their homes and the town's economy. The pulp and paper industry would remain the number one business in Port Angeles and the surrounding area for some time to come. A book on Port Angeles history by John McCallum and Lorraine Wilcox Ross offered a snapshot of industry in 1961. The paper products industry employed 1,200 workers, the plywood industry employed 345 workers, the lumber mills employed 175 workers, and logging employed 1,451 workers. With the population of Port Angeles that year at slightly less than 15,000, more than 20 percent of the town's residents were employed directly in a timber-related industry, with many others at work in affiliated businesses, such as shipping, accounting, and health care. In terms of companies in Port Angeles, the three pulp and paper mills, one plywood mill, and one lumber mill employed over one-half of these workers, while loggers worked in nearby forests. The persistence of the mills in Port Angeles kept the town's economy strong even through the end of the 1960s.

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[63] Port Angeles Chamber of Commerce, *Port Angeles: Vacationland* (Port Angeles: Western Market Development Corporation, 1961), 3.

[64] Chamber of Commerce, *Port Angeles: Vacationland*, 3.

Life on the Elwha River

Six miles west of Port Angeles in the Elwha Valley, the construction of the dams had made an equally significant impact as it had in the city, but with a very different set of consequences. Elwha Dam's biggest impact was its immediate blockage of the upriver spawning grounds of all the river's anadromous fish runs, but the deleterious effects of the dam did not end there. Increased water temperatures, depletion of sand and gravel on the river bottom and nearby shorelines, and dramatic surges and drops in water levels from power-related gate openings all resulted from the first Elwha dam. But the two reservoirs and the access roads built during dam construction created new additional recreational opportunities for local residents and visitors.

Figure 77. Group of children at Elwha Forest Camp, July 1938. U.S. Forest Service photograph. Courtesy of Olympic National Park. [REC079.JPG]

Figure 78. Pioneer picnic, 1962. Courtesy of the Bert Kellogg Collection of the North Olympic Library System. [PTAN ACTV – 031.jpg]

During the interwar and immediate post–World War II era, the Elwha Valley was home to a diverse collection of people that included families living on their forebears' homestead claims, commercial resort managers, U.S. Forest Service (USFS) and National Park Service (NPS) rangers, dam operations staff, and, during the 1930s, urban and local youths laboring with the Civilian Conservation Corps (CCC). Fishing and recreation remained the central attractions of Elwha life. But other activities—soaking at Olympic Hot Springs, boating on Lake Aldwell, summer camping and hiking in the valley, and, after 1931, motoring around the peninsula's loop highway—also drew additional visitors who sought out the Elwha as a vacation destination.[65]

[65] In 1940, the Washington State Highway Department approved the Port Angeles Chamber of Commerce's petition to name the reservoir behind the Elwha Dam "Lake Aldwell." About the same time, the Highway Department consented to the name Lake Mills for the upper reservoir behind Glines Canyon dam. Aldwell, *Conquering the Last Frontier*, 179–80.

The Elwha River had gained renown as a fishing enthusiast's paradise because of a habitat that sustained ten anadromous fish runs as well as abundant populations of several trout species. It also was legendary for the size of the Chinook salmon that swam upriver to spawn. Dick Goin recounted that during one of the family's first years in the valley, a large run of pink salmon came up the river. Bereft of any fishing gear, they simply waded out into the stream to "grab them by the tail and us kids would put them in gunnysacks." Afterward, "we took them home and they canned them in an old water bath canner on a wood stove. And we did this a number of times. That provided our protein source."[66] For a short time, the Elwha Klallam, too, continued to fish unfettered at their favorite spots downstream from the Elwha Dam, before stricter interpretations of state fishing regulations prohibited them from taking even the dead salmon on the riverbank.

[66] Goin interview, 1.

Figure 79. Dick Goin's wife, Marie Goin, holding a 44-pound salmon caught in Freshwater Bay, 1960s. Courtesy of Dick Goin. [Goin7.TIF]

Native anadromous runs that depended most on small tributary streams or upstream lakes for spawning—coho, chum, and sockeye—were soon reduced to remnant individuals. But two species of the Elwha's anadromous fish populations, the Chinook (king) salmon and steelhead, were capable of spawning in the remaining five miles of channel below the Elwha Dam as long as the river bottom contained enough gravel for the fish to dig their nests. In addition, according to Goin, occasional "monster runs" of pink salmon continued to swim up the Elwha, although the

tribe and other valley residents could not count on the run for productive fishing in any given year. Unfortunately, wild salmon and steelhead populations went into steeper declines as the long-term consequences of dam construction began to accrue. Power plant requirements and the fact that these were run-of-the-river dams sometimes prompted dam operators to cut off water flow intermittently and at other times, to discharge surges of water that quickly increased or decreased the depth and flow rate of the stream. As a result, the water level of the river below the dam dropped dramatically, leaving fish stranded in small pools that quickly dried up. An Elwha Klallam tribal member recalled that "they would shut the dam operations down every Sunday and the poor little fishes would just be flipping around below the tunnel. Adeline Smith, Beatrice Charles, Adeline's brother Harold, and Bea's brothers Ernie, Wilbur, and Chuck would scoop them up with a little five pound pail and bring the fry down to where the river had water and spill the little pail into the river. They never understood why they would shut down the water, killing the fish like that."[67] The problem angered Elwha Klallam members and local anglers alike.

In September 1956, local resident W. H. Gwynn sought to impress the severity of the problem upon Milo Bell at the State Department of Fisheries. Gwynn mailed a "sample" of dead fish that he picked up on the banks of the Elwha River after another precipitous rise and fall of the water level. He included a note saying he would supply additional "proof when desired," because "there were lots of dead fish, Mr. Bell." In case the first package did not make the intended visual and olfactory impact, Gwynn concluded his note with the promise, "You will receive these fish from time to time."[68] Bell promptly responded that he had received the fish,

[67] Adeline Smith, interview, March 23, 2010, excerpt provided by Jacilee Wray, ONP.

[68] W. H. Gwynn, Port Angeles, to Milo Bell, Washington State Department of Fisheries, Seattle, September 4, 1956, Folder 23: Dead Fish Correspondence, 1956, Box 1, Johnson Elwha Sources, ONPA.

but added that "unfortunately, they were in such a state of decomposition that our biologists were unable to handle them for complete identification."[69]

Former dam operator Joe Michalczik recalled that the abrupt changes in water levels "had always been kind of a sore subject with a number of people in town," mainly with fishing enthusiasts.[70] Despite frequent protests from the tribe, local fishermen, and the state fish commission, the power company always "had the influence to overcome" the complaints.[71] Michalczik summed up the company's attitude in saying that producing the water draw downs "wasn't a terrible thing to do," because "we weren't the only dams doing it. Every dam was doing that."[72]

In addition to salmon and steelhead, the river provided valley inhabitants with resident trout, crayfish, and lamprey, and along the Strait of Juan de Fuca shoreline near the mouth of the river, abundant shellfish. At the sand beach east of the Elwha River delta, Elwha Klallam tribal members gathered clams, mussels, geoduck, and other intertidal-zone organisms. Goin recalled that even in the late 1930s and early 1940s, the beach produced "clams that wouldn't quit."[73] Prior to dam construction, the free-flowing Elwha had continually transported silt, sand, and gravel, as well as logs and other vegetation downstream and deposited the sediment on the river bottom, in the river delta, and along the shores of the strait near the Elwha's mouth. The dams, however, locked up the sediment directly behind these structures, while the surging river current

[69] Milo Bell, Technical Coordinator to W. H. Gwynn, September 5, 1956, Folder 23, Box 1, Johnson Elwha Sources, ONPA.

[70] Michalczik interview, 2.

[71] Michalczik interview, 2.

[72] Michalczik interview, 2.

[73] Dick Goin, conversation with Paul Sadin, Port Angeles, Washington, October 22, 2009.

below the lower dam scoured sand and gravel off the bottom and out beyond the delta, until there was none left to replenish the delta and its sandy shores.

Elwha Valley Recreation

The Elwha Valley witnessed a recreational boom in the late 1920s and 1930s, due to improved road access, increased popularity of Olympic Peninsula destinations, and expanded commercial facilities to serve tourists. Hunting, fishing, and hiking were the earliest significant recreational pursuits in the valley. From the 1890s through the 1920s, outdoor groups including the Oregon Alpine Club and Mazamas from Portland, Oregon, the Mountaineers of Seattle, and the local Klahhane Club and Olympians made organized hiking trips through the valley and into the high country.[74] Elwha homesteader Grant Humes frequently guided trips for these groups.

ELWHA RANGERS

Beginning in the early 1900s, a new group of inhabitants—Forest Service rangers and their families—began to work and live in the Elwha Valley. For the next four decades, USFS rangers patrolled up and down the valley from their stations at Elwha, Elkhorn, and Olympus. In 1940, NPS rangers took over that task, using the same infrastructure established by forest rangers. During the 1960s, the NPS further expanded and improved the ranger quarters and tourist facilities at those locations.

Forest rangers began patrolling the Elwha Valley shortly after the turn of the century, setting up tent camps as a base of operations. Chris Morgenroth, a German immigrant who joined the Forest Reserve ranger force in 1903, became one of the first district rangers for the area that

[74] Luxenberg and Wray, "Cultural Resources of the Elwha River Valley," 70. Double check page on final

included the Elwha, beginning in 1909. Morgenroth began his career working on building the trail along the south shore of Lake Crescent at a government salary of $60 per month.[75] That summer, he also began patrol work, noting in his diary that he typically patrolled on foot from 15 to 20 miles each day. Aside from watching for any telltale smoke that would indicate a fire, his days also involved "posting fire notices, serving grazing permits, cruising timber, investigating mineral and oil locations and repairing trail."[76]

Figure 80. Families of USFS ranger staff made the Elwha Valley their personal playground. Taken near the Elwha Ranger Station, June 1926. USFS photograph. Courtesy of Olympic National Park. [REC085.JPG]

The USFS erected the first Elwha Ranger Station some time between 1912 and 1915. In approximately 1915, they added the Elkhorn and Olympus patrol cabins farther up the valley.

[75] Chris Morgenroth, *Footprints in the Olympics: an Autobiography* (Fairfield, Wash.: Ye Galleon Press, 1991), 96-97.

[76] Morgenroth, *Footprints in the Olympics*, 97.

The government supplied the cabins with small cook stoves, dining tables, and sleeping accommodations. These remote ranger cabins served as summer residences and workstations for staff in isolated areas, emergency overnight shelters for rangers on winter patrol, and storehouses for fire-fighting and trail maintenance equipment. The trails and cabins were an essential piece of the fire patrol system. Patrol staff stocked each cabin with enough tools, food rations, first-aid kits, and bed rolls to maintain a fire-fighting detail.

Figure 81. Cabin in Elwha Valley that may have served as first Elwha Ranger Station, n.d. Courtesy of Olympic National Park. [3001.JPG]

Forest Service rangers were among the few who traveled the distant reaches of the valley in wintertime, traveling on skis or snowshoes if necessary. When the snow melted in late spring and early summer, patrol rangers tackled a multitude of other tasks. They rode horses or hiked along the muddy trails to restring telephone lines, clear downed trees and debris from the paths, repair footbridges and stone cairns, and post trail signs. They led pack trains loaded with barrels of fingerling trout to restock the lakes and streams. As the Elwha Valley became a more popular recreation destination, rangers spent much of their time dispensing visitor information and responding to occasional emergencies.

When the power company extended the Elwha River Road to the Glines Canyon dam site in 1926, the Elwha Ranger Station was no longer an isolated outpost. Visitors now traveled by auto rather than by horse to the Hot Springs and the station became the jumping off point for recreational fishing, camping, and hiking outings into the backcountry.[77] Ranger staff constructed a residence and utility buildings in the late 1920s to accommodate additional staff and new job activities.

In the early 1930s, there was a significant increase in recreational visits to the Elwha due to the opening of the Olympic Loop Highway, expansion of the Olympic Hot Springs resort, and USFS designation of the Elwha Valley as a recreation destination. In response to rising visitor needs, the USFS built a new Elwha Ranger Station, bunkhouse, and ranger residence in 1932. Forest Service and CCC workers also expanded and improved the facilities at the nearby Elwha and Altair campgrounds. These structures, and several others added shortly thereafter, still stand and are part of a historic district listed on the National Register of Historic Places.[78]

[77] Frederick Walters, "Olympic National Park, Elwha Ranger Station Historic Structures Report," prepared for Olympic National Park, 2008, 21-22. Document provided by Jacilee Wray, ONP.

[78] Walters, "Olympic National Park, Elwha Ranger Station Historic Structures Report," 25-26.

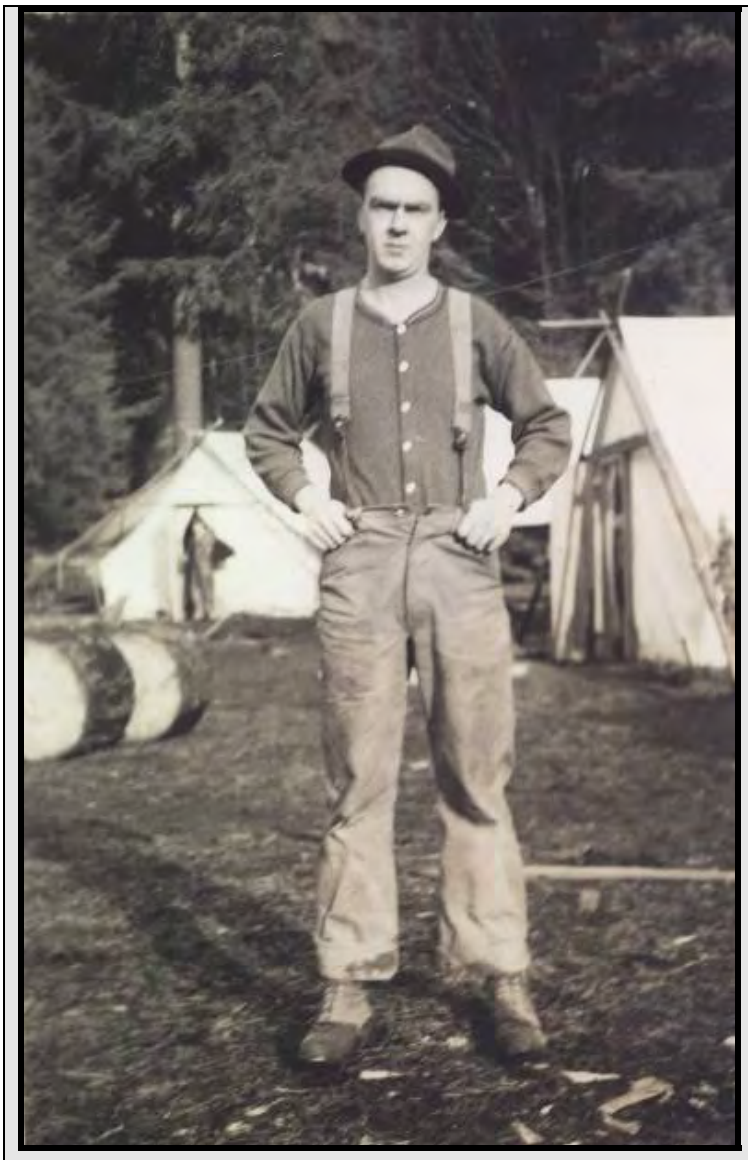


Figure 82. Jim Byrne, ranger in the Olympic National Park on the Elwha in the 1930s and 1940s. Courtesy of Bernie Byrne. [Byrne_JB.jpg]

As the decades passed, visitor's vehicles, interests, and equipment changed significantly, but other activities, such as fishing, remained constant. The same was true for the tasks rangers faced each day. Some former tasks were modernized, deleted, or delegated to other personnel. But other events remained common to every decade, such as this rescue described in an Elwha Ranger Station logbook entry dated July 5, 1963:

> Report was turned in that a man was stranded on a cliff above the Elwha River. . . . The fisherman, Mr. S., was located. . . sitting astride of a small tree on the face of about a 60 degree slope above the Elwha River. A rope was lowered down to Mr. S. from about 60 feet above his position. He tied the rope around his chest . . . and was pulled to safety. Mr. S. seemed more interested in saving his fishing equipment than in cooperating with the personnel pulling him to safety.[79]

Recreational access improved as USFS rangers continued to blaze trails and build campgrounds in the 1920s and 1930s. The older USFS trails built prior to 1915 had been "hastily and often poorly constructed, especially difficult for horses to travel," in part because they were meant to serve primarily as aides to fire fighting.[80] But that pattern changed in the 1920s, when Fred W. Cleator, a USFS Northwest Region forester and planner, began working on a recreation development plan for Olympic National Forest and Mount Olympus National Monument. In 1929, he completed the "Olympic Forest Recreation Plan," also known as the "Cleator Plan," which aimed to increase the forest's recreational opportunities while maintaining its forest-protection mandate.[81] By 1935, the USFS had built more than 900 miles of trails, over 100 campgrounds, and a network of more than 80 wooden trailside shelters for backpackers to utilize.[82] The lean-to shelters offered respite for hikers traveling up the Elwha Valley to popular destinations at High Divide and Elkhorn. Other favored Elwha pursuits included boating in the Lake Mills and Lake Aldwell impoundments and camping at Altair. The USFS also built new

[79] Elwha Ranger Station Log, June 14, 1963 to November 6, 1966, Ranger Log Books, Box 1, accession OLYM-424, ONPA.

[80] David Louter, "The Forest before the Park: The Historic Context of the Trail System of Olympic National Park, 1898–1938," draft manuscript, 32, electronic file provided by Jacilee Wray, ONP.

[81] Louter, "The Forest before the Park," 41.

[82] Louter, "The Forest before the Park," 45.

ranger stations, entrance kiosks, and other administrative structures, including a new Elwha Ranger Station and associated buildings in the 1930s.

ANGLING THE ELWHA

Even while the number of returning salmon gradually decreased after the Elwha Dam was completed, the Elwha River maintained a reputation as a top-flight destination for recreational fishing. Elwha Klallam tribal members, the small number of non-Indian residents of the Elwha Valley, and many residents of Port Angeles continued to visit their favorite fishing holes on the river and tributaries. Fishing enthusiasts of all sorts, from local youths to tourists from distant cities, wanted to try their luck and test their skills on the Elwha River.

Figure 83. Fishing in the Elwha River, July 1936. USFS photograph. Courtesy of Olympic National Park. [REC090.JPG]

In 1934, Mount Olympus National Monument custodian Preston Macy patrolled up the Elwha River to the high country at Hurricane Ridge. Along the way, he found every trail shelter full of

anglers "catching all they wanted to eat." Macy surmised, "There is no question but the Elwha is the best trout stream in the Olympics," but he also thought that the NPS would need to restock the stream in order to keep it that way.[83]

Dick Goin remembered the simplicity and also the challenge of fishing in the Elwha when he was boy, during the late 1930s and early 1940s. First, he and friends went into town to buy their fishing poles:

> We would go down to Wilson's Hardware and they had canes. They were dried. And there were two. There were yellow ones, which were referred to as Calcutta, and there was one that was a darker brown and it was referred to as Cola Cane. . . . they just let you dig through them and you would thrash them around. And the Calcutta was twenty-five cents and the Cola was fifty. And so then you bought [one] . . .
>
> And you could buy a little stamped out reel seat and tape it on and that was your rod. And they were quite good. But then you had, oh my, the line you had . . . they called it raw silk. For the life of me I don't know what it actually was, but I do know this, you had to soak it. If you were going fishing tomorrow you put it in a bucket of water tonight. Because it was very, very stiff. Extremely stiff. . . . We had some kind of an old reel. It was like a big fly reel. Pretty cheap. And you stripped out line and then you [cast] it.[84]

[83] Preston Macy to O. A. Tomlinson, Superintendent, Mount Rainer National Park, August 20, 1934, Folder 4: Administrative History, Olympic National Park, Box 1, Johnson Elwha Sources, ONPA.

[84] Goin interview, 10.

