Ancestral Roots and Changing Landscapes: The Impact of Seattle's Development on the Salish People of Central Puget Sound[1]

By
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"No great city on the American continent has overcome so many natural obstacles encountered in its growth." Clarence Bagley

Abstract

Since the dawn of the Industrial Revolution, industrial societies throughout the world have marginalized and eventually overtaken aboriginal cultures that had lived for centuries, in many cases thousands of years on the land being developed. Still today in the name of industrial progress landscape alterations like logging and the damming of rivers encroach on the few aboriginal societies left in the world. Over a century and a half ago indigenous cultures of the Puget Sound region of the Pacific Northwest were overwhelmed by the forces of urbanization and industrialization. This case describes the landscape changes made to build the City of Seattle, the impact those changes had on the original inhabitants, and what might now be done for the original inhabitants to live within this radically altered landscape.

Section I

Centuries before the arrival of Euro-American settlers the Coast Salish People (Salish) that resided in the Central Puget Sound Lowlands lived in a land rich with natural resources. This land, now Seattle and the surrounding area, helped define the Salish by giving them all they needed for survival (Figure 1).

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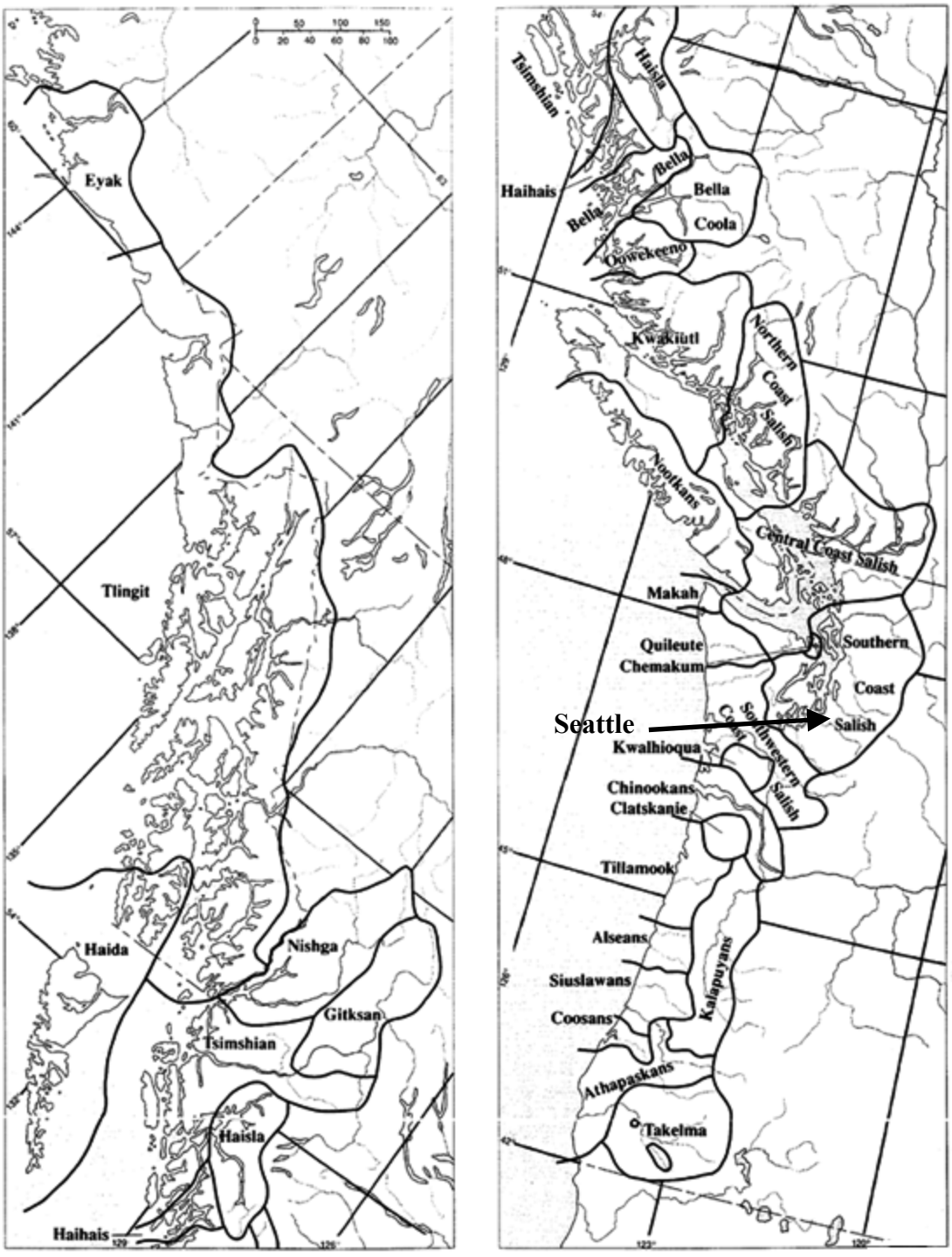

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Figure 1. Location of Southern Coast Salish in Relation to Seattle. **(University of Washington Digital Images Library)**

Their direct connection to their environment played an important role in molding their cultural identity. Experiences with their environment were paramount to the mythology,

spirituality, territorial definitions, inter and intra community relations, and their economic and social structures.. Abundant resources allowed them to achieve economic stability through environmental sustainability. This sustainability was possible because of a local emphasis on communities and beliefs that were governed by their dependence upon and connection to the environment (Tohm, 2005).

For the Salish, inanimate and animate objects in the environment had a spirit. The spirits of their natural surroundings provided important guidance. There were spirits for everyday work like basket making and spirits that helped in hunting. Warrior spirits like Grizzly helped in battle and the spirits of Otter helped provide cures.

This view of the environment as a living force that gave life was counter to the Euro-American notion of the environment. Western land use perspectives rooted in exclusive property rights and jurisdiction over the resources contained within these defined and allocated boundaries were at odds with Salish cultural traditions. This difference in perspective of the natural environment can be heard in the following excerpt from the early explorer and author Theodore Winthrop (1853) as he made his way up the White River Valley describing the pristine mature Pacific Northwest forest he encountered

> Riding steadily on I found no thinning of this mighty array, no change in the monotony of this monstrous vegetation……It grew somewhat dreary to follow down the vistas of this ungentle woodland, passing forever between rows of rough-hewn pillars, never penetrating to any shrine where sunshine entered and dwelt.... (Winthrop, 1863)

No matter that indigenous people were already living on and with the land, the Western practice of objectifying the wilderness as empty, unused, inhospitable space that needed to be tamed eventually created a landscape that no longer supported the cultural and economic needs of the original inhabitants. The settlers' land was a surface to be parceled up and appropriated in surveyed fenced in areas, with renewable resources of animals and timber therein (Figure 2) (Tohm, 2005).

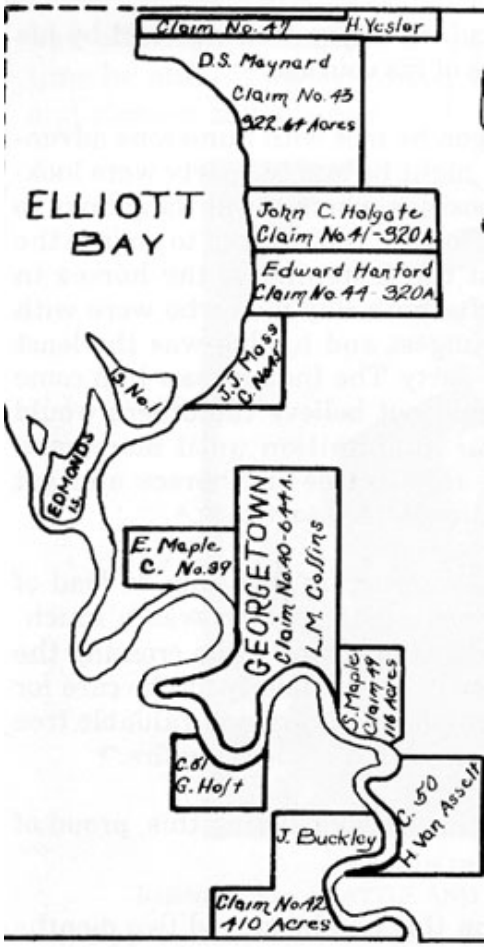

Figure 2. Original plat of Seattle properties 1856. (University of Washington Digital Images Library)

This view of the environment set the stage for how the land around the area that is now Seattle and the aboriginal people's dependence upon it would change over the next hundred plus years.

For thousands of years the Salish lived in an environment that supported their needs. In a natural state, this environment consisted primarily of dense hemlock and fir forests which covered most of the Puget Sound landscape. From the Puget Lowlands, to the eastern slopes of the southern Washington Cascades the regional landscape was dominated by mature, wet forest conditions. Living directly within these mature northwest maritime forests would have been difficult. However, the low production of these mature forests was made up for by the presence of salmon bearing rivers and streams that snaked their way through the forest. The watershed these streams and rivers created provided enough nutrients to sustain all the human use at the time. As a result of the ecology of the archaic landscape, the shorelines of local rivers, estuaries and coastlines of Puget Sound were the primary dwelling areas of the Salish. Salmon and shellfish were a substantial part of their diet and the environmental condition of the rivers, streams and estuaries were paramount to the survival of the Salish way of life.

Early European Settlements

The doors opened for European settlement in Puget Sound in 1792 when British explorer George Vancouver sailed into the inland seas of Puget Sound mapping and naming many of the islands and inlets. The establishment of forts and fur trading outposts dominated the European activity over the next several decades. These newcomers to the Puget Sound Lowlands began the series of what would be unending challenges for early nineteenth-century Salish.