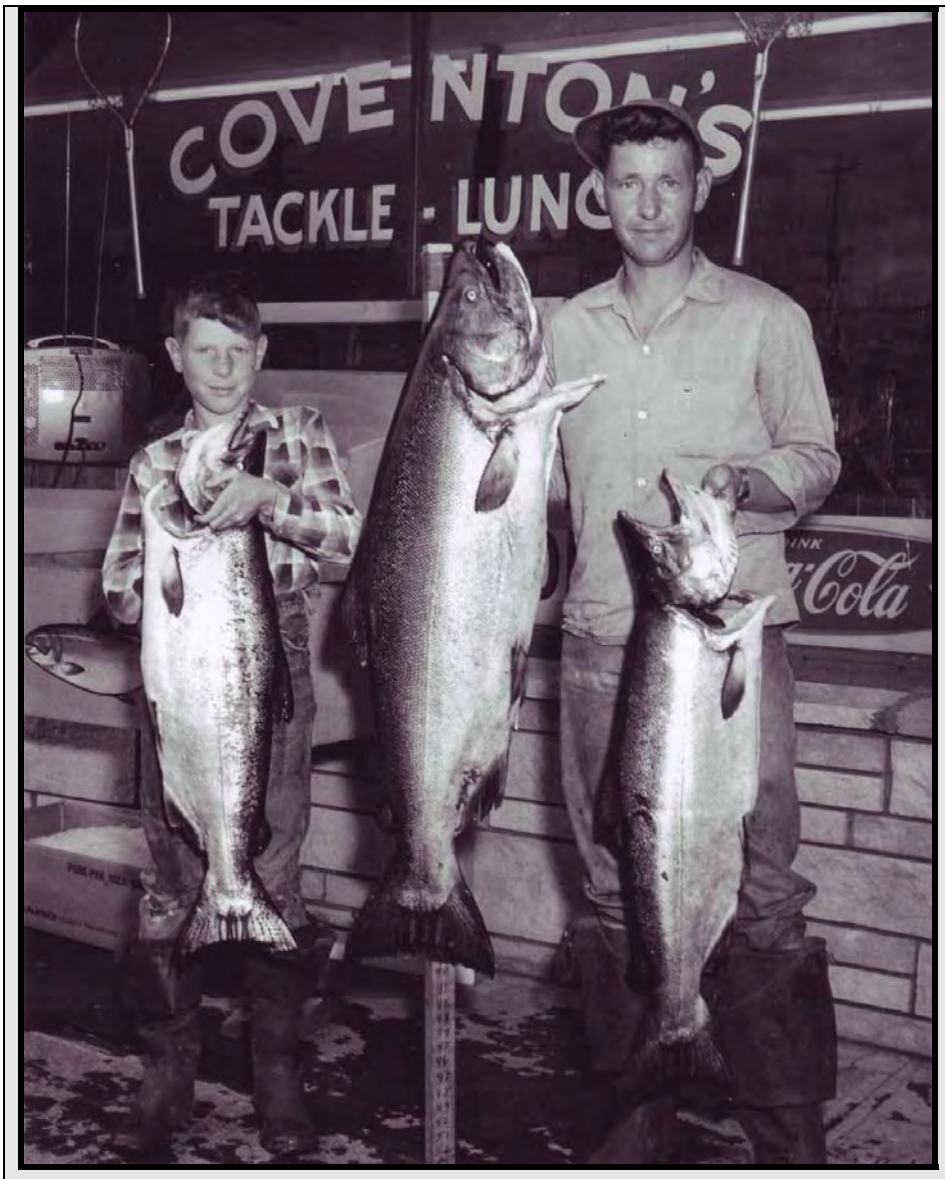


Figure 84. Dick Goin and his son holding 53 lb. fish, and two smaller fish caught in Freshwater Bay, 1963. Courtesy of Dick Goin. [Goin8.TIF]

Other anglers sought to enjoy their sport on the Elwha without having to "rough it." During the 1930s, a group of Seattle business executives and professional men made an annual summer pilgrimage to the Elwha Valley. They shipped their supplies ahead to Waumila Lodge, and then headed upriver from there. They required "an average of fourteen horse-loads to handle our party," which included a hired camp cook. They prided themselves "in having the most complete

camping equipment in the hills. Not only do we include such things as cots, tents, and one thousand and one other items necessary for a rest cure," as well as "boxing gloves and horseshoes to take up the slack periods in the day." But at the real competition of their trips was aimed at who could "snatch the granddaddy rainbow of them all."[85]

In addition to the USFS trail, camp, and administrative improvements, in 1933, the government established a CCC camp in the Elwha Valley. One of President Franklin D. Roosevelt's make-work economic programs of the Depression Era, CCC camps became common sights in western national parks, national forests, and other federal lands after the program commenced in March 1933. The heart of the program was to provide work for the unemployed, who, in turn, labored to build or maintain tourist and recreational facilities. A visitor to "Camp Elwha" remarked that "a remarkable transformation has been achieved . . . a neat and imposing group of a dozen or more buildings is situated in a cleared plot a hundred years or thereabouts south of the ranger station."[86] The camp included five barracks, dining hall, administration building, bathhouse, infirmary, tool shed, and blacksmith shop. Conservation Corps "boys" lived and worked at Camp Elwha from 1933 to 1938, during which time they constructed new roads, trails, and campgrounds, including two community kitchens at Elwha and Altair campgrounds in what was then the national forest.[87] The two kitchens still stand today within Olympic National Park and are listed on the National Register of Historic Places. Camp Elwha's CCC work crews

[85] Ben Bridge, "Seattle Business Men Go Fishing," *Olympic Peninsula Magazine*, March 1936, 13.

[86] "Elwha C.C.C. Force Carries On Regardless of Road Uncertainties and Sob Journalism, Now Housed in Neat, New Camp Buildings," *Port Angeles Evening News*, July 19, 1933.

[87] Evans, "Historic Resource Study: Olympic National Park, Washington," 336–39. The CCC enrolled young men, typically under age 30.

also replaced, repaired, or reconstructed numerous other facilities, roads, and trails throughout the valley.

Figure 85. Barracks at Camp Elwha CCC camp. Courtesy of Bernice Byrne. [Byrne_Elwha CC Camp.jpg]

The construction of the northern leg of the Olympic Highway, including a road along the edge of Lake Crescent to Mora and Forks, enabled motorists to drive to the ocean beaches.

Completed in 1922, the road helped lure more travelers to the Elwha Valley.[88] Completion of the final coastal link in 1931 created a round-the-peninsula loop that became a popular circuit for automobile tourists seeking new motoring adventures. As a promotional brochure declared, "The creation of the Olympic Loop Highway system . . . in conjunction with the ascendancy of the automobile as family transportation brought new residents to the peninsula and established the area as a bona fide tourist destination."[89]

[88] Luxenberg and Wray, "Final Draft—Cultural Resources of the Elwha River Valley: Elwha River Ecosystem Restoration Project Historic Context Statement," 57.

[89] "The Evergreen Playground," Olympic Peninsula Community Museum online exhibit, University of Washington Digital Collections, http://content.lib.washington.edu/cmpweb/exhibits/evergreen/index.html (accessed November 23, 2009).

Figure 86. Clearing for Highway 101, along the southern edge of Lake Crescent. Olympic National Forest photograph. Courtesy of Olympic National Park. [3205_Highway clearing about one-half mile west of Singer's La.jpg]

Figure 87. Elwha Resort Service Station and members of the Ormbreck family, ca. 1929. With the completion of the Olympic Loop Highway, more motorists came to the Olympic Peninsula and services for automobile tourism sprang up. Courtesy of Olympic National Park. [Elwha Resort G.tif]

"The Olympic Peninsula is a land of myriad wonders. Glorious lakes, sapphire-hued, forest edged; towering mountains; streams that teem with gamey fish; winding highways that lead to enchanted spots; delightful resorts lure the outing enthusiast, the fisherman and the vacationist. Here one finds Nature at her best—brilliant, masterful, soul-stirring. A scenic wonderland, unsurpassed in the world, is the Olympic Peninsula."[90]

-"Where-to-Go, Directory of the Pacific Coast," ca. 1930s [brochure]

[90] Olympic Peninsula Community Museum, "Evergreen Playground."

Another boost to tourist travel to the area came when Congress established Olympic National Park (ONP) in 1938. Although Mount Olympus National Monument already protected the alpine heart of the Olympic Mountains, and the Olympic National Forest reserved the forestlands surrounding it, the designation of "national park" status gave the area additional cachet as a tourist destination. The creation of ONP garnered national recognition for the peninsula as a scenic and recreational delight. In that era, the terms *national park* and *loop highway* were magnetic lures for American motorists, who prized collecting the windshield stickers from as many national parks as possible as they undertook multi-park driving tours of the American West. In a 1941 publication, *Romance of the National Parks*, Harlean James put the Olympic Loop Highway and the new national park on the proverbial "map" for motorists around the country. He wrote, "Within this modern highway lies one of the most interesting and alluring wilderness mountain-and-valley areas remaining in this country."[91] James noted that although the journey might begin amid "the mills and smoke and noise of Puget Sound's industrial communities," auto tourists would quickly find themselves in "dark and jungle-like forests [that] cover the lowlands and extend far up the narrow river bottoms."[92]

[91] Harlean James, *Romance of the National Parks* (New York: Macmillan, 1941), chap. 7.

[92] James, *Romance of the National Parks*, chap. 7.

Figure 88. Map of loop highway around the Olympic Peninsula. Courtesy of University of Washington Libraries, Special Collections, PAM0044. [OlympicLoopMap.jpg]

Resort operators in the Elwha Valley opened new lodgings or expanded older facilities to accommodate the growing number of motoring tourists. Olympic Hot Springs, Waumila Resort, Elwha Resort, and "The Place" were some of the most popular tourist facilities, although numerous smaller camps and cabins were also in frequent use. Along with Olympic Hot Springs, one of the early operations catering to travelers was the Way Side Inn. Olive (Laufeld) Johnson recalled that just after the turn of the twentieth century, her father opened the Way Side Inn close

to the Elwha Bridge. It consisted of the post office and a small general store where locals and travelers could purchase the basics: "sugar, flour, coffee, crackers, canned goods, coal oil, matches, lard, rolled oats and vinegar."[93] Like most Elwha homesteaders, John had to take on multiple jobs to make ends meet. In addition to minding the store, he worked as a ranger in Olympic National Forest.

Figure 89. Thelma and Gudrum, pictured here, were nieces of John Ormbreck, owner of the Elwha Resort, 1924. Courtesy of Olympic National Park. [ElwhaResort_OLYM500_girls.TIF]

Joe Stanley opened the Waumila Resort in 1930 as an auto camp with ten "housekeeping cabins," a store, and an open-air community building that also served as a dance pavilion.[94] New owners Art and Rhea Shelleberger took over in 1936 and continued operations into the late 1940s. The Waumila Resort offered an example of the typical pattern of resort development in

[93] Olive Ruth (Laufeld) Johnson, "Incidents on the Elwha," unpublished manuscript, n.d., 5, Homestead Files, ONPA.

[94] Evans, "Historic Resource Study: Olympic National Park, Washington," 289.

the Elwha. Many rustic lodge, campground, and cabin accommodations first opened in response to the auto touring and outdoor recreation booms that arrived with new roads in the 1920s, and then added more facilities, often housekeeping cabins to house the influx of automobile tourists during the 1930s. The Waumila, as with many other small resorts, began a slow decline during the war years and eventually began to decline. Those buildings that were within the park boundaries were eventually removed.

Figure 90. Local residents in a Ford automobile in the Elwha Valley, n.d. Courtesy of the Bert Kellogg Collection of the North Olympic Library System. [ELWA VEHC – 001.jpg]

A new tourist boom arrived soon after World War II, but by then, most American motorists expected more modern facilities. Housekeeping cabins and campgrounds fell out of favor as motor courts, motels, and self-contained recreational vehicles appeared on the scene. Nonetheless, the Elwha Valley remained popular among hikers, hunters, and, in particular, fishing enthusiasts. The NPS began to improve facilities for these groups in the 1940s, adding

and expanding campgrounds, improving trails and trail access, and creating new interpretive opportunities, including visitor centers.

Figure 91. Elwha River sign, 1950. Courtesy of Olympic National Park. [OLYM344783095.JPG]

OLYMPIC HOT SPRINGS

Figure 92. Advertisement for Olympic Hot Springs in the upper Elwha Valley. Postcard by Torke's Studio. Courtesy of Olympic National Park. [CAH002001.JPG]

Between 1909 and 1926, Olympic Hot Springs had served as a simple but enjoyable leisure resort for the local Elwha community and for Port Angeles residents willing to make the journey by foot or on horseback over 11 miles of rough trail. The resort proved less popular than the larger, easier-to-reach Sol Duc Hot Springs after the latter reopened in 1921 and the highway around Lake Crescent was completed in 1922. But Olympic Hot Springs regained some of its popularity when the road built to the Glines Canyon Dam site shortened the trip considerably. After 1927, tourists could drive along the shore of Lake Mills to within a short distance of the hot springs. Although the new owners, the Schoeffels (descended from one of the original founders, Billy Everett), relied almost entirely on cutting and milling their own construction materials, they made substantial improvements to the facilities, especially to lodgings, between

1910 and 1930. The resort owners improved the accommodations in 1917, adding a lodge and bathhouse and constructing a wooden swimming pool. In 1919, they replaced the tent-like cabins with more traditional wood-frame resort cabins.

Figure 93. Olympic Hot Springs lodge. Courtesy of the Bert Kellogg Collection of the North Olympic Library System. [ELWA BLDX – 001]

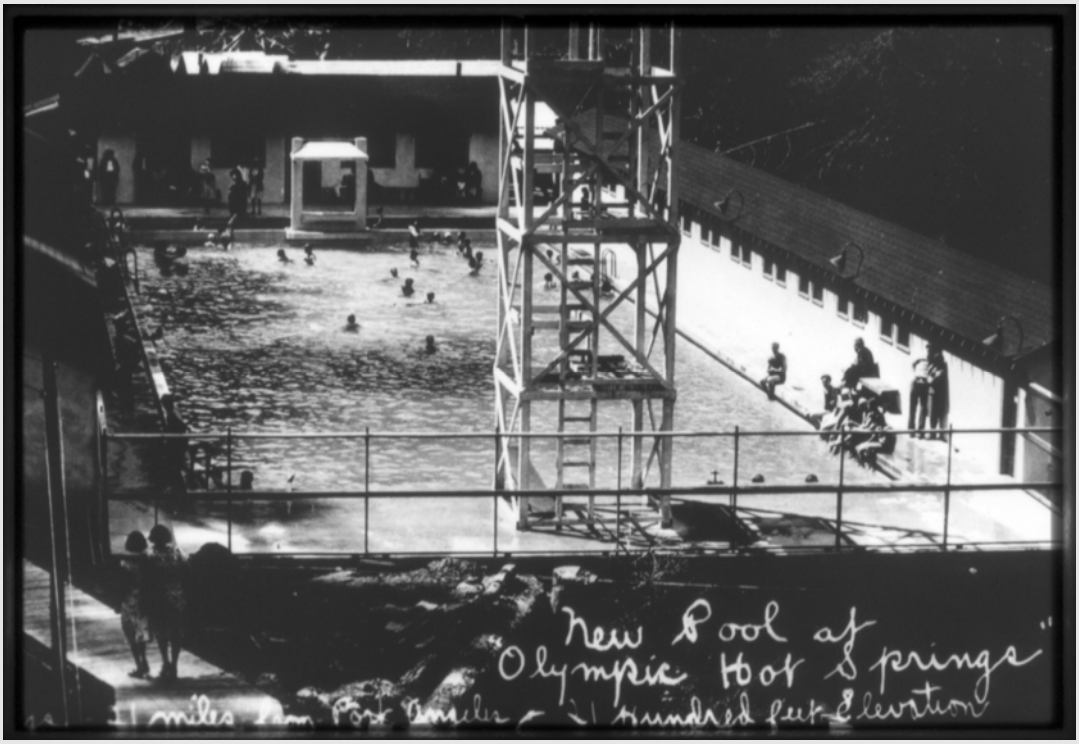


Figure 94. Olympic Hot Springs swimming pool. Courtesy of the Bert Kellogg Collection of the North Olympic Library System. [ELWA BLDX – 002]

The completion of a joint USFS/Clallam County road construction project in 1929 finally gave motorists access to the resort: the Forest Service also built a new auto campground close to the Springs.[95] By the next year, Olympic Hot Springs had a new bathhouse, a hotel with 12 bedrooms, and a new pool. The owners managed to stay in business during the Depression, but two events in 1940 dealt blows to the resort's future prospects. The hotel burned down that year (although it was quickly rebuilt) and Congress made the hot springs area part of Olympic National Park.

[95] Morgenroth, Footprints in the Olympics, 111.

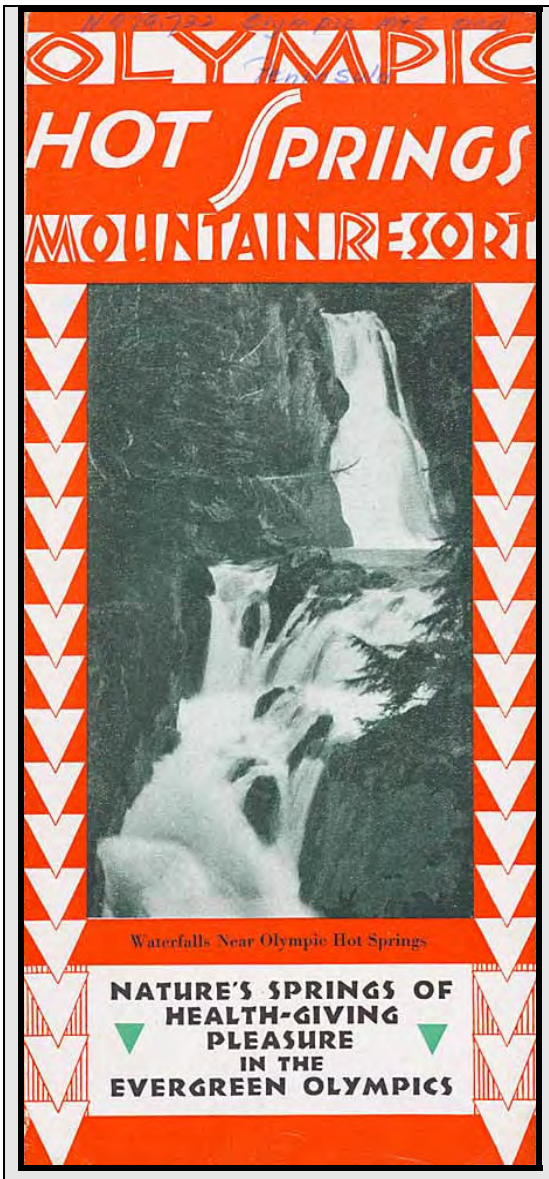


Figure 95. Olympic Hot Springs brochure cover. Courtesy of University of Washington Libraries, Special Collections, PAM0042. [HotSprings.jpg]

In 1950, Emily Lewis, who had first visited the resort as a child years before, went to work at the Olympic Hot Springs and recalled some of the changes:

> There was a long building. It was the lodge. The downstairs was where you registered for your stay and use of the pool, or just lounged around and relaxed. The whole front was big windows that looked out on the beautiful concrete-lined pool. Upstairs were the dining room, kitchen and so forth. On each side of the pool were the dressing rooms with shower facilities. . . . The road approached the hot springs along the west bank of Boulder Creek and you could look across the

> creek to the resort. Then the road crossed the creek on a bridge and started back along the opposite bank. The first five cabins you came to were real nice little houses—just like living down home, but they cost more to rent. Up on the hillside were about twenty single cabins.[96]

During the 1950s and 1960s, the resort facilities began to deteriorate noticeably, reducing the resort's appeal. When modern health standards required the resort to chlorinate the pools, it reduced some of the charm of the springs, and contributed further to the drop in tourist visits. The resort remained in the park until 1966, when it had degenerated to the point where it was closed to the public. The buildings and other associated structures were removed in 1972.

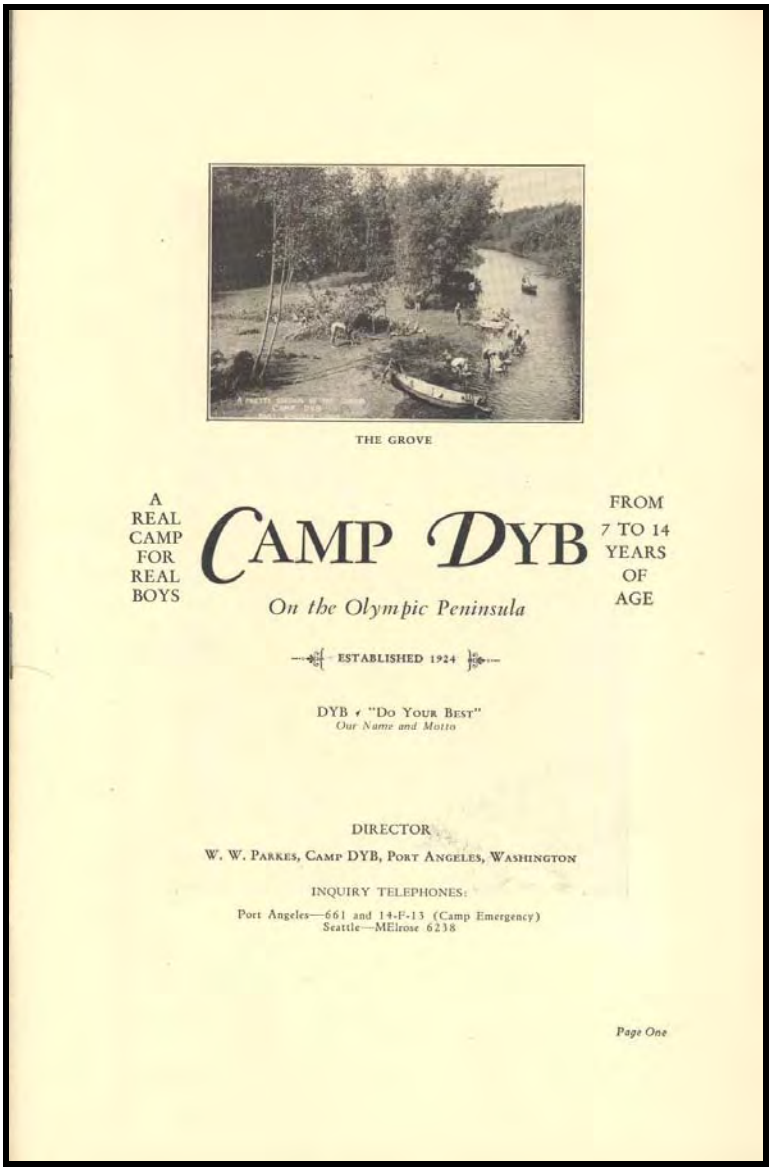
Located ten miles downstream from Olympic Hot Springs at the mouth of the Elwha River was a very different sort of recreational destination, a summer camp for boys called Camp DYB, which was in operation during the 1920s and early 1930s. Camp DYB, which stood for "Do Your Best," was created in the mold of the Boy Scouts, YMCA, and other youth organizations that sought to build stronger moral, physical, and spiritual habits in American youth, and thus improve the health of the nation. According to the camp's promotional literature, "Summer camps fill a distinct need in the life of the city boy, providing for physical, mental and moral training during the long vacation time—so often a problem to the thoughtful parent."[97] The camp aimed to return boys to their parents "with useful knowledge, learned in the woods and in camp; a boy who is a better sport, and who has gained a new appreciation of the natural environment in which he lives."[98] In order to achieve these goals, Camp DYB featured outdoor activities such as

[96] Emily Lewis Miles, *The Evolution of Emily: Frontier Child to Modern Woman* (Forks, Wash.: Olympic Graphic Arts, Inc., 1981), 77–78.

[97] "Camp DYB: A Summer Camp for Boys," brochure, n.d., Folder: Clallam Projects 1, 2, 3 (Tulalip) 2 of 2, 3, Box 217, Jurisdiction Files of the Realty Branch and Predecessors, 1945–61, Records of the Bureau of Indian Affairs (BIA), Portland Area Office (hereafter Jurisdiction Files of the Realty Branch and Predecessors, PAO), RG 75, National Archives and Records Administration–Pacific West Region, Seattle, Washington (hereafter NARA).

[98] "Camp DYB: A Summer Camp for Boys," 3.

canoeing, swimming, hiking, team sports, and an overnight backpack trip to Mount Angeles. There were also leisure trips to Lake Crescent, Agate Beach, and Olympic Hot Springs.[99] The camp's activities consisted of the Elwha Valley's most popular recreational pursuits, but couched those endeavors in moral and patriotic terms.



THE GROVE

A REAL CAMP FOR REAL BOYS

CAMP DYB

FROM 7 TO 14 YEARS OF AGE

On the Olympic Peninsula

ESTABLISHED 1924

DYB • "DO YOUR BEST"
Our Name and Motto

DIRECTOR
W. W. PARKES, CAMP DYB, PORT ANGELES, WASHINGTON

INQUIRY TELEPHONES:
Port Angeles—661 and 14-F-13 (Camp Emergency)
Seattle—MElrose 6238

Page One

Figure 96. Camp DYB, "A Real Camp for Real Boys," pamphlet cover. Courtesy of National Archives and Records Administration–Pacific Alaska Region, Seattle, Wash. [RG 75, Camp DYB, image 1.jpg]

[99] "Camp DYB: A Summer Camp for Boys," 7–11.

Boys at Camp DYB tackled their "training" on a site formed by Elwha River sediment, land that once stood at the center of Elwha Klallam social and subsistence activity. In the late 1930s that land was incorporated within the Lower Elwha Klallam Reservation.[100] But as the boys played and relaxed at the camp during the 1920s and 1930s, their easygoing experiences on the Elwha could not have contrasted more with the lives that the remaining Elwha Klallam members led on the very same shore. By the 1930s, the tribe had reached one of the lowest points of its long history on the peninsula, seemingly ready to disappear from view along with the salmon runs they so depended upon. At a time when DYB boys left the camp supposedly "abounding in the joy of life . . . with rugged strength stored from the healthful activities of the summer," roughly 175 Elwha Klallam members struggled to eke out a living from small vegetable gardens, "beachcombing," and the diminishing salmon populations.[101] As they found themselves squeezed out of or forcibly evicted from their village sites and homesteads, they looked to the Elwha River to continue to sustain them.

[100] "Camp DYB: A Summer Camp for Boys," 3.

[101] Quotation from "Camp DYB: A Summer Camp for Boys," 3; and George Wren, Assistant Land Negotiator, Office of Indian Affairs, "Statement Concerning the Project," Clallam [*sic*] Project–Tulalip Indian Agency, December 6, 1935, Folder: Clallam Projects 1, 2, 3 (Tulalip) 1 of 2, Box 217, Jurisdiction Files of the Realty Branch and Predecessors, PAO, NARA. "Clallam Projects" were the names given to the government's land purchase program in the Lower Elwha Valley.

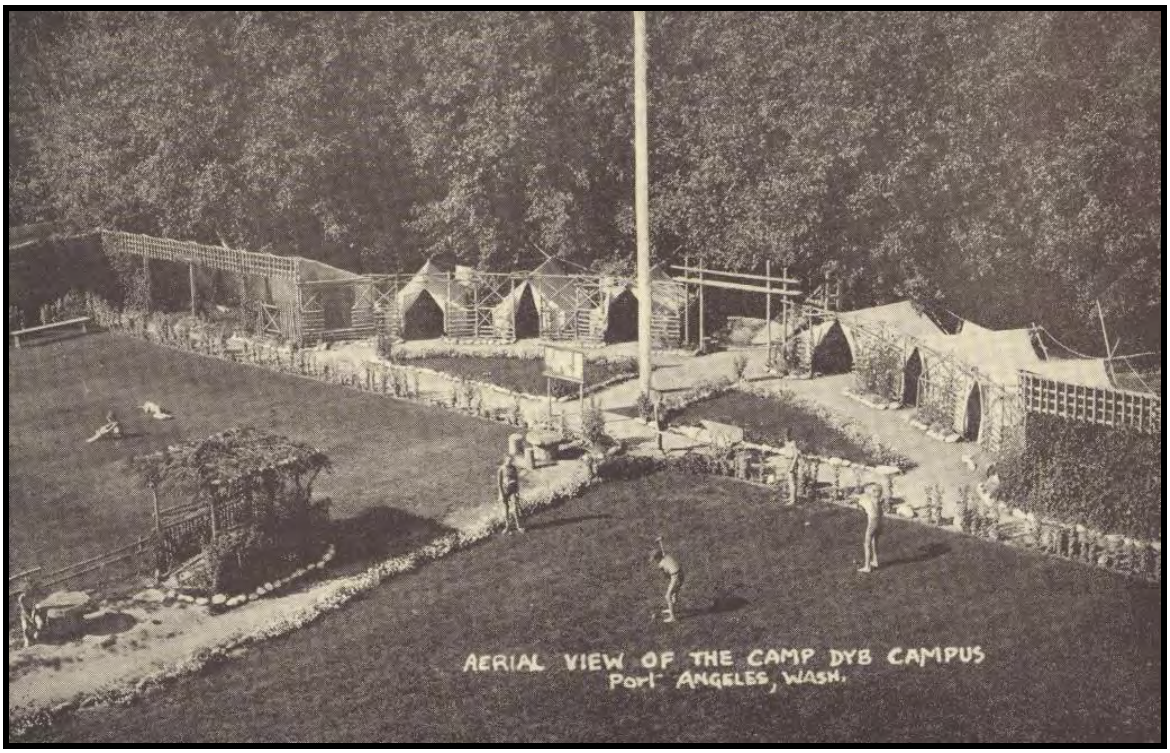


Figure 97. Aerial view of Camp DYB campus, ca. 1924. Courtesy of National Archives and Records Administration, Pacific-Alaska Regional Branch, Seattle, Wash. [RG 75, Camp DYB, image 2-rotatedandcropped.jpg]

The Power of Place: The Elwha River and the Elwha Klallam

In the mid-1930s, government officials at the Bureau of Indian Affairs (BIA) Tulalip Agency took steps to restore some of the former Elwha Klallam lands and to improve the living conditions of tribal members, including many that had been forced out of their dwellings on Ediz Hook near their former village of Tse-whit-zen. The families in these "shacks," as many observers and the newspapers described them, which sat on government land, had managed to hang onto homes along a narrow stretch of sand exposed to the waves and wind of Pacific storms that threatened to push their dwellings into the harbor.

In September 1929, the federal government attempted to force the Elwha tribal members out of their homes on Ediz Hook by threatening to burn all of their cabins on government property. Department of the Navy officials gave Lighthouse Keeper Albert Beyers the order to remove all

of unauthorized buildings within the naval reservation, but did not explain the reasons for the action. Beyers posted eviction notices on the 36 structures then standing, and planned to "torch" them when the fire hazard level was low.[102] A local newspaper reporter interviewed Harry Sampson, an Elwha Klallam who had lived in his shack on Ediz Hook for thirty years. Another Elwha Klallam, Port Angeles Bob, had lived in the same home before that. Sampson told the reporter, "I don't know where we'll go or what we'll do."[103] However, in 1935, a federal land agent observed nine Elwha Klallam families (a total of 22 people) were still living in "dilapidated make-shift shacks" on Ediz Hook.[104] The difficult living conditions prompted tribal members such as Sam Ulmer, and officials in the Bureau of Indian Affairs (BIA), to seek a solution.

[102] "Shacks Doomed: Torch Will Be Applied to 36 Small Cabins," *Daily News* (Port Angeles), September 17, 1929.

[103] "Shacks Doomed."

[104] Wren, "Statement Concerning the Project," Clallam Project [No. 1], 2

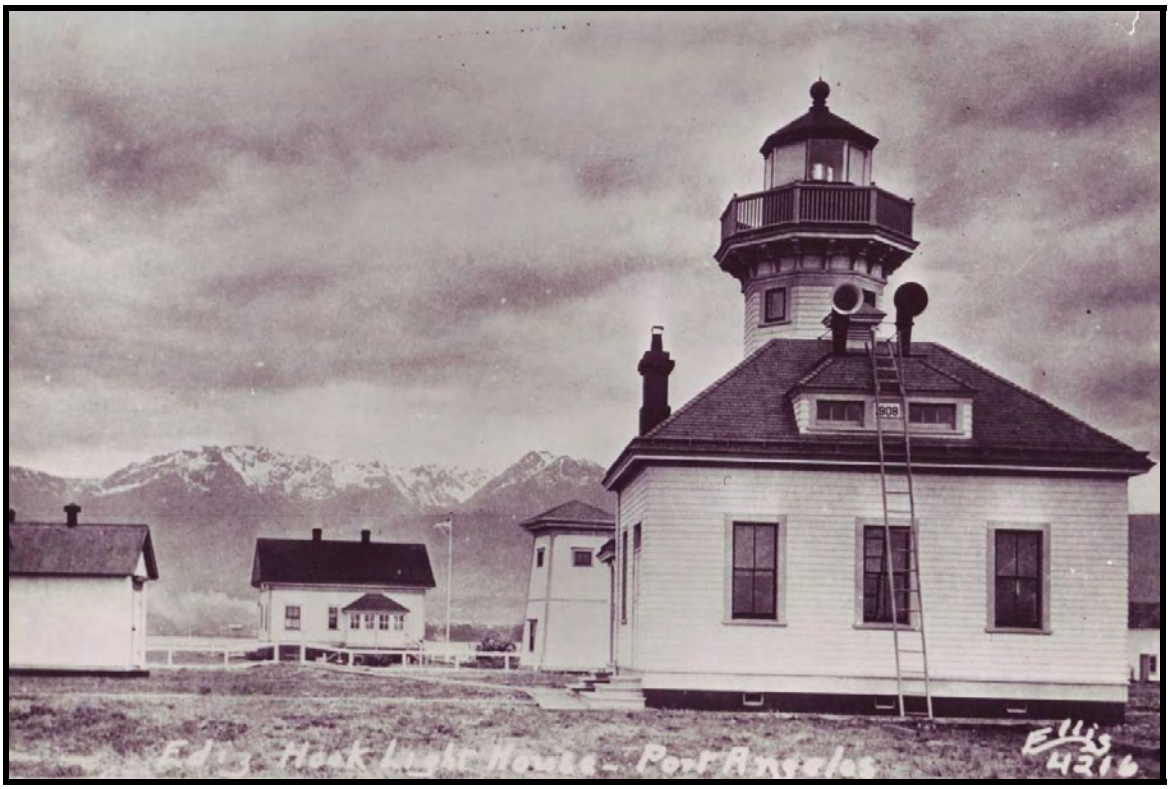


Figure 98. Lighthouse on Ediz Hook. Photograph by Clifford B. Ellis. Courtesy of Olympic National Park. [PA_EdizHookLight.TIF]

Observing in the early 1930s what he called the "poverty and destitution of Clallam [*sic*] Indians for whom no reservation was ever set apart," O. C. Upchurch, superintendent of the BIA's Tulalip Indian Agency, which had nominal oversight of the Elwha Klallam from the 1920s through the 1940s, recommended that the government buy farmland near the mouth of the Elwha River for some of the displaced Elwha Klallam families to settle, under the terms of the Indian Reorganization Act of 1934.[105] Between 1936 and 1939, BIA land agents purchased small parcels of private farmland and cutover forest on either side of the Elwha River, eventually accumulating a total of 353 acres to restore to the tribe. Fittingly, the acquired parcels included the site of a former Klallam village. George Wren, the government land agent in charge of the

land purchases, recorded the presence of an "Indian burial ground with approximately fifty graves."[106]

Another farm parcel was the former location of Camp DYB. The camp's cabins, lookout tower, and common building remained standing and in good order, leading the land agent to suggest that they were "an excellent set up for a community meeting site" for the tribe.[107] He also noted that the slough that ran along one edge of the property was a salmon spawning area.

Once the government completed the purchases, a committee of Elwha Klallam tribal members helped select fourteen families to move onto the acquired acreage. The families organized themselves as the Elwha Valley Indian Community Association.[108] The association was able to apply for and receive federal government loans to purchase farm equipment, seeds, and livestock. BIA agents made similar purchases of land for the Port Gamble S'Klallam Tribe across Hood Canal on the Kitsap Peninsula. Congress established the Port Gamble Indian Reservation in 1938. Congress, however, did not declare the Elwha Klallam land a federal reservation, in part because of local fears that "the status of fishing in the Elwha River would be

[105] O. C. Upchurch, Superintendent, Tulalip Indian Agency, to T. W. Wheat, Land Field Agent, Sacramento Indian Agency, December 16, 1935, Folder: Clallam Projects 1, 2, 3 (Tulalip) 1 of 2, Box 217, Jurisdiction Files of the Realty Branch and Predecessors, PAO, NARA. Note the standard BIA spelling of "Clallam" at the time.

[106] George Wren, Assistant Land Negotiator, Office of Indian Affairs, "Statement Concerning the Project," Clallam Project Unit No. 2, April 22, 1936, Folder: Clallam Projects 1, 2, 3 (Tulalip) 1 of 2, Box 217, Jurisdiction Files of the Realty Branch and Predecessors, PAO, NARA. Note that this 1936 "Statement" is a different document than the one Wren submitted in 1935.

[107] Department of the Interior, Office of Indian Affairs, "Offer to Sell Lands to the United States," Clallam Project Unit No. 2, Tract No. 10, April 22, 1936, Folder: Clallam Projects 1, 2, 3 (Tulalip) 1 of 2, Box 217, Jurisdiction Files of the Realty Branch and Predecessors, PAO, NARA.

[108] Homer Morrison, "A Clallam Community: A Study of the Rehabilitation Program of the Clallam Indians in the Valley of the Lower Elwha in Clallam County, Washington," June 6, 1939, 5-8, Folder 12: Clallam Rehabilitation Program, 1939, Box 1, Johnson Elwha Sources, ONPA, 5, 18–19.

changed."[109] Land agent Wren wrote that the other landowners in the valley had opposed the purchases because the Elwha Klallam were viewed as "unwelcome neighbors."[110]

Once settled on their restored tribal lands, the Elwha Klallam utilized many of the same fish-catching techniques that their ancestors had honed to near perfection. At high tide during the spring Chinook run, Indians "gaffed" salmon at a ford roughly a half-mile upstream from the river mouth. Tribal fishers tied a gaff hook to a "long thin fir pole . . . . They would just let the pole swim down with the current and if they felt something they would yank."[111] Tribal members and families felt a strong sense of individual ownership for their favorite fishing holes along the river, and gave a name to each of them.

But as the diminishing habitat depleted the number of wild Elwha salmon, in the case of some species to virtual extinction, social and political pressures began to squeeze the tribe out of their traditional fishing grounds and practices, as more groups—sport and commercial fishermen, salmon derby promoters, and recreational anglers—competed for a dwindling resource. Elwha Klallam fishers also had to outfox fish and game agents simply to set their lines or nets. Earlier U.S. Supreme Court decisions had affirmed the fishing treaty rights of all Indian tribes in the state of Washington. But in 1916, the Washington State Supreme Court ruled that tribes did not have the right to fish in their "usual and accustomed places."[112] From that time on, state Fish and Game officials aggressively prohibited any off-reservation fishing without a state license. Of course, this outcome was particularly debilitating for the Elwha Klallam because they had no

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[109] Wren, "Statement Concerning the Project," Clallam Project Unit No. 2, 2; and Johnson, "Historic Assessment of Elwha River Fisheries," 198.

[110] Quote from Wren, "Statement Concerning the Project," 2.

[111] Goin interview, 2.

[112] Cesar Marino, "History of Western Washington since 1846," in *Handbook of North American Indians*, ed. William Sturtevant, vol. 7, *Northwest Coast*, ed. Wayne Suttles (Washington D.C.: Smithsonian Institution, 1990), 175–76.

reservation. When they were caught, some individual tribal members were beaten up, others were regularly arrested.

In order to avoid detection and arrest, tribal members turned to fishing at night or in difficult-to-access locations. Robert Elofson remembered that as a youth, when he and his cousins went fishing, they would climb down the steep bluffs to the river, some 200 to 300 feet below his house, because it was a location "where nobody else could get to [us]."[113] He also recalled that when Elwha Klallam Indians went gaffing salmon in a tributary of the Elwha, they kept "a lookout for game wardens" because many of the fishermen were afraid of being arrested and thrown in jail.[114] Dick Goin, too, recalled how his father sometimes joined tribal members fishing by moonlight for king salmon near the mouth of the river, likewise trying to avoid detection.

In December 1952, a local Fish and Game agent detained a group of Elwha Klallam he found gaffing salmon. To plead their case, they traveled to Seattle and petitioned State Fish Commission director Robert Schoettler for the right to catch and smoke Elwha "dog" (chum) salmon for their personal use, a practice they had engaged in for decades. Schoettler refused, contending that the Elwha River "does not border any Indian reservation land grant or allotment."[115] Instead of complying with the petitioners' request, he told the area inspector to keep his department "apprised of any irregularities with respect to Indian fishing . . . in order that

[113] Robert Elofson, oral history interview by Paul Sadin, October 20, 2009, Lower Elwha Klallam Reservation, Port Angeles, Washington, audio recording and transcript, ONPA, 1.

[114] R. Elofson interview, 1.

[115] Robert Schoettler to Lt. Charles Hall, December 4, 1952, Unnamed Folder, Box 1, Johnson Elwha Sources, ONPA.

we have the opportunity to review the possible charges under which such an arrest will be made."[116]

Similar political and legal battles raged between tribes and state agents throughout Western Washington in the late 1950s and 1960s that featured overt protests such as "fish-ins," more arrests, and additional lawsuits filed against the state. The Elwha Klallam and most other Western Washington tribes struggled to find power and strength in traditional sources, including the land, rivers, and coastal waters that had always sustained them.[117] In the 1960s, the tribes found a new source of power—political action—that sustained them in their efforts to improve their lives and communities. In 1968, the Lower Elwha Klallam Tribe gained federal recognition as a tribal entity, and a reservation encompassing the tribal land purchased thirty years earlier.

Thus, as the 1960s came to a close, the Lower Elwha Klallam Tribe had made progress in regaining some of its lost political power and legal rights. In the decade that followed, a new political and economic landscape would emerge on the Olympic Peninsula. As the regional economy began to falter in response to nationwide changes in the timber industry, the continued long dominance of the hydropower and timber industries was no longer assured. At the same time, the American environmental movement increased public awareness regarding threats to the local and global environment, and began to raise questions about the value of dams that interfered with natural systems. These circumstances began to alter the balance of power regarding the dams on the Elwha River in the decades that followed.

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[116] Schoettler to Hall.

[117] For more information on the tribal fishing rights battles of the 1950s through 1970s, see Charles Wilkinson, *Messages from Frank's Landing: A Story of Salmon, Treaties, and the Indian Way* (Seattle: University of Washington Press, 2000); Fay Cohen, *Treaties on Trial: Continuing Controversy over Northwest Indian Fishing Rights* (Seattle: University of Washington Press, 1986); and Mary Isely et al., *Uncommon Controversy: Fishing Rights of the Muckleshoot, Puyallup, and Nisqually Indians* (Seattle: American Friends Service Committee, 1967).

Chapter 4
Power Politics:
The Environmental Era Arrives and Challenges to the Dams Begin, 1968–2008

It was a bit of a shock when I got the telephone call from the two representatives telling me . . . that the Congress of the United States was going to draft legislation to purchase the projects and remove them from the river.

Orville Campbell, former facility manager, Elwha dams

For a half-century, Crown Zellerbach ran the Elwha dams and power plants with almost complete impunity when it came to meeting their power requirements. During that period, the Port Angeles business community, labor organizations, and local officials gave their full support to the company's operations, which supplied wood products for the nation and much-needed jobs, trade, and economic recognition for the city. As former Crown Zellerbach hydropower manager Orville Campbell said, "The company had used the dams for some 50 years . . . there was no reason to believe FERC [Federal Energy Regulation Commission] wouldn't give us another 50."[1] Outright removal of the dams seemed an even more outlandish and unlikely scenario. As Campbell later admitted, "In the beginning and through much of the [licensing] process, I couldn't even imagine that the movement [for removal] would be successful."[2] Similarly, when asked if tribal members discussed dam removal as a possibility when they first decided to challenge the FERC licensing in the 1970s, tribal member Robert Elofson said they did, but few took it seriously.[3] Yet when Crown Zellerbach applied to FERC to license the Elwha

[1] Adam Burke, "River of Dreams," *High County News* (September 24, 2001), on-line version, http://www.hcn.org/issues/211/10739 (accessed November 30, 2009).