These challenges were further exacerbated in the 1850s as American settlers poured into Puget Sound country and put new pressures on Salish communities. In 1851 the first settlers arrived at Alki Point, what is now West Seattle. At this time, the density of Salish people in the area was high. The waterfront of Elliott Bay and the Duwamish was home to at least 100 longhouses in over twenty villages. Immediately the new inhabitants in the Seattle area began to petition the Federal government to establish treaties with the Salish that would allow these settlers to gain title to the land they were now living on (Binns, 1941),.

Beginning in 1855, Washington Territorial Governor Isaac Stevens started negotiating treaties with the Salish people. With the best of intentions, Chief Seattle along with many other Salish leaders, signed the Treaty of Point Elliott. The treaties, however, often covered a wider section of the Salish population than intended by the Native leaders who signed them. The Salish culture delineated land via family lineage which defined resource areas from which villages were centered. Salish leaders were responsible for governing within villages as opposed to Tribes that covered large areas. This misunderstanding about who was beholden to the treaties created mistrust and conflict between the Salish and the settlers.

Removal and Relocation

In 1865 the city of Seattle was incorporated. Concurrently the new town enacted a law that prohibited permanent residence of Indians or any permanent Indian structures in the City limit forcing thousands of Salish, including Chief Seattle, off their ancestral lands and out of their homes. Chief Seattle died a year later. By the end of the first decade of the twentieth century every longhouse, potlatch house and trace of the Salish communities that had inhabited the Seattle area for hundreds, perhaps thousands of years, had been burned and eradicated (Figure 3).

Figure 3. Relegated to tents on the beach a Salish Woman weaving a basket Seattle beach ca.1900; Seattle in background.

The story of generations of Salish people that followed is a long well documented one that involved, in simple terms, removal to reservations and the continued acquisition of tribal lands that had been ceded in treaties by settlers. However future generations of Salish and Salish still had the language from those early treaties to rely on, language that maintained a legal connection to their ancestral ways. The Treaty of Medicine Creek (Article 3) stated that the Salish were to retain "The right of taking fish, at all usual and accustomed grounds and stations, is further secured to said Indians in common with all citizens of the Territory…. together with the privilege of hunting, gathering…" Language similar to this was contained in all the Stevens Treaties.

Reaping the benefits of these treaty rights has not been easy for Salish Tribes. For decades, the Washington State Fisheries department dishonored the Steven Treaties, and municipal and personal property rights created barriers to harvesting the natural resources provided for in the treaties. Although those limits were foreboding, there has been perhaps no greater hindrance to the ability of the Salish people to fulfill the treaty right as it relates to hunting and gathering natural resources than the degradation of the local environment by the industrial culture's land use practices.

Seattle's Expansion: The Changing Landscape of the Perfect Paradise

Between 1870 and 1910 the population of Seattle grew nearly 9000 %, from 3,500 people in 1870 to 315,000 people in 1910 (Figure 4).