[2] Orville Campbell, quoted in Adam Burke, "Hydro[power] Had No Friends," *High County News*, September 24, 2001, http://www.hcn.org/issues/211/10751 (accessed November 30, 2009).

[3] R. Elofson interview, 4.

Dam in 1968 and to relicense Glines Canyon Dam in 1973, they found that the political and economic atmosphere had changed dramatically.

In the first half of the twentieth century, hydroelectric dams were the icon of American technological expertise. By the 1970s, however, environmental activists made dams the symbols of the country's ecological degradation, primarily because the structures altered river ecosystems and the reservoirs inundated large areas valued for aesthetic and recreational pursuits. Campbell could see, "in the late 70s and through the 80s that hydropower in the United States had a very bad image."[4] Perceptions of anadromous fish species also changed. The federal government began to treat salmon and steelhead as species valued for their central place in marine, riparian, and terrestrial ecosystems and in the cultural lives of Pacific Northwest Indian tribes, who had obtained both physical and spiritual sustenance from the salmon for thousands of years.

Figure 99. Aerial view of Port Angeles, looking south, 1960. Courtesy of the Bert Kellogg Collection of the North Olympic Library System. [PTAN VIEW – 012.jpg]

[4] Orville Campbell, interview by Jacilee Wray, April 6, 2010, transcript, 9.

Meanwhile, Crown Zellerbach could see that hard times lay ahead for the Pacific Northwest timber and wood products industries. Dwindling stands of old-growth trees, more stringent environmental regulations, and competition from more efficient mills in the southeastern United States threatened the future of the region's timber companies and the livelihood of Olympic Peninsula loggers. These factors, coupled with rising freight costs, decreased the profitability of the pulp and paper industry. In Port Angeles, the Fibreboard Company mill was the first casualty of the timber industry slump, closing on the last day of 1970.[5]

The poor prospects of the Pacific Northwest timber and pulp industries eventually prompted Crown Zellerbach to sell the Port Angeles mill and the two Elwha dams to the James River Corporation in 1985. Three years later, in 1988, Daishowa America purchased the Port Angeles mill from James River, after James River discovered it was not going to profit from a mill that produced paper for city directories. However, James River maintained its ownership of the dams because, by then, the company had become embroiled in the dam relicensing process. While relicensing and dam removal issues were being debated, Daishowa modernized operations at the mill, keeping the Port Angeles plant competitive into the twenty-first century.[6]

[5] Martin, *Port Angeles*, 133; and Oldham, "Port Angeles."

[6] Nippon Paper Industries USA Company, the current owner of the mill, merged with Daishowa America in 2003. "Port Angeles Paper Mill at 90: Its Legacy Mirrors Ups, Downs, of Community," *Peninsula Daily News*, December 12, 2010.

Figure 100. Nippon Paper (former Crown Zellerbach/James River) mill in Port Angeles, n.d. Courtesy of Olympic National Park. [10Elwha_Dori.34 of – 32.jpg]

Crown Zellerbach, and subsequently, James River, ran into unexpected hurdles when they applied to license the Elwha Dam and relicense the Glines Canyon Dam. The companies applied for FERC licensing in the midst of what became known as the "environmental era" of the late 1960s and 1970s. During that time, Congress introduced sweeping new federal laws aimed at protecting and restoring the health of America's river, lake, forest, and mountain ecosystems. One of the most significant pieces of legislation was the National Environmental Policy Act of 1969 (NEPA), which required federal government agencies to assess the potential damage any project might have on natural and cultural resources. The new law also required federal agencies to involve the public in the decision-making process. These events bore important ramifications for the future of the Elwha River dams.

PORT ANGELES, 1960s

Chamber of Commerce publications in the early 1960s promoted the "Vacationland" theme, and began to advertise recreation as the city's biggest attraction. Promotional brochures still lauded the industrial opportunities in Port Angeles, but chamber of commerce members pushed that topic to the back pages. The trend continued into the 1970s and beyond, as city leaders looked to recreational tourism to replace the local jobs and boost the regional economy when the mills began to close.

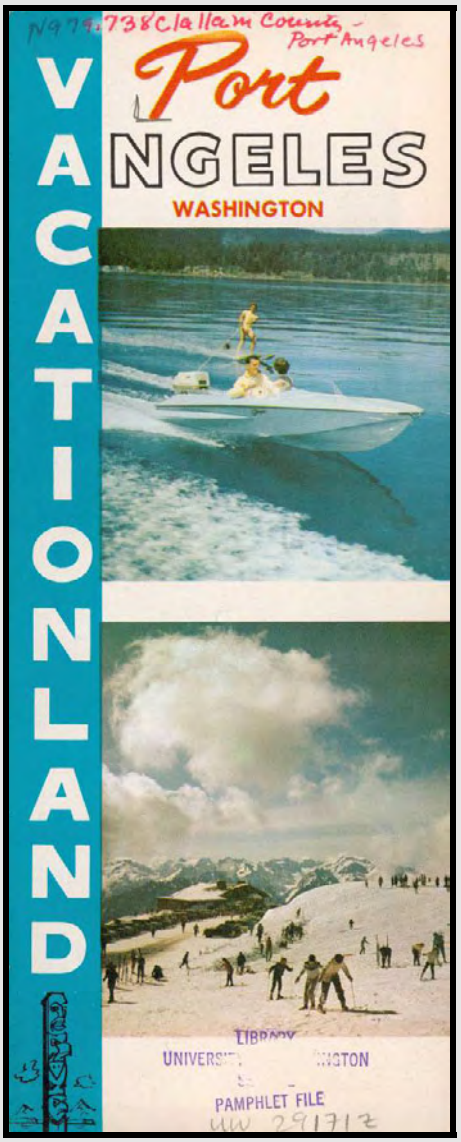

Figure 101. Port Angeles Chamber of Commerce promotional brochure, ca. 1960. Courtesy of University of Washington Libraries, Special Collections, UW29171. [UW29171z.tif]

Promotional pitch from the 1961 *Port Angeles: Vacationland:*

> Port Angeles today is a proud city blessed with an abundance of natural beauty. With a turn of the head, one looks from snow-capped mountains to saltwater beaches. Port Angeles is not only a city of breathtaking beauty, but is strategically located at the heart of one of the country's finest vacation areas—aptly described by many as "America's Last Frontier." Looking southward, the towering rugged Olympic Mountains overlook the city. These mountains, and the 1,400 square miles of area which comprise the Olympic National Park, furnish vacationers with a multitude of recreation activities to choose from. The magnificent rain forest, wildlife, glaciers, lakes streams, and hundreds of miles of trails maintained by the National Park Service are yours to use and enjoy. To the north the Strait of Juan de Fuca serves as a highway of water running relentlessly past Port Angeles' front door. Miles of fine beaches, excellent salmon fishing and all the water-borne activities imaginable are always ready for you.[7]

Figure 102. *Port Angeles Vacationland* brochure, 1961. Courtesy of University of Washington Libraries, Special Collections, UW29157. [UW29157z.tif]

[7] Port Angeles Chamber of Commerce, *Port Angeles: Vacationland*, brochure (Port Angeles: Chamber of Commerce, n.d.).

Figure 103. The Port Angeles Salmon Derby was a regional attraction until restrictions on commercial and sport fishing brought the festival to end in 1995. Salmon Derby activities on Ediz Hook, ca. 1970. Courtesy of the Bert Kellogg Collection of the North Olympic Library System. [PTAN ACTV – 026.jpg]

The 1970s also witnessed increased cultural and economic opportunities for historically marginalized groups, including American Indians. State and federal courts began to address long ignored tribal claims and Indian rights. The conflict between Western Washington tribes and the State Department of Fisheries over Indian fishing treaty rights escalated into a series of arrests, protests, and lawsuits in the 1960s, finally culminating in the landmark court case *U.S. v. Washington*.[8] In 1974, District Judge George Boldt ruled in *U.S. v. Washington* that the 1854–

[8] *U.S. v. State of Washington*, 384 F. Supp. 312 (U.S. Dist. 1974), Civ. No. 9213.

1855 treaty rights of Washington tribes, including the Elwha Klallam, entitled them to take one-half of each year's salmon harvest in the state.[9] The U.S. Supreme Court affirmed the ruling—known as the Boldt Decision—in 1979.[10] The decision surprised state officials, the Puget Sound commercial fishing industry, and sport anglers in Washington. Boldt also decreed that the Western Washington tribes should share, with the Washington Department of Fish and Wildlife, in the management and conservation of Puget Sound salmon fisheries.[11] The Boldt ruling created a new paradigm that would take years of adjustment by all parties involved with the state's fisheries.

On paper, the Boldt Decision would have seemed to present the Elwha Klallam with a means to boost their subsistence fishing and tribal economy. However, just as the state recognized their treaty-secured rights to take salmon, the salmon runs themselves were almost gone. Robert Elofson remarked, "When I was younger there were still quite a few kings and coho in the river in the sixties. But by the mid to late seventies . . . the number had dwindled so much that the state felt that it had to put in the rearing channel for the Chinook, to preserve [them]."[12] Indeed, by the 1970s, any knowledgeable observer could see that the anadromous fish runs were dying out.[13]

In an attempt to halt the decline, both the tribe and the state of Washington introduced artificial methods to keep fish reproducing. The state of Washington built and began operating a "rearing channel" for Chinook salmon in 1976, raising juveniles in the Dungeness River hatchery

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[9] *U.S. v. State of Washington*, 384 F. Supp. 312 (U.S. Dist. 1974), Civ. No. 9213.

[10] *Washington et al. v. Washington State Commercial Passenger Fishing Vessel Association et al*., 443 U.S. 658 (1979), Case No. 77-983.

[11] Northwest Indian Fisheries Commission, "Tribal Harvest Statistics, 1970–1997," http://www.nwifc.wa.gov/fishmgmt/thstats (accessed May 27, 2004).

[12] R. Elofson interview, 3.

and transporting them to the Elwha for release in the rearing channel on the former Sampson homestead. When they reached the appropriate age, the Chinook swam into the Elwha River and out into the strait, years later returning to the rearing channel to spawn. However, the state experienced only limited success with the rearing channel. Robert Elofson, who served as the tribal biologist for a time, reported that the facility did not return enough Chinook to reach "harvestable numbers."[14] Two years later, the tribe began constructing a salmon hatchery to try to maintain viable coho salmon and steelhead runs. The tribal facility was not completely successful either, although the Elwha Klallam hatchery did provide the tribe with a yearly harvest of coho and steelhead.

Nonetheless, the combination of a tribal hatchery, state rearing channel, and the remaining spawning runs of non-hatchery fish produced enough anadromous fish for the Elwha Klallam to restart tribal fishing in the late 1970s. Tribal member Patty Elofson recalled how she became a "river fisherman" after coming back to the reservation from college. She recalled coming home and challenging her cousins: "Hey guys, you know if you're making so many thousand a day, I can do that. I'm just as strong as you are or close. I didn't want to make nets for you; I wanted to make a net for me. So then they taught us."[15] Patty Elofson was not alone in her endeavor, and the Elwha Klallam became "a tribe that had a lot of women fishermen."[16] But the conditions for the fish were not improving. Regardless of the Boldt Decision and the salmon hatcheries, there was little chance of restoring the river and the native salmon runs while the Elwha dams blocked the passage of salmon upstream and the flow of sediment downstream.

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[13] Goin interview, 4–5.

[14] R. Elofson interview, 4.

[15] P. Elofson interview, 2.

[16] P. Elofson interview, 2.

Figure 104. Bluffs and Lower Elwha Klallam Reservation at the mouth of the Elwha River, n.d. Photograph by Robert Lundahl. Courtesy of Olympic National Park. [Elwha_mouth2Lundahl.jpg]

The Elwha Klallam Tribe's Challenge to Relicensing

Plummeting salmon populations, and an even more essential issue, the safety of the Elwha Dam, finally prompted the tribe to challenge the legitimacy of FERC to relicense the dams operation on the river. Robert Elofson, who became the tribe's Elwha River Restoration Project director, said the tribe "first challenged the relicensing of the dam because of the safety issues of the dams and we wanted to make sure that the reservation was safe."[17] The tribe argued that the dam should be "capable of withstanding . . . at least a 7.5 earthquake," which geologists had

[17] R. Elofson interview, 5.

determined could occur roughly once every 25 to 75 years in that area.[18] The tribe hired engineer Mike Watson to determine the extent of the risk posed by the dam. Watson found that even without an earthquake, the Elwha Dam posed a significant potential safety hazard for the tribe. Watson calculated that a "twenty-five year storm" could do enough damage to the dam to topple a portion of the edifice and send a highly destructive "bore wave" down the valley and through the reservation.[19]

Figure 105. High water flow at the Elwha Dam, n.d. Courtesy of Olympic National Park. [highwaterlwr.jpg]

By November 1979, the Lower Elwha Klallam Tribe began to advocate dam removal, primarily due to new studies that heightened the tribe's safety concerns about the Elwha Dam.

[18] R. Elofson interview, 5; and Linda Lawrance Noson, Anthony Qamar, and Gerald W. Thorsen, "Washington State Earthquake Hazards," Washington Division of Geology and Earth Resources Information Circular 85 (1988), http://www.pnsn.org/INFO_GENERAL/NQT/when_and_where.html (accessed November 30, 2009).

As though to remind them of the risks of living downstream from an unlicensed dam, in late October that year, a surge of water from the dam damaged the boats and fishing gear of tribal members, and threatened to inundate the tribe's hatchery, although the latter ultimately escaped flooding. The flood hazard posed by the Elwha Dam and the reservation's location on the floodplain at the mouth of the river also made the tribe ineligible for federal Department of Housing and Urban Development housing grants, which the tribe desperately needed at the time to provide the opportunity for more families to live on the reservation. In addition to these safety concerns, Charlie Rich, the Lower Elwha Klallam Tribe's business manager, said that the tribe wanted to see the salmon runs restored, either through fish ladders or dam removal, asking, "What's more important to the people—the dam, or all the fish that the Elwha River could possibly accommodate for the citizens of the Northwest?"[20] The Elwha Klallam became the first group to go on record in favor of dam removal when, in January 1986, the tribe filed a motion for intervention in the FERC proceedings. Four months later, a coalition of four environmental organizations—Friends of the Earth, the Sierra Club, the Seattle Audubon Society, and Olympic Park Associates followed suit and filed a motion for intervener status with FERC.[21] In November 1986, FERC granted intervener status to the tribe, the four environmental groups, and the National Marine Fisheries Service.[22]

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[19] Russell Busch, oral history interview by Paul Sadin, November 17, 2009, Seattle, Washington, audio recording and transcript, ONPA, 2.

[20] Victoria Scott, "Longtime Controversy: Troubled Waters on the Elwha," *PLACE Chronicle*, November 11, 1979, provided by Jacilee Wray, ONP. Note: all news articles cited in this chapter were provided by Jacilee Wray, ONP.

[21] Greg Johnston, "Plans Mulled to Restore Famed Elwha Chinook Run," *Seattle Post-Intelligencer*, May 14, 1986.

[22] Department of the Interior, Department of Commerce, and Lower Elwha S'Klallam Tribe, *Elwha Report*, 158.

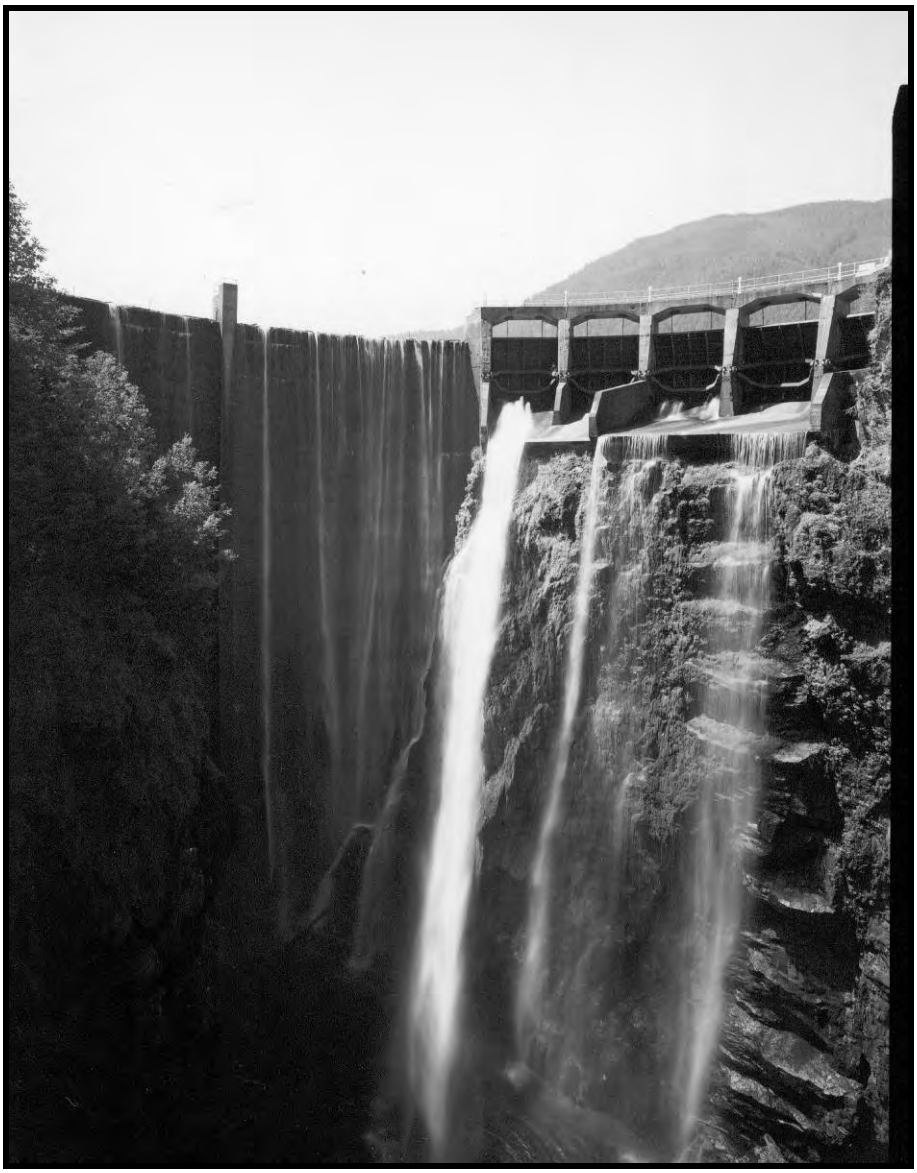

Figure 106. Face of the Glines Canyon Dam, 1995. Photograph by Jet Lowe. Courtesy of Olympic National Park. [HHWA130B8-1.jpg]

Popular sentiment in Port Angeles ran against dam removal. Former Crown Zellerbach/Nippon hydroelectric supervisor Joe Michalczik remembered that in Port Angeles prior to the 1990s, "nobody really saw the dams as a problem."[23] Most residents worried that taking out the dams would eventually chase Crown Zellerbach, the city's primary employer, out

[23] Michalczik interview, 7.

of Port Angeles. Even those willing to entertain the idea of dam removal as an option still emphasized the need to consider Crown Zellerbach's needs. One resident suggested, "The solution must be one that does not severely jeopardize the financial viability of the mill, but one that solves this serious problem for the well-being of all."[24] Port Angeles officials and residents also worried that dam removal would taint their supply of clean drinking water from the Elwha River.

Figure 107. *Peninsula Daily News* headline, August 10, 1990. [19900810_pdn.jpg]

Very few local residents were willing to argue strongly for dam removal, although a small number of area anglers, recreation enthusiasts, and community activists formed a group to discuss how they could thoughtfully support Elwha River restoration. Dick Goin recalled that the group began to discuss the problems on the Elwha River after the FERC-licensing process was underway in the 1970s. The group was a successor to previous Port Angeles hunting and fishing clubs including the Pogey Club, and prior to that, the local chapter of the Isaac Walton League.[25] Group members were aware of the problems the dams presented, though few if any entertained the (then) radical notion of removing them. Goin explained, "I never knew a time when people didn't say, the fish should be above the dam. . . . But nobody said, 'well we need to blow [the dams] out so we have the fish.'"[26] The group eventually allied with a coalition of regional environmental organizations, such as Friends of the Earth, in supporting river restoration and, if necessary, dam removal. As a whole, the group generally kept their work on Elwha restoration

[24] Lu Carlson, "A Solution for a Dam Problem," *Port Angeles Daily News*, September 30, 1986.