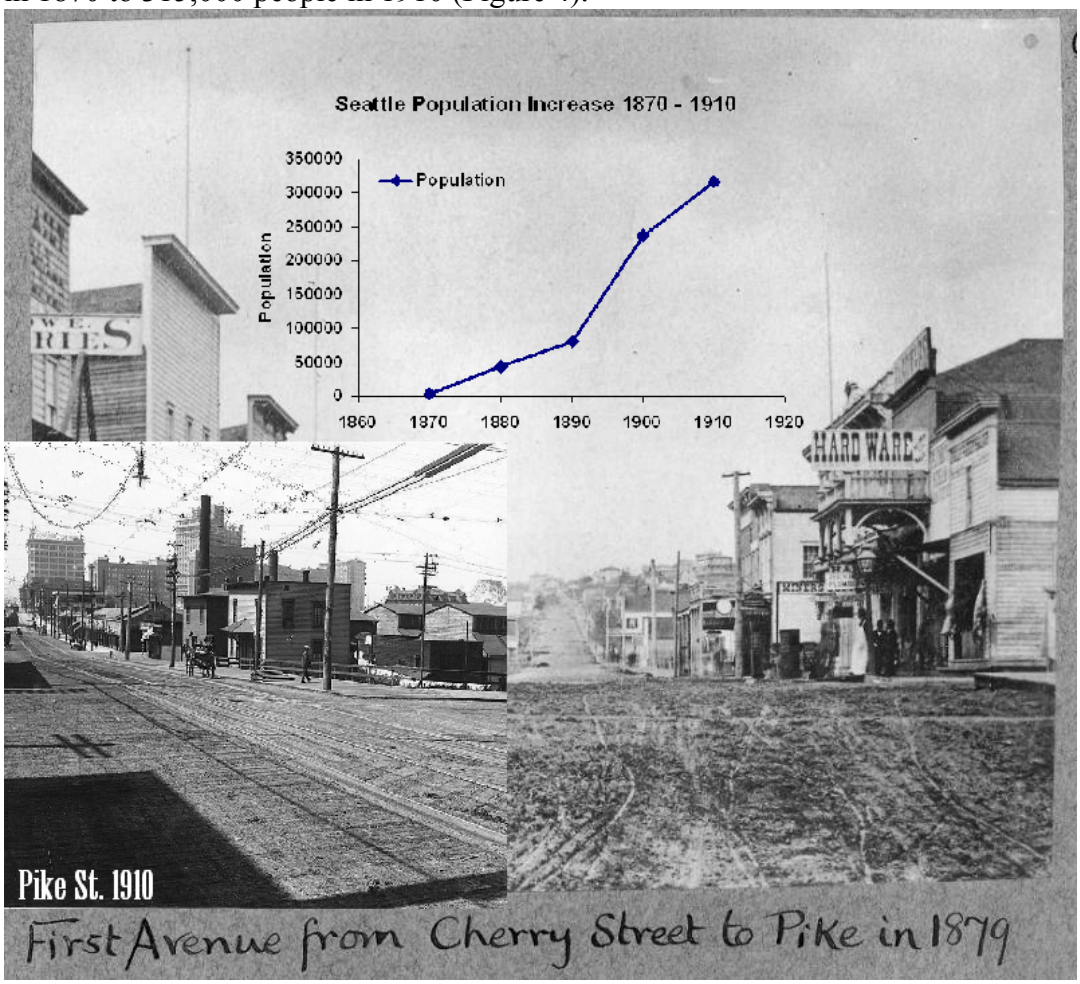

Figure 4. Two views of Pike St. thirty years apart and Seattle population growth during the same period 1879 -1910.

During this period Seattle and the surrounding area transformed from a small old west town to a bustling metropolis. The impacts of such growth are reflected in the rapid decline of natural resources in the Puget Sound area. Timber, fishing and shellfish harvest were dominant industries during this period of growth. At the time, natural resources appeared limitless. This sentiment can be heard by Charles Prosch in his description of the Seattle area and Puget Sound Lowlands during 1860.

> …Of berries and small fruits indigenous to the climate and soil of Puget Sound there were some fifteen or sixteen different varieties…It was alleged, for many years after the coming of the whites, that the Indians were in the habit of burning large areas of timber and brush land to

> promote the growth of berries…In the course of time, as the whites increased in number, the practice of burning the timber with this view was put a stop to by the settlers and lumbermen, backed by a legislative enactment forbidding the willful destruction of timber… The steady encroachments of the whites and consequent cultivation of the soil are fast obliterating every vestige of this once generous provision of nature… The clams, cockles, oysters and mussels were formerly gathered and eaten at all seasons of the year… The reader will thus perceive that, with this limitless supply of bivalves, there was actually no possibility of the people suffering from famine or starvation…When these are supplemented by fish in endless variety… More than enough has been stated to show that this country would once have been regarded as a perfect paradise by Esau or any other hunter or nomad who lived by the chase. (Prosch, 1901)

The "perfect paradise" of 1860 that had persisted for thousands of years in the Seattle area would not last another 100 years. The combination of intensive fishing pressure and landscape alterations would reduce the abundance of salmon in Puget Sound by over 90% between 1850 and the end of the twentieth century (Pess, 2000) (Figure 5).