[25] Goin interview, 12.

issues, which included presentations to other city groups such as the local grange, "low key" because there was a "strong constituency there that was against it."[27]

DAM OPERATORS

The debate over relicensing and possibly removing the two dams went on for three decades. During that time, a few solitary Crown Zellerbach or James River employees kept the dams and powerplants in operation. While environmental and political changes shifted public notions about hydropower, their tasks and routines were little different than the jobs the first dam operators started after the first dam was finished. Because the design and construction of the Glines Canyon Dam and power plant allowed them to be operated remotely from the Elwha Dam, few staff members were needed to run the dams and power systems. The crew on each shift consisted of two dam operators—one at each dam—with one maintenance staff member serving both facilities. The dam supervisor spent time at both sites as well as in the company office in Port Angeles. From there, former Crown Zellerbach/Nippon hydroelectric supervisor Joe Michalczik explained, they handled the task of monitoring "right around 26 or 27 miles of 69,000-volt transmission line."[28] Typically, the Glines Canyon operator lived in the company's residence on-site. Operators and maintenance personnel for Elwha Dam lived in Port Angeles or another nearby town and commuted to work, but at least one of the operators was at the dam around the clock.

[26] Goin interview, 12

[27] Goin interview, 13.

[28] Joe Michalczik, interview with Paul Sadin and Dawn Vogel, August 28, 2009, transcript, 9.

Figure 108. Powerhouse control room, Elwha Dam, n.d. Courtesy of Olympic National Park. [DSCN2494.JPG]

Dam operators had to deal with tedium, interrupted by routine safety and maintenance checks. For instance, once an hour, operators had to log in and also call Bonneville Power Administration to confirm that the dams were on-line. Although the operation was mostly automated, the jobs could still be very demanding. At least one operator had to be at the controls 24 hours a day, 7 days a week, in case an emergency should arise. Dangers were present as well. The long catwalk descending from the top of the canyon to the control room at Elwha Dam was slippery from spray and rain any time of the year, but it was particularly hazardous when winter ice or snow covered it. There were also numerous stairwells to go up and down inside the facility. On one occasion, one of the team tripped and fell off the stairs. Because he was working

alone, as usual, the man "lay there kind of semi-unconscious for a very long time until he got his marbles together."[29] Of course, the workers also had to remain aware that they were always surrounded by extremely high voltage electrical lines, which led to a severe accident on at least one occasion.

Figure 109. Control panels at the Elwha Dam, 2005. Photograph by Betsy Carlson. Courtesy of Olympic National Park. [Elwha Dam Control Panels.jpg]

Juan Macias was a Crown Zellerbach/James River mill employee until 1984, when he obtained a promotion to work with the dam operator team as one of the maintenance staff. Macias recalled that the maintenance job required him to be a "jack of all trades." He explained: "I became a

[29] Juan Macias, telephone interview by Paul Sadin, February 8, 2010, transcript, 3.

lineman, and I became a plumber, and an electrician . . . we had 36 miles of transmission line to keep up. And brushing, [so] I became a logger. And replacing insulators and wiring for the electricity to travel on. And maintaining the dams."[30] The biggest maintenance task arrived when Glines Dam was shut down for two to three weeks each year to perform safety checks, replace worn parts, repack the pumps with grease, etc. Maintenance staff performed the same tasks at Elwha Dam, but because the plant contained four generators, Elwha Dam remained in operation while the cleaning and replacement work was done one generator at a time.

Macias was later promoted to operator at the Elwha Dam, where he learned firsthand the dangers of the job. In April 1995, he was performing a "switching" operation, which transfers the electrical current from one part of the powerhouse to another. Macias recalled he was in the process of switching the current from one transformer (using a wooden "hot stick" designated for that task), and then, "all that I remember was this ball of fire coming after me. The next thing I knew somebody found me and I was laying about twenty feet away and I was burnt from my shoulders on up."[31] A maintenance crew that happened to be working upstairs that day heard the explosion, which knocked out the lights in the facility, and then went looking for Macias. They found him "fifteen or twenty feet away from the switch cell" that he had been working on. Macias doesn't remember whether he tried to run away from the cell or whether the blast from 6,900 volts of electricity had knocked him clear across the room. Emergency responders brought him to the local hospital, but the next day he went to the regional burn center at Harborview Hospital in Seattle, where he spent the next two to three weeks receiving burn treatments. It was more than six months before he went back to work at the dam, and he was understandably

[30] Macias interview, 6.

[31] Macias interview, 6.

nervous around the switching cells. Macias did return to work full-time and remained a dam operator until his retirement in 2005.[32]

Figure 110. Generators at the Elwha Dam, 2005. Photograph by Betsy Carlson. Courtesy of Olympic National Park. [Elwha Dam Generator Equipment.jpg]

Regardless of the era and the political changes that shaped the future of the dams, the company's (whether it was Crown Zellerbach or James River) dam operators were a constant, though usually unnoticed, presence on the Elwha River. They shared with each other "a lot of pride" in their jobs. Several dam operators became lifelong residents of the Elwha Valley, such as Claude Homer, the hydroelectric supervisor who worked and lived at the Elwha Dam site for 42 years

[32] Macias interview, 7-9.

until he retired in the early 1970s. Michalczik commented, "I think that the people that worked out there [at the dams] loved their work."[33]

Outside Port Angeles, environmentalists tried to build support for river restoration and dam removal, although the tactics of the various organizations differed. The coalition of environmental groups worked slowly to build an educational effort regarding dam removal from the Elwha River. Some of the leading "enviros" in the Pacific Northwest saw a twofold benefit to Elwha dam removal. In addition to restoring salmon runs and river habitat, pulling out the Elwha dams and their associated structures presented the prospect of restoring wilderness status to the upper Elwha Valley.[34] Once the dams and impounded lakes were gone, the watershed would become eligible for designation as federal wilderness, which offered another layer of preservation to land within a national park.

[33] Michalczik interview, 10.

[34] Shawn Cantrell, oral history interview by Paul Sadin, December 2, 2009, Seattle, Washington, transcript, 4. When interviewed for this history, Cantrell was Executive Director of the Seattle Audubon Society.

Figure 111. Jamie Valadez talking to teachers at the Elwha River, July 2005. Photograph by Betty Carlson. Courtesy of Olympic National Park. [J.Valadez talking to teachers at Elwha 7.05 bcarlsonphoto.jpg]

But even within the regional environmental community, the idea of promoting dam removal initially sounded outlandish or even "crazy." Many environmentalists responded with an attitude that Shawn Cantrell, at the time Elwha River project director for Friends of the Earth, describes as, "You're making us, as a community, look too extreme . . . . Why waste time and energy and resources on a campaign like this when it's going to hurt our image and be unsuccessful."[35] Nonetheless, Friends of the Earth, Seattle Audubon, Olympic Park Associates, and the Cascade chapter of the Sierra Club eventually joined in the dam removal campaign, and began by

[35] Cantrell interview, 4.

launching a public-relations effort to educate and convince other local environmental groups, local politicians, and media outlets that Elwha dam removal was a viable strategy and thus a worthwhile cause.

Figure 112. Bald eagles feed extensively on dying salmon and steelhead during the spawning runs, n.d. Photograph by Scott Church. Courtesy of Olympic National Park. [eagle02 copy Scott Church.jpg]

Other environmentalists took a more aggressive approach. The radical environmental group Earth First! organized demonstrations in the Port Angeles area, and claimed responsibility for an

unknown artist who painted a crack down the Elwha Dam in September 1987.[36] An Earth First! member attending a June 1987 demonstration in Port Angeles said that the Elwha had "been dammed up too long . . . . It's a real insult to nature."[37] Earth First! also verbally attacked the NPS, stating "the Park Service should not be waffling. . . . It should be advocating removal of the (Glines Canyon) dam."[38]

Unknown Earth First! artist paints 'crack' on Elwha dam

Figure 113. "Unknown Earth First! artist paints 'crack' on Elwha Dam." Newspaper headline from the *Peninsula Daily News*, September 3, 1987. [19870903_pdn.jpg]

Indeed, at that juncture in the restoration campaign, the NPS did not yet advocate for dam removal, while it worked to clarify the agency's position regarding the dams and the salmon runs on the Elwha. Even though Congress had already enacted laws in the 1890s to protect wildlife in the earliest national parks, that protection did not extend to fish. For more than a half-century, the NPS encouraged fishing as a significant visitor use, while stocking streams and lakes far and wide with fingerling trout and other fish species, many of them non-native. In the 1930s, NPS staff began stocking the lakes and streams within the national monument and the practice continued after Congress established Olympic National Park. A local news account revealed that close to 300,000 fingerling trout were planted within the park in 1940. The reporter credited the

[36] "Environmentalist Wants Dam Removed," *Forks Forum*, July 15, 1987; Lorraine Maris, "Environmental Group Pursues Dam Removal," *Forks Forum*, August 5, 1987; "Earth First! Calls for Elwha Dams' Removal," *Peninsula Daily News*, August 11, 1987; and Kevin Dolan, "Unknown Earth First! Artist Paints 'Crack' on Elwha Dam," *Peninsula Daily News*, September 3, 1987.

[37] Kevin Dolan, "Elwha Dams Not Needed, Earth First! Group Says," *Peninsula Daily News*, June 29, 1987.

[38] Lee Moriwaki, "Relicensing Opposed for Dam in Olympic Park," *Seattle Times*, July 16, 1988.

park for "realizing the importance of good fishing as a tourist attraction."[39] Not until the 1960s did the NPS begin to initiate policies to stop stocking exotic species and preserve native fish.[40] Park officials finally halted all fish stocking within ONP in 1975, and resource management staff began developing plans for native fish recovery programs.[41]

In the 1980s, however, the NPS began to take a new view of native fish and fish habitat. At ONP, new policies emphasized restoring "wild (not hatchery) anadromous fish to the Park's rivers."[42] For the Elwha River, the park wanted to re-establish the mix of aquatic species in the river prior to dam construction.[43] Biologists and fisheries managers began to determine how they might move spawning salmon past the dams as they swam upstream. Biologists also released a number of juvenile salmon above the dams to study fish mortality and return rates after juveniles made their downstream passage through the reservoirs, spillways, or turbines. The NPS and U.S. Fish and Wildlife Service conducted studies in the mid-1980s, which showed that during downstream migration, a substantial number of salmon and steelhead smolts died of internal injuries from the plunge over the spillways. In addition, certain species and sizes of smolts never made it through the reservoir on their way downstream. Survival rates varied for different

[39] "Fish Planted in Waters of Park," *Port Angeles Evening News*, April 19, 1941.

[40] Richard West Sellars, *Preserving Nature in the National Parks: A History* (New Haven, Conn.: Yale University Press, 1997), 123–26, 163–64.

[41] Hal Rothman, "An American Eden: An Administrative History of Olympic National Park," final report, 2006, 189-90, electronic file provided by Jacilee Wray, ONP.

[42] Charles Gowan, Kurt Stephenson, and Leonard Shabman, "The Role of Ecosystem Valuation in Environmental Decision Making: Hydropower Relicensing and Dam Removal on the Elwha River," *Ecological Economics* 56 (April 2006): 511.

[43] Greg Johnston, "Historic Fish Effort in the Upper Elwha," *Seattle Post-Intelligencer*, September 7, 1983; and see also Don Paxson, "Project May Return Salmon to the Elwha," *Port Angeles Daily News*, April 25, 1983.

species and different conditions, but the downstream mortality ran as high as 45 percent for Chinook salmon and 29 percent for coho.[44]

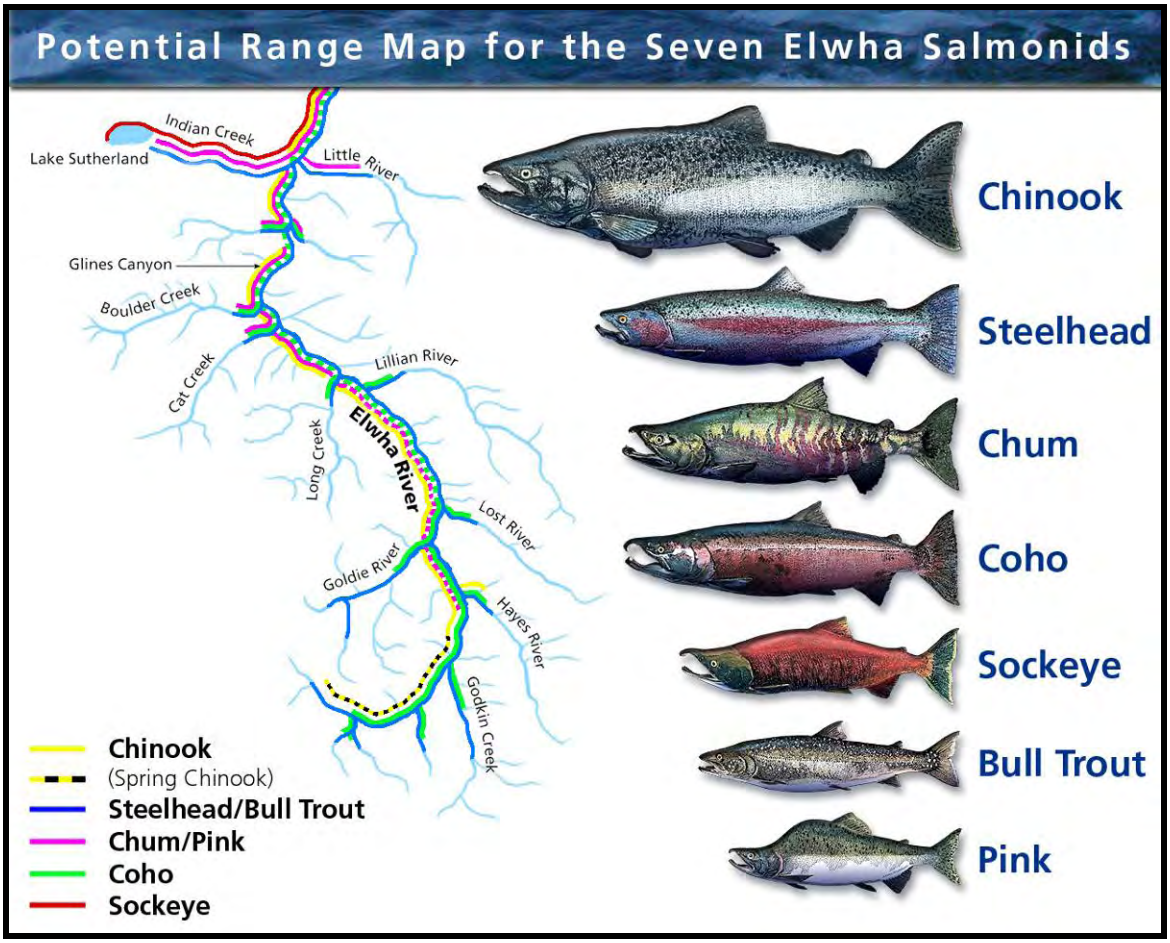

Figure 114. Drawing of anadromous fish species formerly found in the Elwha River, with map showing their potential habitat after restoration of river is completed. Courtesy of Olympic National Park. [fish_maps_composite.jpg]

In late 1986, with some of these new studies in hand, the NPS, Lower Elwha Klallam Tribe, Washington Department of Game, U.S. Fish and Wildlife Service, and the National Marine Fisheries Service combined forces to form a group called the Joint Fisheries and Wildlife Agencies (JFWA). The JFWA petitioned FERC and James River Company to conduct additional

[44] Brian Winter and Patrick Crain, "Making the Case for Ecosystem Restoration by Dam Removal in the Elwha River, Washington," *Northwest Science* 82 (2008): 17–18.

studies to determine what was needed to reestablish the native Elwha salmon runs above the dams.[45] The JFWA wanted all possible strategies for river restoration analyzed, including the possibility of dam removal. But FERC was not prepared to consider a step so drastic.[46] As some of these discussions gained media coverage, even mentioning dam removal as a remote possibility made the Elwha dams a thorny subject for public officials in the state.

In early 1989, however, Washington Representative Al Swift took a substantial political risk by backing JFWA's requests and pushing arduously for an Elwha River study that would include dam removal as an option. He continued to advocate against dam removal but explained to his constituents—most of them solidly opposed to removal—that a neutral, comprehensive study of the Elwha problem was essential. He warned them that without a full-fledged study, the city and Daishowa/James River would face "lawsuits of the kind that environmentalists have been winning frequently."[47] In a private meeting between the two companies, Swift was more blunt. He told them, "Look, if you're going to try to stonewall against a study of dam removal, you're going to lose."[48]

By the late 1980s, the NPS, additional members of Washington's Congressional delegation, and an increasing number of recreational anglers began to look at dam removal as a viable option for restoring the river. Olympic National Park officials realized that they had a "unique combination of players and circumstances" that made removal of the Elwha Dams possible."[49] Because one of the dams was inside a national park, it raised "a very legitimate question about whether there was any authority for it to be there." And the Elwha River watershed, except for

[45] Gowan, Stephenson, and Shabman, "The Role of Ecosystem Valuation," 512–13.

[46] Gowan, Stephenson, and Shabman, "The Role of Ecosystem Valuation," 511, 513.

[47] "Mill Owners Get 'Dose of Reality' on Fate of Elwha Dams," *Seattle Post-Intelligencer*, n.d. [January 1989].

[48] "Mill Owners Get 'Dose of Reality.'"

the 11 miles below Glines Canyon Dam, remained intact and protected from future despoliation because it was within the national park. The Lower Elwha Klallam Tribe had an ancestral claim on the river and a reservation at its mouth, with treaty rights that mandated an intact fishery and healthy habitat. All of these factors made removal of two large dams and restoration of a river more "doable" than might be the case elsewhere in the country.[50] The park superintendents during the key years of the licensing and removal debate, Robert Chandler (1983–1989) and Maureen Finnerty (1990–1994), saw that they had the chance to achieve something special. They had "the opportunity to restore a significant ecosystem in a major national park and that had never been done."[51]

By the early 1990s, a formidable alliance of government agencies, environmental groups, the Lower Elwha Klallam Tribe, recreational fishing organizations, and members of Washington's congressional delegation united behind the dam removal effort. One participant compared the regular meetings of this diverse collection of partners to working with an octopus, because it was difficult to get "all of these arms . . . coordinated around a central theme."[52] Yet all of the arms gave additional strength to dam removal advocates. There were many "players from the different viewpoints that could push in places that other people couldn't."[53]

A mounting tally of scientific studies confirmed that dam removal was the best option to bring back healthy Elwha River fish runs. The Lower Elwha Klallam Tribe had received federal funding of approximately $500,000 a year in the early 1990s that they used to hire engineering

[49] Harris, "Groups Split on Elwha Dam."

[50] Cat Hawkins-Hoffman, oral history interview by Paul Sadin, October 20, 2009, Olympic National Park, Port Angeles, Washington, transcript, 2–3.

[51] Maureen Finnerty, telephone interview by Paul Sadin, October 26, 2009, transcript, 2.

[52] Hawkins-Hoffman interview, 2.

[53] Hawkins-Hoffman interview, 9.

firms, hydrologists, and biologists to perform the studies necessary to demonstrate the need for Elwha dam removal.[54] The studies went far in supporting the political campaign and legislative action aimed at dam removal that emerged in 1992.

Throughout the first two decades of the licensing process and dam removal debate, the owners of the dams, Crown Zellerbach and James River Corporation, and mill owner Daishowa America Corporation, were opposed to dam removal. Because of the complexities and unknowns of the relicensing process, the agreement for the purchase of the James River properties was arranged so that James River remained owner of the dams and Daishowa "would operate and maintain them and receive all the benefits as if they owned them."[55]As the licensing process dragged on and the debate over dam removal moved to the forefront in the early 1990s, the companies kept their positions flexible rather than deeply entrenched. Campbell explained that James River ownership could see that increasing federal regulations and other costs had created a situation where "a manufacturing company can no longer afford to own," a hydroelectric project. The company's main concern was "to keep the mill viable. Keep it profitable. And if there was another way to do that, they were willing to listen."[56]

When local and regional media outlets began reporting that dam removal had become a real possibility, the news set off alarm bells among some city officials and residents.[57] The Port Angeles City Council submitted a letter to the Department of the Interior expressing their skepticism about dam removal, which they believed could be economically "devastating" for

[54] R. Elofson interview, 5.

[55] Campbell interview, 6.

[56] Campbell interview, 9.

[57] Don Hamilton, "Federal Report Offers Dam-Removal Option," *Portland Oregonian*, February 26, 1991; Bill Dietrich, "Federal Agency Backs Removal of Elwha Dams," *Seattle Times*, February 27, 1991; and "Study Eases Price Tag on Dam Removal," *Peninsula Daily News*, February 28, 1991.

Port Angeles.[58] Opponents of dam removal in Port Angeles and on the north peninsula began to raise their voices. They generally made three principal arguments for keeping the dams in place. They did not believe dam removal would bring back the salmon runs, they suggested that the increased sediment in the river would ruin the city's water supply, and they contested that the loss of cheap electricity from Elwha hydropower would eventually push Daishowa to close the mill, costing the city its major employer.[59]

Figure 115. The mouth of the Elwha River, 1994. Courtesy of Olympic National Park. [Elwhamouth1994DOECL A0241_mr[1].jpg]

[58] "Future of Dams a Concern to PA," *Peninsula Daily News*, March 20, 1991.

[59] Cantrell interview, 14.

Elwha River Ecosystem and Fisheries Restoration Act

Dam removal advocates gained their strongest political support to date when powerful members of Congress, including New Jersey Senator Bill Bradley and Washington Senator Brock Adams, began to consider legislation that would pave the way for Elwha dam removal. Adams, Bradley, Swift, and Washington Representative John Miller began to construct the framework and language of a bill they would introduce to the 92nd Congress. Much to the surprise of the other supporters of the proposed legislation, Adams introduced an Elwha bill to the Senate in April 1992, sooner than his allies expected.[60] Adams and Bradley became the official sponsors of the Senate bill in April, and Swift introduced the companion bill in the House.