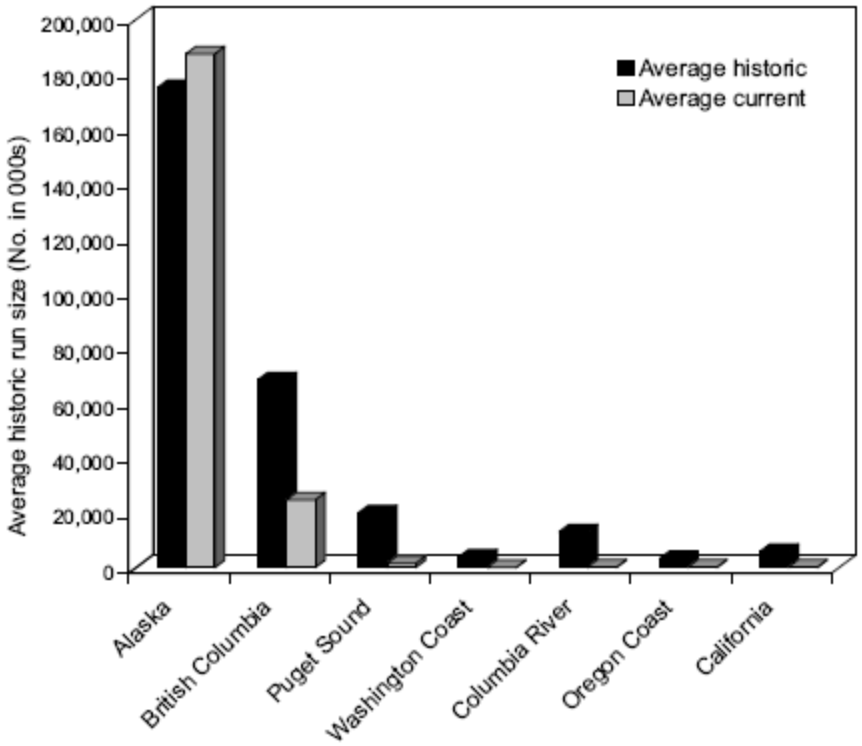

Figure 5. Estimated historic (~1800s) and current (~2000) Pacific salmon run sizes in the Pacific Northwest. Adapted from Gresh et al. (2000).

Poor water quality and the destruction of tidelands from runoff and intentional filling would decimate the oyster production and harvest from 150 thousand gallons in the late 1800's to less than 5,000 gallons by the mid 1900's (Dethier, 2006) (Figure 6).

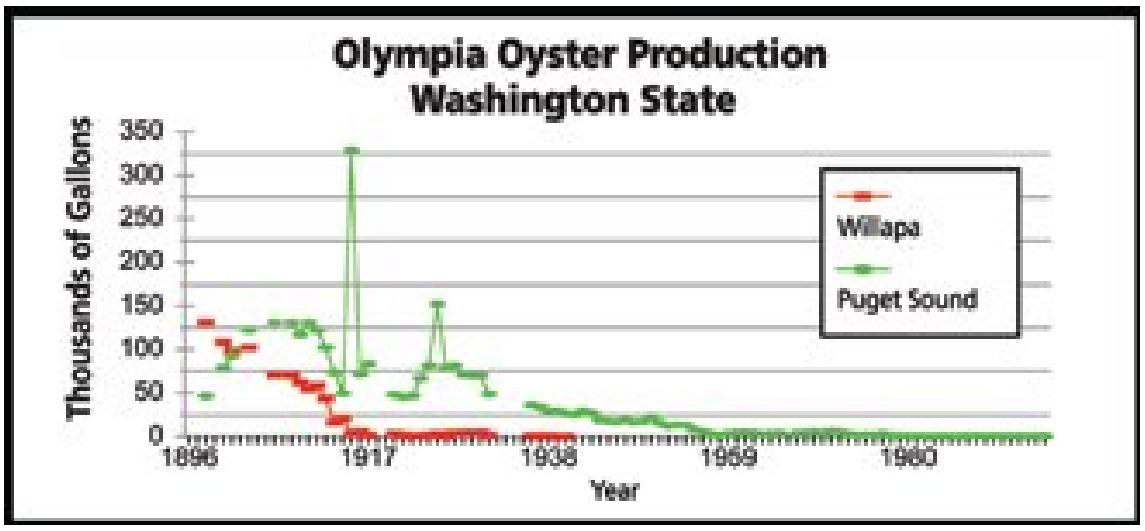

Figure 6. Historic oyster harvest in Puget Sound 1896 – 1970. (Dithier 2006)

The story was not dissimilar for all shellfish that relied on the health of the tidelands of Puget Sound. Dominant in the land use activities that changed the dwelling place of the Salish was clearing of the land. Although much of the land was cleared by settlers for agriculture and urbanization, commercial logging was the initial land use activity in the area. There has been perhaps no greater alteration to the archaic landscape of the Seattle area then the removal of the mature hemlock and fir forest.

The Clearing of the Land

Many of the changes to the landscape that have contributed to the demise of the watersheds the Salish depended upon have happened gradually while other changes occurred more rapidly. One thing is certain, the negative impacts these alterations to the landscape have had on the resources provided by the watersheds is profound.

Henry Yesler built the first steam powered sawmill in 1853 on the shore of Elliott Bay. By the turn of the century the area that would become Seattle would be completely deforested. Within 100 years over 2800 lumber mills came and went in the Seattle area providing the mechanism for the continued deforestation of the greater Seattle area (Figure 7).

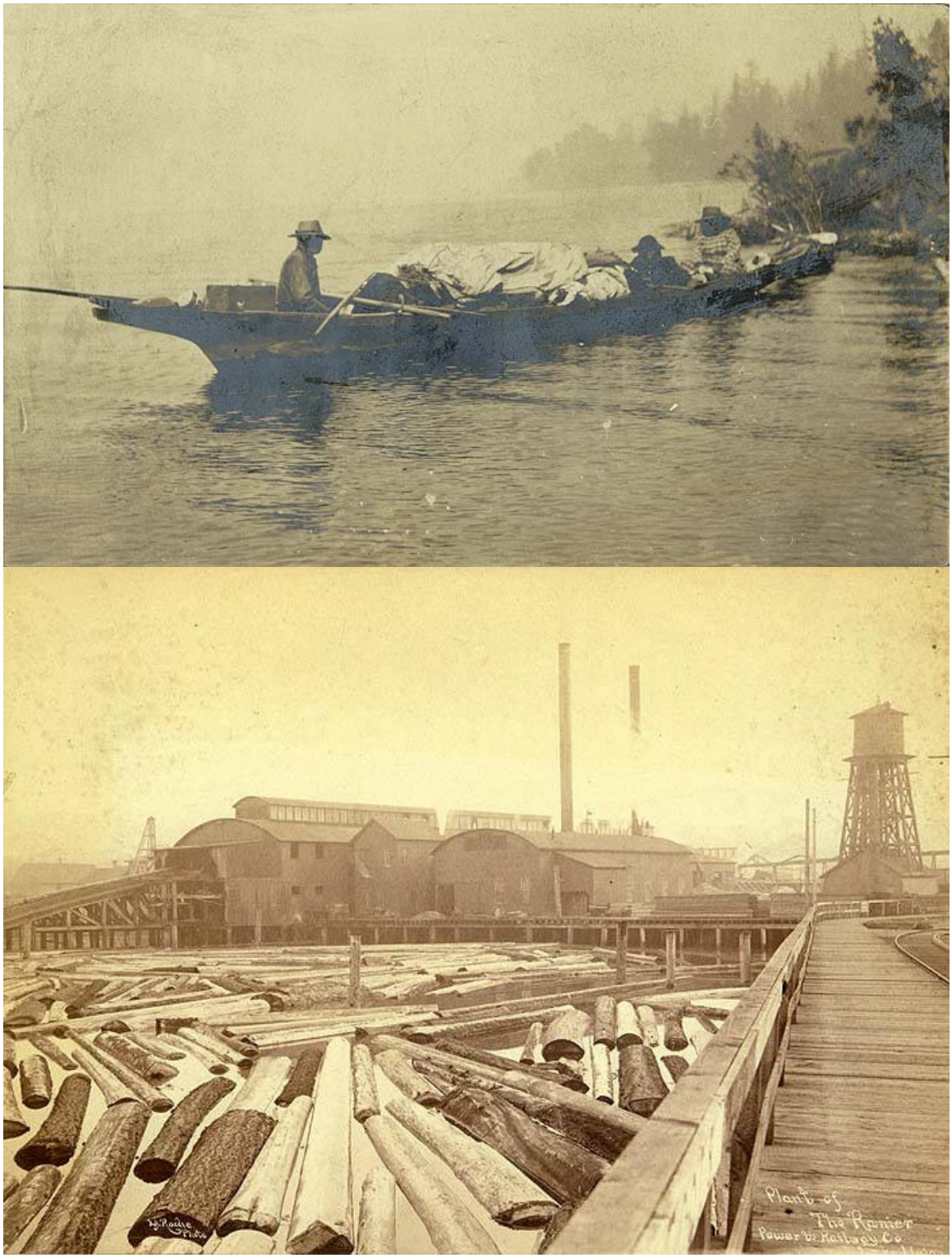

Figure 7. Lake Union (above) 1885 before the development of (below)lumber mills in 1891.

Unimpeded by a forest canopy, rain soaked the unpaved cleared land of the Seattle area dumping tons of sediment into the river systems. This sediment would fill wetlands and eventually make its way into the Duwamish Estuary choking important tidal areas as well (Pollard, 1941) (Figure 8) .

Figure 8. Above a sketch of Denny Hill 1853: Below logging on the shore of Green Lake 1897.

In more modern times pavement only exacerbated the negative impacts on the areas' rivers and streams. Currently the greater Seattle area is over 78% impervious surfaces. Impervious surfaces are concrete, rooftops and other surfaces that do not absorb rainfall. These surfaces funnel rainfall into tributaries and river systems at expedited rates because the natural hydrologic storing function of the aquifer is bypassed. In turn the tributaries of the paved over watersheds and wetlands become conduits for large quantities of water increasing the frequency and magnitude of flooding. These frequent powerful hydrologic events completely disrupt the ecological function of these important rivers and streams.

In addition the runoff accumulates pollutants that can be toxic to the invertebrates and vertebrates living in the tributaries.

As the land around Seattle was cleared settlements extended into areas previously uninhabitable

Farming became an important economic feature in the area and there was no better place then the floodplains of the major river systems for growing food. By settling in the now cleared forestlands within the floodplains, a need arose for flood control. So began the draining of wetlands and building of levees. In addition the original water supply, Lake Washington had become polluted and an alternative was needed. All these anthropomorphic activities brought on by the settlers to the region would alter the function of the river systems and their ability to support the production of salmon and shellfish at pre-settlement levels.