Congressional committees and their staff members began to shape the bill's language, and a period of "intense negotiations" began between the various groups and organizations involved with the river and the dams. Cantrell remembered engaging in what he called "shuttle diplomacy" between representatives of the tribe, city, James River/Daishowa, agencies, and environmental groups, trying to find points of compromise among them.[61] Daishowa announced that the proposed bill was "fair and commended the federal lawmakers who introduced the bill."[62] A key selling point for the company was the intent to have BPA deliver power to the mill "at a cost comparable to what the company would pay if the dams stayed in place."[63] The city of Port Angeles, however, disliked the initial draft of the legislation, mainly due to a land dispute with the tribe. In addition, city officials continued their insistence on a replacement water supply

[60] Cantrell interview, 12.

[61] Cantrell interview, 12.

[62] "Daishowa Likes Bill to Oust Dams," *Peninsula Daily News*, April 5, 1992.

[63] "Daishowa Likes Bill to Oust Dams."

system.[64] The land dispute involved a section in an early version of the legislation that would have transferred one-third of the government's property on Ediz Hook to the Lower Elwha Klallam Tribe. The tribe and the city eventually compromised on this portion of the legislation, wherein the city obtained the land and agreed to lease a small parcel to the tribe. Negotiations such as this one between the city and the tribe were part of the "shuttle diplomacy" carried out among the different stakeholders. By September, the central players—the dam owners, tribe, leaders of the environmental coalition, and federal agencies—had sculpted a bill that all "felt was acceptable."[65]

[64] "Some Query PA's Stance on Dam Cuts," *Peninsula Daily News*, June 2, 1992; "PA Digs In over Hook," *Peninsula Daily News*, June 17, 1992; "PA Still Unhappy with Hook Plan," *Peninsula Daily News*, June 26, 1992; "PA Plan Makes Room for Indians on Hook," *Peninsula Daily News*, July 1, 1992; and "City, Tribe Approve Pact on Ediz Hook Land Use," *Peninsula Daily News*, August 5, 1992.

[65] Cantrell interview, 12.

Figure 116. Ediz Hook, with Nippon Mill at bottom of picture, n.d. Washington Department of Ecology photograph. Courtesy of Olympic National Park. [EdizHook.jpg]

Congressional hearings on the Bradley/Adams bill helped build further support for the legislation, and also gave the Elwha Klallam tribal members the opportunity to tell the country how much the river meant to them and what a significant impact the dams had had on their lives and culture. A number of tribal members traveled to Washington, D.C., to testify, including tribal elder Beatrice Charles, who told Elwha Klallam tribal attorney Russell Busch, "I've been waiting all my life to tell this story." Busch recalled that during the committee hearing, "everybody stopped" to listen to her account of stories handed down through the generations describing the Elwha River prior to the dams.[66]

[66] Busch interview, 7.

Figure 117. Elwha Klallam tribal members Bea Charles and Adeline Smith, with the Elwha River in the background, n.d. Photograph by Jacilee Wray. [Bea and AdelineImage26.jpg]

POWER POLITICS

After nearly two decades of discussion and debate over the fate of the Elwha dams, the final decision on the critical Elwha River Restoration legislation came down to the proverbial "smoke-filled room" negotiation during the last few hours the bill could be enacted. While Bradley and Adams were the named sponsors of the bill and had put in the most legwork to move the bill through Congress, Washington Representative Al Swift's political maneuvering saved it at the so-called eleventh hour. The bill had strong support in both the Senate and the House but it still had to pass through the House Energy Committee, where longtime chair, Michigan Congressman John Dingell, had on multiple occasions expressed serious doubts about the bill's wisdom. One participant in shaping the bill said Dingell is "like a powerhouse and he knows how to play power politics and he doesn't mess around."[67] When the time came for the committee to decide on the remaining bills before them on the final day of the 92nd Congress, Dingell reiterated his qualms about the Elwha Restoration bill and declared it dead for that session. At that point, Swift, who had served on the committee with Dingell for many years, requested a private meeting with Dingell. According to witnesses, they left the committee meeting, went into a separate room, and "positioned one of the staffers at the door to keep everybody else out."[68] What ensued was a brief but vociferous deliberation between the two, their argument audible to everyone standing out in the hallway. When they emerged, Dingell had changed his mind and reopened discussion of the bill, thus allowing the committee to sign off on the bill's passage.[69]

[67] Cantrell, 13.

[68] Hawkins-Hoffman interview, 8.

[69] Cantrell interview, 13. In separate interviews, Cantrell, Busch, and Hawkins-Hoffman all gave similar descriptions of this important exchange.

As Orville Campbell said to news reporters the following day, "it was miraculous that it got through the Congress during the 11th hour given the changes that had to be made."[70] A little over two weeks later, on October 24, 1992, President George H. W. Bush signed into law P.L. 102-495, the Elwha River Ecosystem and Fisheries Restoration Act.

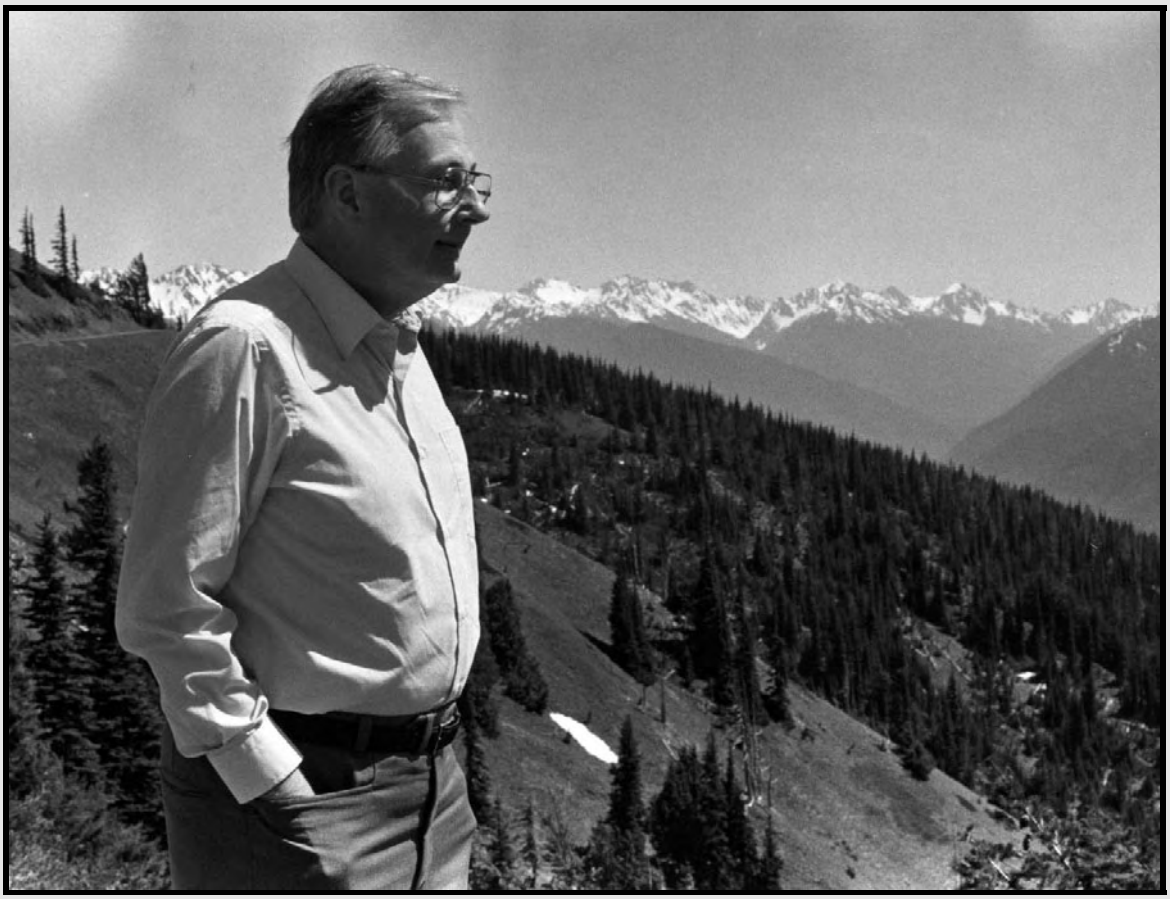

Figure 118. Representative Al Swift on a trip to Olympic National Park in 1985. Courtesy of Al Swift Congressional Papers, Center for Pacific Northwest Studies, Western Washington University [234.3 Olympic Nat'l Park citation.tif].

As soon as President Bush signed the Elwha River Ecosystem and Fisheries Restoration Act, celebrations and sighs of relief broke out among the dam removal proponents. Carla Elofson, tribal chairwoman at the time, wrote that "the signing of the bill this week is the culmination of a

[70] Logan Harris, "Dam Bill Prompts Praise, Anger," *Peninsula Daily News*, October 9, 1992.

struggle for many years to restore the Elwha River."[71] Although the legislation was carefully worded so that it did not explicitly call for the removal of the two Elwha dams, it laid the groundwork necessary to accomplish that task. Cantrell said, "We thought we won . . . and the process was basically done."[72] Unforeseen at the time, however, were two enormous hurdles that still had to be overcome.

Figure 119. Aerial photograph of the lower portion and mouth of the Elwha River, location of the Lower Elwha Klallam Reservation, 1994. Courtesy of Dick Goin. [Goin11-rotatedandcropped.tif]

[71] Logan Harris, "S'Klallams Laud Move to Kill Elwha Dams," *Peninsula Daily News*, October 30, 1992.

[72] Cantrell interview, 14.

Local Resistance to Dam Removal

When the Elwha Restoration Act passed, Port Angeles city manager Jeff Pomeranz said that the two main issues for the city—water supply and inexpensive electricity to keep the mill running—were satisfactorily supported in the law.[73] But in fact, most of the local communities on the Olympic Peninsula—including Port Angeles—did not support the bill. Many Port Angeles residents opposed dam removal, and some resented "outsider" politicians and government bodies telling them how to take care of their own backyard. One local group, the Olympic Peninsula Economic Research Association, was opposed to dam removal throughout the debate. Donald Rudolph, chairman of the association, said, "with electrical energy a known shortage we are being faced with, we can't understand why we would be taking out power dams that could produce more power at very little expense. Our personal position is that fish won't come back to any great levels, anyway."[74] Another Port Angeles resident said, "I have yet to talk to anyone who favors dam removal."[75]

Proposal to remove Elwha dams finds community sharply divided

Figure 120. "Proposal to remove Elwha dams finds community sharply divided." Newspaper headline from the *Daily World* (Aberdeen), August 16, 1990. [19900816_aberdeendailyworld.jpg]

[73] "Bush Signs Elwha Bill," *Peninsula Daily News*, October 26, 1992.

[74] Harris, "Dam Bill Prompts Praise, Anger."

[75] Ed Tuttle, "Few Favor Dam Removal," *Peninsula Daily News*, January 13, 1993. The letters section of the *Peninsula Daily News* featured letters to the editor from both sides of the argument, with the majority expressing opposition to dam removal, for many months after Bush signed this piece of legislation. See, for example, Del Graham, "Sewage Outfalls and Dams," *Peninsula Daily News*, January 31, 1993; Ralph Koester, "Dam Removal Hurts Fish," *Peninsula Daily News*, February 23, 1993; David and Phyllis Childs, "Dam-Removal Plan Silly," *Peninsula Daily News*, May 12, 1993; A. H. Roush, "Dam Removal Foolish," *Peninsula Daily News*, May 20, 1993; Edwin R. Johnson, "Take Out Dams," *Peninsula Daily News*, June 10, 1993; and Donald E. Rudolph, "Leave Elwha Dams Alone," *Peninsula Daily News*, June 30, 1993.

Passage of PL 102-495 seemed to galvanize opposition to dam removal in the Port Angeles area. In Campbell's words, "After the Elwha Act was signed into law there was a kind of a backlash within the community."[76] Most locals were already smarting from a federal court injunction that had shut down logging operations in the peninsula's national forests because of threats to the habitat of northern spotted owls. The judicial order struck a severe blow to the already troubled Olympic Peninsula timber industry. As more loggers lost their jobs and more mills closed, the hue and cry on the peninsula became, "We are the endangered species."[77] Joe Michalczik, Daishowa dam supervisor and local resident at the time, observed that most of his neighbors viewed the removal program as another example of "the federal government trying to take over."[78]

[76] Campbell interview, 12.

[77] Cantrell interview, 15.

[78] Michalczik interview, 7.

Figure 121. Lake Mills, above the Glines Canyon Dam, May 25, 2005. Courtesy of Olympic National Park. [Elwha May 25,2005 NPS.jpg]

Opponents of dam removal became more active. A group of local citizens formed an organization called Rescue Elwha Area Lakes, or REAL. Their goal was to either prevent or slow the removal of the dams in an effort to protect Mills and Aldwell lakes and to prevent federal takeover of the projects and property. The group asserted that about 75 percent of the local residents they had talked to agreed that the dams should remain intact. Donald Rudolph said about the organization, "we'll do whatever we can to save those beautiful lakes."[79] The presence of trumpeter swans, which were proposed for listing as a threatened species (they were

[79] David Noonan, "Citizen Group Wants to Save Elwha Dams," *Peninsula Daily News*, October 8, 1993.

never listed), on Lake Aldwell gave some residents hope that the lakes would need to be preserved as a habitat for these birds.[80]

Figure 122. Lake Aldwell, above the Elwha Dam, n.d. Courtesy of Olympic National Park. [8Elwha_Betsy.46 of – 27.jpg]

Figure 123. *Seattle Times* newspaper headline, March 30, 1990, following the release of a General Accounting Office report on the Elwha Dams. The report concluded that FERC did not have the authority to relicense the Glines Canyon Dam. [19900330_seattletimes.jpg]

Another citizen's group in Port Angeles, the Citizens Advisory Committee, worked hard to keep the dam removal debate civil and to help educate the community about every side of the

[80] B. L. Adamire, "Trumpeter Swans on Lake," *Peninsula Daily News*, December 7, 1993; and Marvin
… continued on next page

issue. Composed of the "leaders, movers and shakers" of the Port Angeles business, civic, and social organizations, the advisory committee included the mayor, county commissioner, and other present and former city officials. The committee held public meetings, gave presentations to different groups, and tried to determine the best policy position for the community at large. According to Campbell,

> the people that were on that advisory committee spent one hell of a lot of time, personal time, reading documents and listening to the stake holders make their presentations and then studying the results afterwards. They, I think as a group reached the same conclusion in the end that the companies did. That there is no other option. You can rant and rave all day long about it's a bad idea to remove the dams, but in fact they're going to come out. . . . I think that it could be said that over time, over a long period of time, the whole community came to understand the Elwha dam issue the same as the advisory committee did. Nobody got the concentration of information over a six or eight-month period of time that this committee did but over a long period of time they did absorb a lot of information about the issues."[81]

As the debate continued, the groundwork for dam removal continued to move forward. The next critical task was the completion of the environmental impact statement (EIS) process for the Elwha Restoration project. One of the most important pieces of environmental legislation from the 1970s, NEPA, mandated that any construction or alterations on federal lands (or on private land funded by a federal agency) must go through an environmental review process. The EIS process involved investigating a number of possible alternatives, in this case ranging from no action to complete dam removal. Between 1991 and 1996, two separate EIS reports were issued, revised, and completed. For each of them, there was a public comment period and a series of public meetings held in Port Angeles and other locations around the peninsula. Almost every meeting was crowded with dam removal advocates, removal opponents, and undecided

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Chastain, "The Attack on the Elwha," *Sequim Citizen News*, January 28, 1994.

[81] Campbell interview, 15-16.

participants who came to learn more. Some of the public meetings drew upward of 200 people, and for the final EIS alone, the NPS received over 600 written comments.[82] In the end, the EIS process determined that dam removal was the only solution that could restore Elwha River fish runs, and emphasized that other steps, such as installing fish passages or removing only one of the dams, would not be sufficient measures.[83]

ENDANGERED SPECIES

The Endangered Species Act (ESA) of 1973 proved to be one of the strongest statutes of the environmental law passed during that era of new federal regulatory power. It signaled that preventing extinction and protecting biodiversity had become major goals of natural resource policy at the national level.[84] The U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service identified animals and plants as *threatened* if populations had dropped so low that they appeared likely to become endangered. The term *endangered* applied to species that appeared in danger of becoming extinct. Called the "pit bull of environmental law," the ESA established a set of regulations preventing the harvesting, possession, sale, and delivery of threatened and endangered species. It also required the appropriate agencies, including the NPS, to develop a plan to recover animal populations listed as threatened or endangered. For the first

[82] "Elwha Dams Meetings Set," *Peninsula Daily News*, October 14, 1994; "Plan Backs Elwha Dam Removal," *Peninsula Daily News*, October 19, 1994; "Elwha Dams Should Go, Park Study Says," *Peninsula Daily News*, July 28, 1995; "185 Attend Dam Meeting," *Peninsula Daily News*, May 23, 1996; and "Dams Must Go to Save Salmon, Park Study Says," *Seattle Post-Intelligencer*, July 28, 1995.

[83] "Park Finishes Plan for Dam Removal," *Peninsula Daily News*, February 19, 1996; "Dams Must Go, Park Says," *Peninsula Daily News*, March 5, 1996; and "Elwha Draft EIS Has Been Released," *Forks Forum*, May 8, 1996.

[84] Howard P. Brokaw, ed., *Wildlife and America: Contributions to an Understanding of American Wildlife and its Conservation* (Washington, D.C.: GPO, 1978); and Robert Paehlke, ed. *Conservation and Environmentalism: An Encyclopedia*, 2nd ed. (n.p.: Fitzroy Dearborn, 1995).

time, natural resource managers in the public and private sectors had a federal mandate to give high priority to endangered species and their habitat requirements.[85]

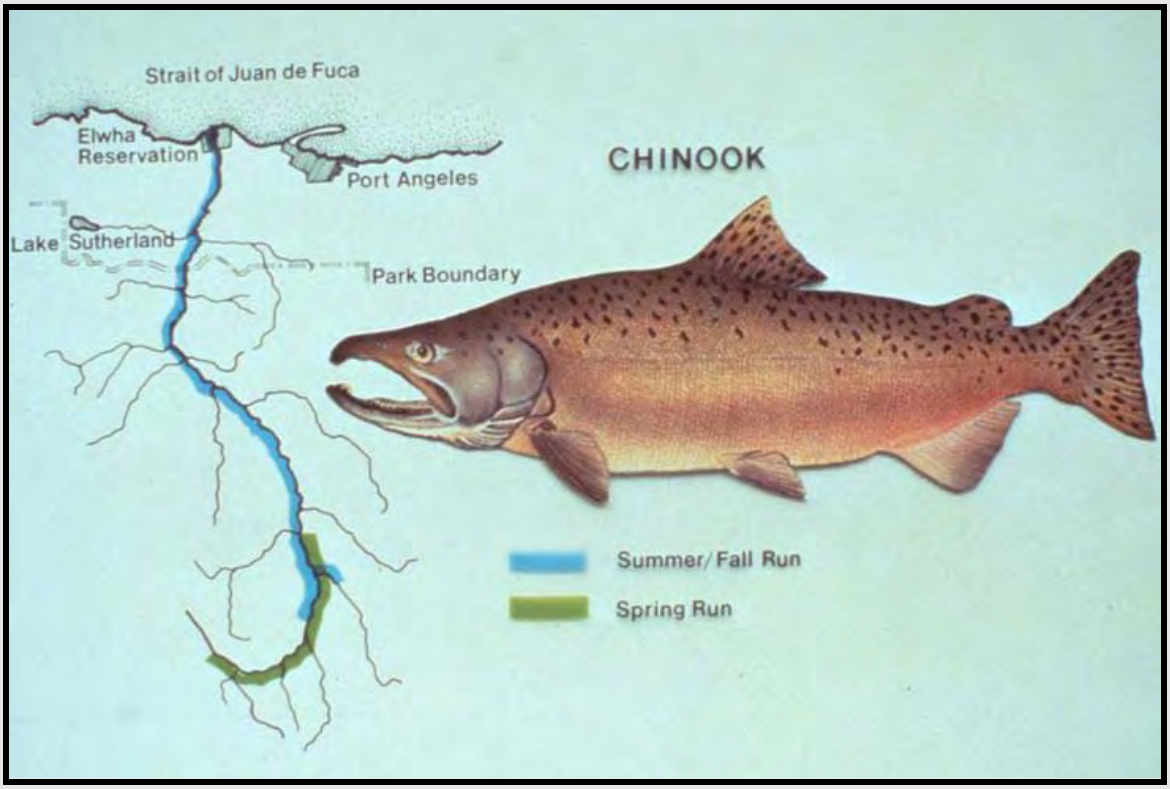

Figure 124. Map showing the historic runs of Chinook salmon up the Elwha River. Courtesy of Olympic National Park. [ChartRestoredChinook.jpg]

ESA regulations played a part in the debate over the fate of the dams on the Elwha River. The final EIS for the Elwha River Ecosystem and Fisheries Restoration plan determined that the short-term impact from dam removal had the potential to disturb the habitat of a number of endangered or threatened species, including spotted owls, marbled murrelets, and bald eagles. Construction during dam removal might also threaten the recovery of some salmon and steelhead

[85] Brokaw, ed., *Wildlife and America*; and Paehlke, ed. *Conservation and Environmentalism*.

runs. But the EIS found that in the long run, the restoration of a healthier river ecosystem via dam removal would improve essential habitat and enhance the recovery of these species.[86] Three species found in the Elwha River—Puget Sound Chinook, Puget Sound steelhead, and Coastal Puget Sound bull trout—have since then been listed as threatened. Fish and Wildlife Service scientists put Puget Sound Chinook salmon on the ESA's threatened species list on March 24, 1999. In November 1999, the USFWS listed all bull trout populations, which includes the Coastal-Puget Sound bull trout that spawns in the Elwha River, throughout the lower 48 states as a federally threatened species. Puget Sound steelhead went on the threatened list in May 2007. The Elwha River is within the ESA-designated "critical habitat" area necessary for the full recovery of these species.

Figure 125. Bull trout, n.d.. Photograph by Dave Zelenka. Courtesy of Olympic National Park. [New photos to add\bulltrout.jpg]

[86] Rothman, "American Eden," 199-200.

In October 1994, Daishowa America announced that keeping the dams would cost the company more money than removing them. If the dams were removed, the company reasoned, the Elwha River Ecosystem and Fisheries Restoration Act guaranteed the mill could obtain BPA power at the standard industrial rate. Conversely, if the dams stayed and could not be relicensed, then the company would be forced to buy BPA power at the full load rate.[87] In May 1995, the dam owner, James River Corporation, also threw its support behind dam removal. Campbell, in his role as spokesperson for the company, explained, "we need to press forward with a solution" and suggested that dam removal would allow for a "winning situation."[88]

Figure 126. Upper Elwha River watershed, in Olympic National Park, above Glines Canyon Dam, n.d. Photograph by Robert Lundahl. Courtesy of Olympic National Park. [upper_watershed.jpg]

[87] David Noonan, "Mill Wants Dams Out," *Peninsula Daily News*, October 25, 1994.

[88] Mike Dawson, "Elwha Dams Owner, Environmentalists Unite," *Peninsula Daily News*, May 18, 1995.

There was a last impediment to dam removal that was purely political. The November 1994 election gave the Republican Party a majority in both houses of Congress, which dealt a severe blow to the progress of the Elwha dam removal program. Although the Restoration Act put the decision making about dam removal in the hands of the Secretary of the Interior, Congress held the authority for appropriating the money to pay for the immense cost of restoration and dam removal. The election strengthened the political base of Washington Senator Slade Gorton, long opposed to removal. The new Republican majority in the Senate made Gorton, the party's senior member on the committee, the chair of the Senate Interior Appropriations Committee, which controlled all funding for the Elwha project. Having obtained a more powerful seat at the table, Gorton raised new arguments against Elwha dam removal, suggesting that it would set a precedent clearing the path for removal of the hydropower dams on the Snake River. Gorton's tactics created further delays in obtaining dam removal funding.

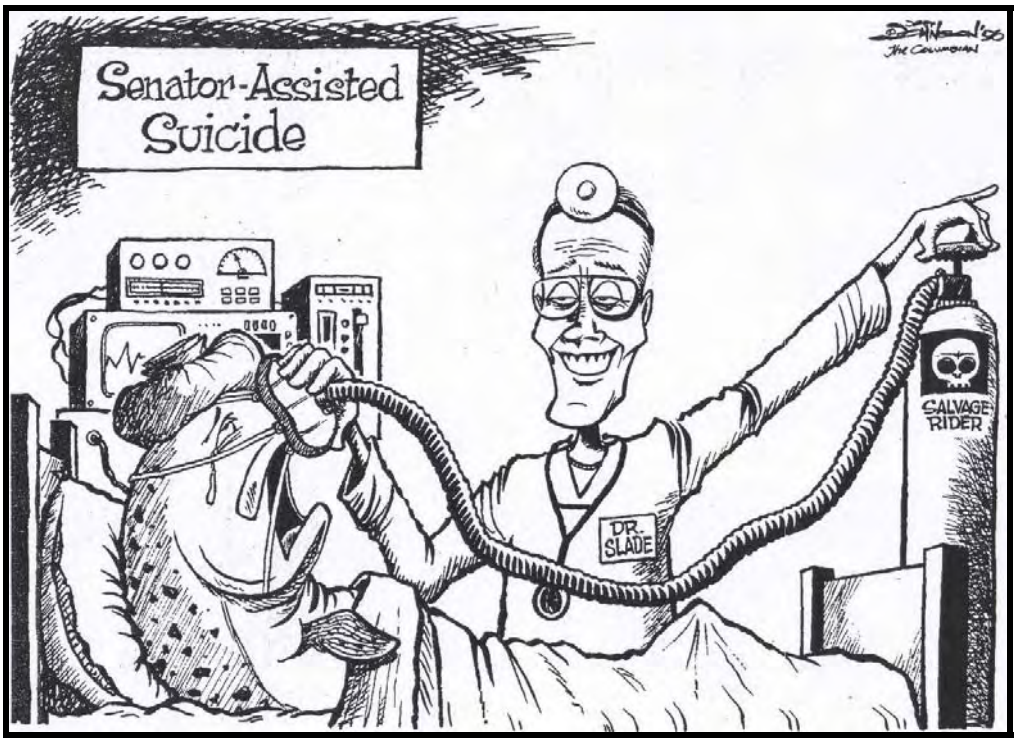

Figure 127. Editorial cartoon, from the *Columbian* (Vancouver, Wash.), March 20, 1996. [19960320_columbian.jpg]

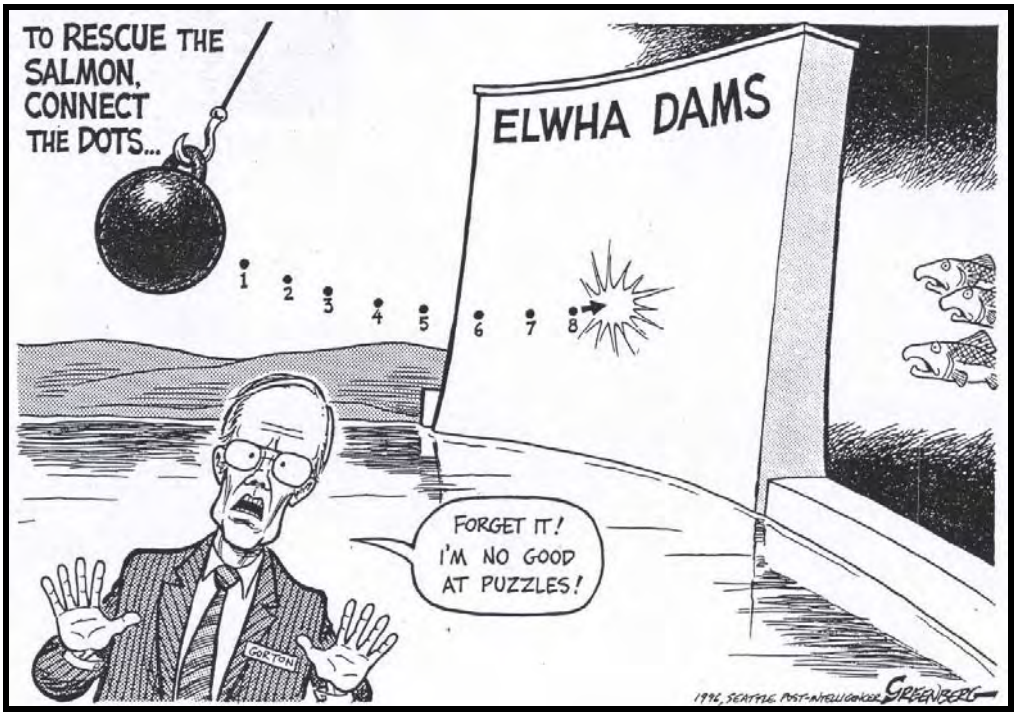

Figure 128. Editorial cartoon lampooning Washington Senator Slade Gorton, from the *Seattle Post-Intelligencer*, ca. 1996. [1996_seattlepi.jpg]

During this period, Secretary of the Interior Bruce Babbitt assumed a key role in sustaining the campaign to get the dams removed. Soon after President William Jefferson Clinton appointed him to the Interior post, Babbitt called Elwha dam removal one of the top priorities of the Clinton administration. On an August 1997 visit to the Elwha River dam sites, Babbitt proclaimed the valley a "wondrous place" and urged all parties to "reason together" and compromise if necessary, to restore the river and save the salmon runs.[89] Babbitt hoped that his long and respectful working relationship with Gorton would help bring the Interior Department and Congress into a satisfactory agreement on the Elwha Dams. But in October 1998, Gorton, claiming that the administration "made it clear to me . . . that they didn't want to work with me, that they wanted to be able to remove any Northwest dam they chose," killed the legislation for Elwha dam removal appropriations.[90]

[89] "Babbitt Ready to Deal on Elwha Dams," *Seattle Post-Intelligencer*, August 8, 1997.

[90] "Gorton Denies Elwha Funding," *Peninsula Daily News*, October 16, 1998.

Figure 129. Brian Winter, NPS fisheries biologist and Elwha Project Coordinator, on the bank of the Elwha River giving talk to a group of dignitaries that includes (from left to right) Congressman Norm Dicks, Secretary of the Interior Bruce Babbitt, ONP Superintendent David Morris, Lower Elwha Klallam Tribe Chair Frances Charles (back to the camera), and Congressman Jay Inslee, August 1997. Courtesy of Olympic National Park Archives. [allriver.jpg]

In the end, the Elwha process, like the river in its free-flowing days, took an unpredictable and dramatic change of course. An altered political landscape in Washington State swept Gorton out of office and helped clear the path to full funding of dam removal, river restoration, and a new city water system. With many of the previous hurdles out of the way, the NPS, Fort James Paper Company (successor of the James River Corporation), and Daishowa America met in early 1999 to negotiate the purchase of the two Elwha River dams at a cost of $29.5 million. A year later, the Department of the Interior completed the purchase of the dams. At the start of the new

millennium, the Elwha River had a new lease on life. In summer 2004, the NPS, the city of Port Angeles, and the Lower Elwha Klallam Tribe met to create a Memorandum of Understanding detailing each party's responsibilities for water mitigation facilities and fish restoration planning. The task of restoring the river would require cooperation between these three entities, and the Memorandum of Understanding helped set this process in motion.[91]

Figure 130. Restoration of the Elwha River ecosystem will benefit many different species. Fishers were reintroduced to the Olympic Peninsula in 2008, including several in the Elwha Valley. Photograph by John Jacobson. Courtesy of Olympic National Park. [Jacobson fisher photo.JPG]

After more than three decades of protests, debate, and negotiation, the NPS will begin removal of the Elwha dams in 2011.[92] For the Lower Elwha Klallam Tribe, the outcome of the

[91] "Olympic National Park, FY04 Superintendent's Report," 1, Folder: Superintendent's Annual Report 2004, Box Superintendent's Annual Report, OLYM-443, ONPA.

[92] As of this writing, the NPS would begin tearing down the dams in Fall 2011.

dam removal campaign has meant hope for a better future, as well as, "a great deal of pride in the fact that we've worked on it for so long and we are being successful."[93] For former and current staff at Olympic National Park and for environmental groups, the final decision gave them the satisfaction of "helping to restore a major ecosystem in a National Park."[94] In Port Angeles, the mill remains open while the building anticipation regarding dam removal has created more interest in the area. But many community members still have doubts or a wait-and-see attitude about the wisdom of tearing down the dams. Finally, for the river and salmon, dam removal means a chance at a new life.

[93] R. Elofson interview, 8.

[94] Finnerty interview, 6.

Figure 131. Artistic rendering showing Glines Canyon before (above) and after (below) dam removal. Courtesy of Olympic National Park. [glinestrans_edit.jpg]

Conclusion

Hydroelectric dams, with their massive concrete walls, giant turbines, and immense productive capacity, suggest power and permanence. This explains why a Port Angeles newspaper reporter could confidently proclaim, at the completion of the Elwha Dam in 1913, "there is no question but that the Elwha is harnessed at last and forever."[1] The remark speaks volumes about an era when most Americans believed that the nation's expanding technological prowess would eventually control and manipulate the natural world in order to suit the demands of society. Similarly, when Elwha homesteader Grant Humes watched the river water backing up behind the new Glines Canyon Dam in 1927, he spoke of, "landmarks of past years that are soon to disappear from view, forever."[2] Technological progress and the alteration of natural processes for power production seemed inevitable and enduring.

But progress can take many shapes. In the early twentieth century, residents and civic leaders in Port Angeles saw a bright future in Elwha River hydroelectric power that brought the city new industries, jobs, and significance in the regional economy. Progress meant a growing city with plentiful work and social opportunities. The two dams powered the growth of the pulp and paper industry that remained the city's primary employer for more than 80 years. But with the dams came enormous costs. The Elwha Klallam people saw some of their homes destroyed, their sacred sites flooded, and their economic livelihood virtually wiped out. Because the dams blocked salmon and steelhead from reaching their upstream spawning grounds, fewer fish

[1] "Elwha Harnessed for the Last Time," *Port Angeles Olympic-Leader*, November 7, 1913.

[2] Grant Humes to Will Humes, April 19, 1927, Folder 59: Humes Correspondence, Box 1, Johnson Elwha Sources, ONPA.

returned to the Elwha each year and some runs died out completely. The Elwha Klallam and others who depended on the Elwha fisheries for work or to put food on the table experienced the costs inherent to the new technology.

In 1913, Port Angeles news reporters and their readers could not imagine that just a century later the river would again flow freely. During the course of those one hundred years, the balance of power and the definition of progress had gradually shifted. Greater scientific understanding of ecosystems, growing public and political emphasis on protecting threatened species and their habitat, and the realities of a swiftly changing regional economy led many people to revise their thinking about the benefits and costs of the Elwha dams. By the late twentieth century, progress still meant creating jobs, encouraging civic growth, and fostering healthy lives on the Olympic Peninsula. But progress also entailed sustaining healthy natural systems, restoring salmon runs, and returning to the Elwha Klallam some of their traditional lands and legal rights. Entering the twenty-first century, dam removal and Elwha River restoration were about to become the cutting edge of scientific progress.

"Big" will certainly be the adjective most frequently associated with the Elwha Dam removal and river restoration. As this book went to press in 2011, the Elwha project was about to become the biggest dam removal venture in the nation's history. The work to prepare, deconstruct, and haul away the dams and the operations involved in the restoration—a total of more than 40 major NPS projects—will also make the Elwha River endeavor one of, if not the, biggest construction project in the history of the national parks.[3]

[3] Olympic National Park, "Elwha River Restoration: Natural Wonders Never Cease," *NPS Digest*, December 10, 2010, http://home.nps.gov/applications/digest/headline.cfm?type=Announcements&id=9897.

Figure 132. NPS scientist Dr. Jerry Freilich and volunteer backcountry ranger Dr. Dick Vancalcar take a sample of the macroinvertebrate community that dwells in the bottom of the Elwha River, 2006. Photograph by Vicki Vancalcar. Courtesy of Jeff Duda, USGS. [Duda_photo1.JPG]

The numbers and statistics regarding Elwha Dam removal are big as well. Researchers are suggesting that the river restoration has the potential to increase salmon populations from the current level of approximately 3,000 fish per year to as many as 400,000 salmon swimming up the Elwha River annually. Meanwhile, scientists see the Elwha project as one of the biggest opportunities they will ever have to study the possibilities and problems involved in restoring an entire ecosystem. An Olympic National Park botanist sees the coming dam removal as a giant classroom in which to study natural and human-aided revegetation of the areas that were inundated. He remarked, “This is the first time anyone’s tried anything like this. The scale is

unprecedented."[4] Similarly, a USFS hydrologist explained that he could not think of any other river experiment on the scale of the Elwha Dam removal project, which was going to become "a natural laboratory unlike any other."[5]

Scientists began their preparation work for dam removal far in advance of any pre-construction tasks. In order to determine the impact dam removal has on the Elwha River ecosystem, researchers had to first measure the status of the river's biologic populations and levels of water flows and sediment transport as they existed prior to dam removal. Scientists from numerous federal, state, and local organizations—including the Lower Elwha Klallam Tribe—conducted surveys and collected samples of the existing biologic organisms and hydrologic patterns in the Elwha River, Clearwater Bay, and Strait of Juan de Fuca. Their data and findings established a baseline of the pre-removal environmental conditions in the Elwha area.[6] When dam removal begins, researchers will be able to measure the changes against the baseline information. Most experts considered this research opportunity an essential aspect of the entire dam removal project. As one scientist put it, the government has the responsibility to show whether dam removal is producing the changes many expect the process to provide. Because Elwha River Restoration will be larger than any other environmental recovery effort of this type, it will be essential to show whether the project worked. If restoration of the Elwha River ecosystem and salmon runs is deemed successful, the Elwha project will become the template for future restoration work in other watersheds. However, scientists involved in the project also point out, "if salmon restoration is unsuccessful under these conditions, the implication for all

[4] "Elwha River's Coming Dam Removal Has Scientists Flooded with Unknowns," *Seattle Times*, July 30, 2010.

[5] "Elwha River's Coming Dam Removal Has Scientists Flooded with Unknowns."

[6] For a summary of pre-dam removal scientific research, see Jeffrey J. Duda, Jerry E. Freilich, and Edward G. Schreiner, "Baseline Studies in the Elwha River Ecosystem Prior to Dam Removal: Introduction to the Special Issue," *Northwest Science* 82 (Special Issue, 2008): 1-12.

other Pacific Northwest rivers are dire."[7] The research that began as a much as a decade ago and that will continue several decades hence should provide the answers to that question in all its complexity.

Figure 133. Fisheries staff from the Lower Elwha Klallam Tribe and students from Peninsula College in Port Angeles deploy a seine net in the Elwha River estuary as part of a juvenile salmon study, 2006. Photograph by Pat Shafroth. Courtesy of Jeff Duda, USGS. [Duda_photo4.JPG]

Despite the importance of scientific research to the project outcomes, the Elwha River Restoration Act did not provide funding for this type of survey and collection work now underway. To compensate for the lack of central funding source, scientists of various agencies

[7] Elwha Research Consortium [ERC], "Elwha Research Consortium: Facilitating and Supporting Elwha Ecosystem Research," *Elwha Watershed Information Resource*, http://www.elwhainfo.org/research-and-science/elwha-research-consortium.

came together in a grass-roots effort to form the Elwha Research Consortium (ERC), described as "a strategic partnership between governmental agencies, research educational institutions, and community groups focused on understanding the social and ecological effects of dam removal and restoration activities in the Elwha River watershed."[8] The Consortium's first important step was obtaining more than $1 million in research grants from the National Science Foundation, enabling them to implement many of their studies. But the group's mission goes beyond the important research tasks. The ERC's "long-term program of research and education" includes sharing their information and findings with educators, community members, environmental organizations, Elwha Klallam tribal members, and area legislators.[9] They also plan to create environmental education and community outreach programs that can be implemented in the school system and through organizations such as Olympic Park Institute.

[8] Quote from ERC, "Elwha Research Consortium: Facilitating and Supporting Elwha Ecosystem Research." Description of ERC creation from Jeff Duda, USGS Western Fisheries Research Center, Seattle, Washington, personal communication with authors, December 21, 2010.

[9] ERC, "Elwha Research Consortium: Facilitating and Supporting Elwha Ecosystem Research."

Figure 134. Aerial photograph of the sediment-built delta behind the Glines Canyon Dam on Lake Mills. Image taken just following completion of the first pre-removal construction tasks—carving a channel through the delta and the removal of the glade of alder trees covering it—at the dam site. September 2010. Photograph by Tom Roorda. Courtesy of Tom Roorda, NTI. [Roorda_IMG_5242.JPG]

In the eyes of the current news media and much of the general public, the big event on the Elwha River will be the demolition of the dams. Dam removal work will draw an audience to the Elwha and in the national news media. To the casual observer, the visual drama of seeing the dams disappear may obscure many of the complex stories that have already transpired and will continue to unfold in the Elwha Valley. It might be hard for some to see beyond the construction dust and surging river that more than three decades of often-contentious debate—engaging the attention of local, regional, and national organizations—went into making the dam removal decision. But the history of the Elwha River, the Elwha Valley, and the human communities connected to them is much more complex than any single event—even an event as dramatic as demolishing a dam—can represent.

When the dams come out in 2011-2012, the demolition work will mark the end of more than four decades of struggle, debate, and study aiming at restoring the river and the salmon runs. At the outset, the Elwha dams and power plants were simply a means to an end. The power companies, cities, and investors involved in building the dams wanted personal financial gain, regional industrial growth, local job creation, civic recognition, and other benefits from the Elwha power projects. Likewise, Elwha dam removal is not an end in itself. It is a means to begin restoration of a river ecosystem, reestablishment of threatened anadromous fish species, and return of certain tribal rights and claims. Dam removal may seem to be the end of one story, but it is really just the beginning of another. A new lease on life for salmon and steelhead, a new window for scientists to study ecological restoration on a giant scale, and a return to beginnings for the Elwha Klallam people, who will see their creation site and former village sites re-emerge from the reservoir silt and their livelihoods once based on salmon fishing restored to them.

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Winds of Change.