Overhauling the Landscape of the Green River Watershed and Duwamish Estuary

Prior to settlement the area of the Green River watershed was over 1,575 square miles and included the White River, the Black River, Cedar River, Lake Washington, Lake Sammamish and the Sammamish River. The watershed also contained a plethora of tributaries to these major water bodies making up over 1,900 miles of streams accessible to fish. Prior to alteration by settlers the White River flowed northward into the present day Green River. The Sammamish River, Lake Sammamish, Lake Washington and the Cedar River all flowed into the Black River which converged with the lower Green River which is called the Duwamish. The combined ecosystem made for a very large dynamic watershed that supported an incredible diverse community of flora and fauna (Collins, 2005).

Along with this ecosystem came large estuarine and wetland complexes that were counter to urbanization and the land use desires of the settlers. Major flooding and the lack of a significant waterfront because of shallow tidal flats severely limited farming in the lowlands and commerce in Seattle via Puget Sound. At the turn of the century actions were undertaken to stem flooding and fill in tidal lands; as a result the archaic watershed would be reduced by 30% and streams accessible to fish reduced by 7%. This reduction did not include the tidal area, home to a diversity of tidal marshes supporting several different plant communities. Riverine tidal marshes, scrub shrub and forested marshes totaled approximately 166 hectares in the flowing reach of the Duwamish. At the mouth of the watershed lay an extensive tidal flat. In 1895 prior to the onset of filling approximately 175 hectares of estuarine wetlands existed in what is now the greater Port of Seattle (King County, 2005).

By 1916 the landscape of the Green River Watershed had been permanently altered by the needs and desires of an industrial culture. The Green River once home to an annual return of some 40,000 Chinook salmon. was struggling to produce fish by 1920. To mitigate the losses from degraded habitat, a hatchery was built on the Green River in the

first few years of the twentieth century. The development of ports in Elliott Bay and Lake Washington and the building of levees and dams for flood control measures and drinking water all played a role in reducing the viability of a watershed that had supported the Salish for thousands of years (King County, 2005).

The Building of the Ship Canal

For hundreds of years, prior to the arrival of the settlers, Salish people inhabited the shores of Lake Washington and were known separately from the Puget Salish as hachua'bsh "the lake people". The first recorded history of lake inhabitants noted at least eighteen longhouses along the shores of the lake. There they caught fish from the lake and nearby streams and hunted vast numbers of waterfowl, otter, raccoons, deer and elk in the extensive marshes along the shore.

Until 1916, the outlet was at the southern end of the lake, where the sluggish Black River exited through marshy lowlands (Figure 9).

Figure 9. Black River 1905

Flowing into the Black River was the Cedar River which originated from snowmelt in the foothills of the Cascades. The combination of these rivers entered the Lower Green River or Duwamish Estuary on the eastern side at river mile eight, near the present day South Center Mall. Upriver approximately two miles a larger glacial river originating on Mt. Rainier known as the White River entered the Duwamish, bringing with it large amounts of sediment and wood. Empowered by these large tributaries, the Duwamish formed a north flowing winding course through a myriad of tideflat channels emptying into Elliott Bay. Frequent floods occurred throughout this complex floodplain with potentially

valuable farmland. Higher flows would on occasion reverse the Black rivers flow causing it to flow into Lake Washington (Sato, 1997).

As the land around Seattle's waterfront became increasingly expensive the lumber mills relocated to Lake Union and especially to Ballard, an independent community north of the city limits. In Ballard, the mills turned out 40 million feet of lumber each year in the early 1890s, most at the Stimson Mill Company plant. Ballard also became the leading manufacturer of shingles in the world. Tidal conditions forced vessels to anchor near the mouth of Salmon Bay in Puget Sound along the Shores of Northwestern Ballard and take aboard their cargoes from barges. The mills on Lake Union, meanwhile, sent their production over a rail line to Elliott Bay for loading upon lumber schooners. In addition the opening of farms and the first residential developments east of Lake Washington, as well as the bustling activity of a dozen lake-bound steamers, presented the possibility of expanding trade by creating access to Puget Sound. Mills, mines, and timber camps lining the shores of the Lake along with other commercial developments greatly increased interest in building a canal that connected Lake Washington to Puget Sound (Kingle, 2007).

In the year 1916 the Lake Washington Ship Canal was completed, the lake was lowered and settlers along the shores of Lake Washington could still see hachua'bsh in their canoes fishing. The lowering of the lake was a massive ecological disruption for the Lake and its people, reducing the lake surface by 7% and creating a vegetation free ring around the Lake. (Figure 10).