Appendix A
Catalogue of Photographs and Graphics Used in this Manuscript

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Fig.	Description	Owner	Location	Ref. No.	FileName	Rights
1	Map of the Elwha River Watershed	ONP	ONP	n.a	ElwhaWatershed_cropped.jpg	Yes
2	Aerial view of (top to bottom) Lake Mills, Glines Canyon Dam and power plant, and the Elwha River, n.d.	ONP	ONP		HHWA130B1-1.jpg	Yes
3	Construction workers hanging from a revolving crane in the early phase of building Glines Canyon Dam, ca. 1926-1927	CCHS	CCHS	2010.200.086	201020086.jpg	No
4	Elwha River	ONP	ONP		elwha_21.jpg	Yes
5	Map showing the mouth of the Elwha River, Freshwater Bay, and the location of the Elwha Klallam village, 1908	ONP	ONP		t2858.tif	Yes
6	Fragment of an almost 3,000-year-old basket, found by visitors to Olympic National Park, n.d.	ONP	ONP		10.20a.BasketFrag.jpg	Yes
7	Example of a culturally modified tree.	HRA	HRA	n/a	HRA_DSCN0766.jpg	Yes
8	Hand-colored postcard depicting the Elwha Canyon, prior to dam construction.	ONP	ONP		POL002055.jpg	Yes
9	Underwater view of swimming salmon.	ONP	ONP		SalmonUnderWater.jpg	Yes
10	Salmon eggs in stream gravel.	ONP	ONP		SalmonEggsinGravel.jpg	Yes
11	Hand-colored image of black and white photograph showing Glines Canyon and footbridge across Elwha River prior to dam construction, ca. 1900.	ONP	ONP		elwha_07.jpg	Yes
12	Patent certificate granted to Marcellus Huntoon, June 5, 1873.	NARA		not applicable		??
13	Humes Ranch, 1918.	ONP	Lyman R. Humes Collection, ONP		OLYM1098.jpg	Yes
14	Dodger and Norma Bender in front of their home.	Alice Alexander	Alice Alexander	n/a	krouse 003.jpg	Yes
15	"Doc" A. Ludden's Geyser Apiary Co. in the Elwha Valley, ca. 1914.	NOLS	NOLS	ELWA BLDX 027	ELWA BLDX - 027.jpg	Yes
16	Elwha Valley homesteaders Will Humes, Orlin Burdick, and Grant Humes at the Humes Ranch cabin, 1905.	ONP	Gerry Humes Collection, ONP		Humes1905-2.jpg	Yes
17	Humes Ranch Cabin, interior, n.d.	CCHS	CCHS	CCHS PP# 988.64.24	On order	yes?
18	Hunter John homesteaded on the Elwha River in 1880, photo ca. 1915. Kennet Photo	Beatrice Charles	Jacilee Wray, electronic files.	n/a	1915 Homestead..sharper.jpg	Yes
19	Interior view of cannery.	NOLS	NOLS	PTAN BLDN 015	PTAN BLDN - 015.jpg	Yes
20	First swimming pool at Olympic Hot Springs, prior to construction of a concrete pool, ca. 1910.	NOLS	NOLS	ELWA ACTV 001	ELWA ACTV - 001.jpg	Yes
21	Bridge across the Elwha River, prior to 1910.	ONP	ONP		Image32.jpg	Yes
22	Map of Port Angeles, showing locations of Ediz Hook, platted downtown area, Puget Sound Cooperative Colony, and the Elwha River (far left), 1891.	NOLS	NOLS	n/a	SNV30001.jpg	Yes
23	Unidentified tribal members camped on Hollywood Beach at the foot of Lincoln Street, ca. 1900.	NOLS	NOLS	INDN ACTV 002	INDN ACTV - 002.jpg	Yes
24	Front Street, looking to the north, ca. 1888.	NOLS	NOLS	PTAN BLDX 064	PTAN BLDX - 064.jpg	Yes
25	Front Street, looking to the north, ca. 1889.	NOLS	NOLS	PTAN BLDX 053	PTAN BLDX - 053.jpg	Yes

Ref. No. = PastPerfect reference number, negative number, image number, and other identifiers given to image by repository

Fig.	Description	Owner	Location	Ref. No.	FileName	Rights
26	Front Street, looking to the northwest, ca. 1890.	NOLS	NOLS	PTAN BLDX 008	PTAN BLDX - 008.jpg	Yes
27	View from harbor looking south to Port Angeles waterfront, showing piers and buildings along Front Street, ca. 1893.	ONP	OLYM-632, Box 3, Folder Port Angeles History		Rotation of PA_BayView1903.tif	Yes
28	The Port Angeles business district, looking east down Valley Street, in 1891.	NOLS	NOLS	PTAN BLDX 011	PTAN BLDX -- 011.jpg	Yes
29	Panoramic view of Port Angeles after the Townsite Reserve was opened, 1897.	NOLS	NOLS	PTAN VIEW 008	PTAN VIEW - 008.jpg	Yes
30	Interior view of the first electric light plant in Port Angeles, located on Cherry Hill.	NOLS	NOLS	PTAN BLDN 002	PTAN BLDN - 002.jpg	Yes
31	Decorated car participating in a Sequim, Washington, parade, 1910.	ONP	OLYM-632, Box 3, Folder History of Clallam Co.		Sequim1910.tif	Yes
32	Elwha Dam in the earliest stages of construction, ca. 1910.	ONP	ONP		HHWA130A34-1.jpg	Yes
33	Elwha Dam construction, ca. 1910-1911.	ONP	ONP		Image40.jpg	Yes
34	Elwha Dam construction, ca. 1910-1911.	ONP	ONP		Image43.jpg	Yes
35	Early stages of construction of the Elwha Dam spillway and powerhouse, looking upstream, ca. 1911.	CCHS	CCHS	2010.200.145	2010200145.jpg	No
36	Construction of the powerhouse at the Elwha Dam, ca. 1910-11.	CCHS	CCHS	2010.200.147	2010200147.jpg	No
37	Scaffolding and unstable hillside during early phase of Elwha Dam construction.	CCHS	CCHS	2010.200.064	201020064.jpg	No
38	"Fatal Accident at Elwha Power Plant." Newspaper headline from the *Port Angeles Tribune Times* , March 8, 1912.	n/a	n/a	n/a	19120308_tribtimes.jpg	n/a
39	Elwha Dam construction, ca. 1910-1911.	ONP	ONP		Image36.jpg	Yes
40	Workers at Glines Canyon Dam, ca. 1926-1927.	ONP	OLYM-437, Box 1, Folder 7, Glines & Lower Elwha Dams		HAER_OLYM437_Olive r4.tif	Yes
41	Scaffolding at the nearly complete Glines Canyon Dam, ca. 1927.	CCHS	CCHS	2010.200.082	201020082.jpg	No
42	Historic American Engineering Record sketch of Elwha River Hydroelectric System, 1910-1927. HAER Drawing WA-130.	ONP	OLYM-437, Box 3, Elwha & Glines Dams HABS/HAER Archive Files, Folder HAER Drawings		HAER_OLYM437_Syst emsketch.tif	Yes
43	Elwha Dam powerhouse, showing damage from the 1912 foundation blowout.	ONP	ONP		Elwha Powerhouse after 1912.jpg	Yes
44	Engineering drawing of the Elwha Dam.	ONP	ONP		Elwha plan.jpg	Yes
45	Lake Aldwell, behind the Elwha Dam, August 1946.	CCHS	CCHS	2010.200.041	201020041.jpg	No
46	"River de Front," Front Street in Port Angeles under water during regrade sluicing operations, June 1914.	ONP	ONP		Rotation of PA_RiverdeFront.tif	Yes
47	Dedication of the Clallam County Courthouse, located at Fourth and Lincoln Streets in Port Angeles, June 14, 1915.	NOLS	NOLS	PTAN BLDX 090	PTAN BLDX - 090.jpg	Yes
48	First passenger train to leave Port Angeles, July 21, 1914	ONP	ONP		PA_1stPassengerTrain. tif	Yes
49	Laurel Street, looking north, 1916.	NOLS	NOLS	PTAN BLDX 025	PTAN BLDX - 025.jpg	Yes
50	Jack Pike, on the left, and unknown companion by cedar tree along Elwha River, 1930.	ONP	ONP		FIS004001.jpg	Yes
51	The Puget Sound Co-operative Colony's lumber mill at the north end of Chambers Street, 1888.	NOLS	NOLS	CLNY MILL 002	CLNY MILL - 002.jpg	Yes

Ref. No. = PastPerfect reference number, negative number, image number, and other identifiers given to image by repository

Fig.	Description	Owner	Location	Ref. No.	FileName	Rights
52	Filion Lumber Mill and men outside the mill during building construction, Port Angeles, 1893.	NOLS	NOLS	LOGG MILL 002	loggmill--2.jpg	Yes
53	Earles' Mill, also known as the "Big Mill," ca. 1914.	ONP	OLYM-632, Box 3, Folder Port Angeles History		Rotation of HAER_OLYM437_HistoricMill0001.tif	Yes
54	The U.S. Spruce Corporation Mill, located at the motuh of Ennis Creek, ca. 1918.	NOLS	NOLS	PTAN MILL 002	PTAN MILL - 002.jpg	Yes
55	Construction of Washington Pulp and Paper Company mill, August 7, 1920.	ONP	ONP		PA_WAPulp_construc1920-rotatedcropped.tif	Yes
56	Aerial view of the Elwha Dam, showing power plant annex, 1922	ONP	ONP		Walsh#8.jpg	Yes
57	Interior of the Elwha Dam power plant, showing the no. 3 generator, ca. 1922.	ONP	OLYM-437, Box 1, Folder 23, Photographs Rod Slemmons		HAER_OLYM437_LewisWP&P2.tif	Yes
58	Thomas Aldwell and other company and city leaders at Glines Canyon Dam construction site. Aldwell is the fourth from the left, wearing long overcoat, ca. 1926.	ONP	OLYM-437, Box 1, Folder 23, Photographs Rod Slemmons		HAER_OLYM437_LewisWP&P4.tif	Yes
59	Engineering drawing of Glines Canyon Dam.	ONP	ONP		Glines plan.jpg	Yes
60	Crew digging bypass tunnel at Glines Canyon Dam, ca. 1926-1927.	ONP	OLYM-437, Box 1, Folder 7, Glines & Lower Elwha Dams		HAER_OLYM437_Oliver1.tif	Yes
61	Construction of intake at Glines Canyon Dam, ca. 1926-1927.	ONP	OLYM-437, Box 1, Folder Historic Photos		HAER_OLYM437_SlemmonsElwha1.tif	Yes
62	Diversion tunnel at Glines Canyon Dam, June 15, [1927].	CCHS	CCHS	2010.200.135	2010200135.jpg	No
63	Construction of a cofferdam at Glines Canyon Dam, ca. 1926-1927.	CCHS	CCHS	2010.200.089	201020089.jpg	No
64	Glines Canyon Dam bunk houses, ca. 1926-1927.	CCHS	CCHS	2010.200.144	2010200144-2.jpg	No
65	Cooks for work crews at Glines Canyon Dam, ca. 1926-1927.	ONP	ONP		NPSElwha_Glines1.tif	Yes
66	Cement chute at Glines Canyon Dam, ca. 1926-1927.	CCHS	CCHS	2010.200.059	201020059.jpg	No
67	Workers at Glines Canyon Dam, ca. 1926-1927.	ONP	OLYM-437, Box 1, Folder 7, Glines & Lower Elwha Dams		HAER_OLYM437_Oliver3.tif	Yes
68	Overview of near complete Glines Canyon Dam, showing (left to right) upper portion of dam structure, water pouring from spillway, surge tank, section of penstock, and power plant, ca. 1927.	ONP	ONP		Glines May 24 1927-1.jpg	Yes
69	Air compressors at Glines Canyon Dam, ca. 1926-1927.	CCHS	CCHS	2010.200.070	201020070.jpg	No
70	The Elwha River, June 1926.	ONP	ONP		3137_210059.jpg	Yes
71	Papermaking machine inside Washington Pulp and Paper Company's mill, ca. 1923.	UW	University of Washington Libraries, Special Collections Division, Asahel Curtis Photo Co. Collection	PH Coll 482, CUR1477	CUR1477.jpg	No
72	Washington Pulp and Paper Company mill, September 29, 1923.	NOLS	NOLS	PTAN MILL 063	PTAN MILL - 063.jpg	Yes
73	Crown Zellerbach baseball team photo, n.d.	CCHS	CCHS	CCHS PP# 986.86.98	On order	Yes?
74	Port Angeles Salmon Club headquarters, 1937.	NOLS	NOLS	PTAN ACTV 021	PTAN ACTV - 021.jpg	Yes
75	Salmon Derby Clubhouse on Ediz Hook, ca. 1940.	NOLS	NOLS	PTAN ACTV 024	PTAN ACTV -- 024.jpg	Yes

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Fig.	Description	Owner	Location	Ref. No.	FileName	Rights
76	Boats in Port Angeles harbor, n.d.	ONP	ONP		FishingFleet.jpg	Yes
77	Group of children at Elwha Forest Camp, July 1938.	ONP	ONP		REC079.jpg	Yes
78	Pioneer picnic, 1962	NOLS	NOLS	PTAN ACTV 031	PTAN ACTV - 031.jpg	Yes
79	Dick Goin's wife, Marie Goin, holding a 44-pound salmon caught in Freshwater Bay, 1960s.	Dick Goin	Dick Goin	n/a	Goin7.tif	Yes
80	Taken near the Elwha Ranger Station, USFS photoJune 1926	ONP	ONP		REC085.JPG	Yes
81	Old Elwha Ranger Station, n.d.	ONP	ONP		3001.jpg	Yes
82	Jim Byrne, ranger in the Olympic National Park on the Elwha in the 1930s and 1940s.	Bernie Byrne	Bernie Byrne	n/a	Byrne_JB.jpg	Yes
83	Fishing in the Elwha River, July 1936.	ONP	ONP		REC090.jpg	Yes
84	Dick Goin and his son holding 53 lb. fish, and two smaller fish caught in Freshwater Bay, 1963.	Dick Goin	Dick Goin	n/a	Goin8.tif	Yes
85	Barracks at Camp Elwha CCC camp.	Bernie Byrne	Bernie Byrne	BYR001.076	Byrne_Elwha CC Camp.jpg	Yes
86	Clearing for Highway 101, along the southern edge of Lake Crescent.	ONP	ONP		3205_Highway clearing about one-half mile west of Singer's La.jpg	Yes
87	Elwha Resort Service Station and members of the Ormbreck family, ca. 1929.	ONP	ONP		Elwha ResortG.tif	Yes
88	Map of loop highway around the Olympic Peninsula.	UW	University of Washington Libraries, Special Collections	PAM0044	OlympicLoopMap.jpg	No
89	Thelma and Gudrum, pictured here, were nieces of John Ormbreck, owner of the Elwha Resort, 1924.	ONP	OLYM-500, Elwha Resort Documentation, Folder Elwha Resort Photographs		ElwhaResort_OLYM500_girls.tif	Yes
90	Local residents in a Ford automobile in the Elwha Valley, n.d.	NOLS	NOLS	ELWA VEHC 001	ELWA VEHC - 001.jpg	Yes
91	Elwha River sign, 1950.	ONP	ONP		OLYM344783095.jpg	Yes
92	Advertisement for Olympic Hot Springs in the upper Elwha Valley.	ONP	ONP		CAH002001.jpg	Yes
93	Olympic Hot Springs lodge.	NOLS	NOLS	ELWA BLDX 001	ELWA BLDX -- 001.jpg	Yes
94	Olympic Hot Springs swimming pool.	NOLS	NOLS	ELWA BLDX 002	ELWA BLDX -- 002.jpg	Yes
95	Olympic Hot Springs brochure cover.	UW	University of Washington Libraries, Special Collections	PAM0042		No
96	Camp DYB, "A Real Camp for Real Boys," pamphlet cover.	NARA	National Archives and Records Administration-Pacific Alaska Region, Seattle, Wash.	not applicable	RG 75, Camp DYB, image 1.jpg	Yes
97	Aerial view of Camp DYB campus, ca. 1924.	NARA	National Archives and Records Administration-Pacific Alaska Region, Seattle, Wash.	not applicable	RG 75, Camp DYB, image 2-rotated and cropped.jpg	Yes
98	Lighthouse on Ediz Hook.	ONP	OLYM-632, Box 3, Folder Port Angeles History		PA_EdizHookLight.tif	Yes
99	Aerial view of Port Angeles, looking south, 1960.	NOLS	NOLS	PTAN VIEW 012	PTAN VIEW - 012.jpg	Yes
100	Nippon Paper (former Crown Zellerbach/James River) mill in Port Angeles, n.d.	ONP	ONP		10Elwha_Dori.34 of -32.jpg	Yes

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Fig.	Description	Owner	Location	Ref. No.	FileName	Rights
101	Port Angeles Chamber of Commerce promotional brochure, ca. 1960.	UW	University of Washington Libraries, Special Collections	UW29171	UW29171z.tif	No
102	*Port Angeles Vacationland* brochune, 1961.	UW	University of Washington Libraries, Special Collections	UW29157	UW29157z.tif	No
103	Salmon Derby activities on Ediz Hook, ca. 1970.	NOLS	NOLS	PTAN ACTV 026	PTAN ACTV - 026.jpg	Yes
104	Bluffs and Lower Elwha Klallam Reservation at the mouth of the Elwha River, n.d.	ONP	ONP		Elwha_mouth2Lundahl.jpg	Yes
105	High water flow at the Elwha Dam, n.d.	ONP	ONP		highwaterlwr.jpg	Yes
106	Face of the Glines Canyon Dam, 1995.	ONP	ONP		HHWA130B8-1.jpg	Yes
107	"Dam can't hold back removal talks." Newspaper headline from the *Peninsula Daily News* , August 10, 1990.	n/a	n/a	n/a	19900810_pdn.jpg	n/a
108	Powerhouse control room, Elwha Dam, n.d.	ONP	ONP		DSCN2494.jpg	Yes
109	Control panels at the Elwha Dam, 2005.	ONP	ONP		Elwha Dam Control Panels.jpg	Yes
110	Generators at the Elwha Dam, 2005.	ONP	ONP		Elwha Dam Generator Equipment.jpg	Yes
111	Jamie Valadez talking to teachers at the Elwha River, July 2005.	ONP	ONP		J.Valadez talking to teachers at Elwha 7.05 bcarlsonphoto.jpg	Yes
112	Bald eagles feed extensively on dying salmon and steelhead during the spawning runs, n.d.	ONP	ONP		eagle02 copy Scott Church.jpg	Yes
113	"Unknown Earth First! artist paints 'crack' on Elwha Dam." Newspaper headline from the Peninsula Daily News, September 3, 1987.	n/a	n/a	n/a	19870903_pdn.jpg	n/a
114	Drawing of anadromous fish species formerly found in the Elwha River, with map showing their potential habitat after restoration of river is completed.	ONP	ONP		fish_maps_composite.jpg	Yes
115	The mouth of the Elwha River, 1994.	ONP	ONP		Elwhamouth1994DOECL A0241_mr[1].jpg	Yes
116	Ediz Hook, with Nippon Mill at bottom of picture, n.d.	ONP	ONP		EdizHook.jpg	Yes
117	Elwha Klallam tribal members Bea Charles and Adeline Smith, with the Elwha River in the background, n.d.	Jacilee Wray	Jacilee Wray	n/a	Bea and AdelineImage26.jpg	Yes
118	Representative Al Swift on a trip to Olympic National Park in 1985.	WWU	Al Swift Congressional Papers, Center for Pacific Northwest Studies, Western Washington University	Not applicable	234.3 Olympic Nat'l Park citation.tif	No
119	Aerial photograph of the lower portion and mouth of the Elwha River, location of the Elwha Klallam Reservation, 1994.	Dick Goin	Dick Goin	n/a	Goin11-rotatedandcropped.tif	Yes
120	Newspaper headline from the *Daily World* (Aberdeen), August 16, 1990.	n/a	n/a	n/a	19900816_aberdeendailyworld.jpg	n/a
121	Lake Mills, above the Glines Canyon Dam, May 25, 2005.	ONP	ONP		Elwha May 25,2005 NPS.jpg	Yes
121	Lake Aldwell, above the Elwha Dam, n.d.	ONP	ONP		8Elwha_Betsy.46 of -27.jpg	Yes
123	"U.S. report puts dams closer to razers' edge. Newspaper headline from the *Seattle Times* , March 30, 1990.	n/a	n/a	n/a	19900330_seattletimes.jpg	n/a

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124	Map showing the historic runs of Chinook salmon up the Elwha River.	ONP	ONP		ChartRestoredChinook.jpg	Yes
125	Bull trout, n.d.	ONP	ONP		bulltrout.jpg	Yes
126	Upper Elwha River watershed, in Olympic National Park, above Glines Canyon Dam, n.d.	ONP	ONP		upper_watershed.jpg	Yes
127	Editorial cartoon, from the *Columbian* (Vancouver, Wash.), March 20, 1996.	n/a	n/a	n/a	19960320_columbian.jpg	n/a
128	Editorial cartoon lampooning Washington Senator Slade Gorton, from the *Seattle Post-Intelligencer* , ca. 1996.	n/a	n/a	n/a	1996_seattlepi.jpg	n/a
129	Brian Winter, NPS fisheries biologist and Elwha Project Coordinator, on the bank of the Elwha River giving talk to a group of dignitaries that includes Secretary of the Interior Bruce Babbitt (in middle of group with blue jacket), ONP officials, and Elwha Klallam tribal members, August 1997.	ONP	ONP		allriver.jpg	Yes
130	Restoration of the Elwha River ecosystem will benefit many different species. Fishers were reintroduced to the Olympic Peninsula in 2008, including several in the Elwha Valley.	ONP	ONP		Jacobson fisher photo.jpg	Yes
131	Glines Canyon before and after images.	ONP	ONP	n/a	glinestrans_edit.jpg	Yes

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