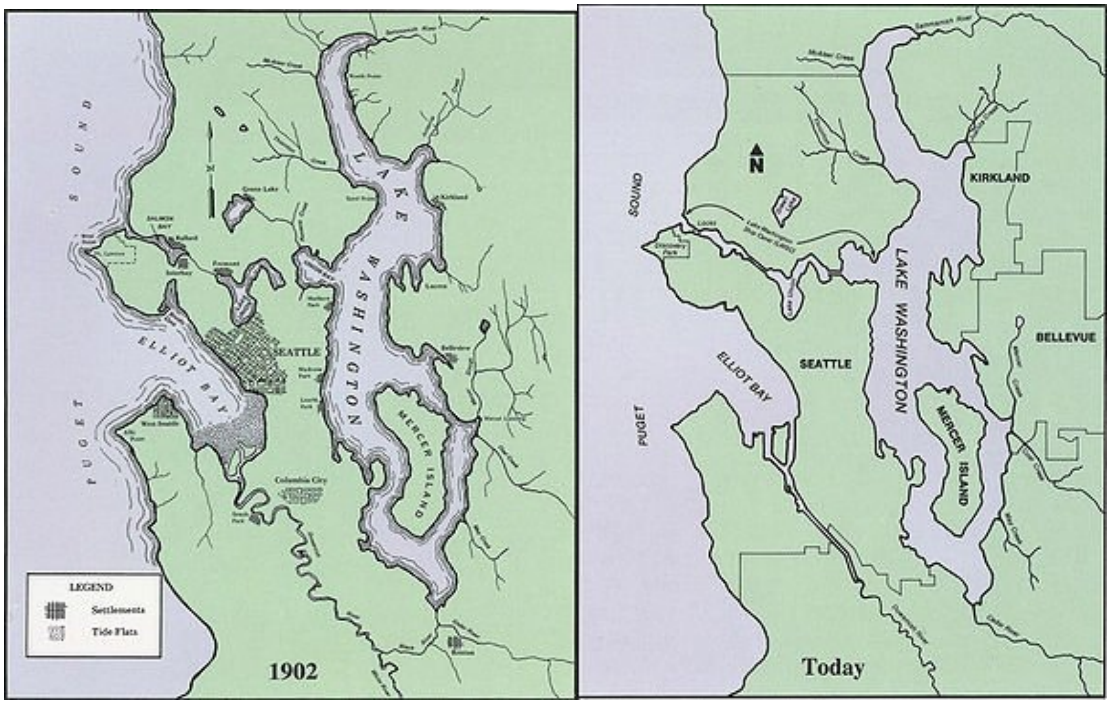

Figure 10. Map of the Seattle area then and now. (Courtesy of WRIA 9 Recovery Plan)

Consequently the marshes dried out and were overgrown by willow leaving the large numbers of waterfoul without any habitat. Fish populations were disrupted as well. When the Ship Canal was opened Lake Washington was lowered 9 feet . Since the Black River the lake's outlet at the time only averaged 3 feet in depth, it was completely dried up (Bagley, 1929). An account of the drying of the river was relayed by a Duwamish native Joseph Moses who stated in an interview with David Buerge,

> That was quite a day for the white people at least. The waters just went down, down, until our landing and canoes stood dry and there was no Black River at all. There were pools, of course, and the struggling fish trapped in them. People came from miles around, laughing and hollering and stuffing fish into gunny sacks.

Until 1912, the Cedar River emptied into the Black River. In 1911, however, the Cedar River flooded Renton. The following year the town dug a 2000-foot-long, 80-foot-wide canal to reroute the course of the Cedar to the north so that it flowed directly into Lake Washington, in the hope of avoiding floods in the future. These landscape alterations completely disrupted the migration patterns of adult and juvenile salmon. These fish that had once exited and entered the Lake through the Duwamish and Black river systems now had to find a new migration pathway that took those fish twelve miles north along the lakeshore and five miles west to the Ballard Locks. It is not known whether or not Lake Washington salmon juveniles and adults ever found this new migration pathway.

Levees and the Straightening of the Duwamish Estuary

Prior to its straightening, the Duwamish was a slow moving meandering intertidal water body that provided optimum rearing for slamonids . Braided shallow slow moving channels allowed for refuge from predators and high flow events. The river often left the banks of these meandering channels dissipating hydraulic energy that would otherwise push salmon juveniles into the saltwater of Puget Sound before they were capable of surviving in that environ (Collins, 2005).

The processes that functioned perfectly for salmon and waterfoul survival however, did not provide for navigation of the waterway by boat or the development of the land adjacent to the shores of this estuary. Industry was beginning to grow along the lower banks of the Duwamish as the tidal flats began to be filled in with rock and dirt from the Denny Regrade project. The industrial growth was prevented from moving upriver because of the braided nature and frequent flooding of the waterbody. A major contributor to flooding and channel braiding were the large quantities of giant woodjams and sediment present in the river. The majority of this wood was brought in via the White River. Prior to 1906, the White River flowed north to join the Green River and ultimately discharged into Elliot Bay. In 1906, a woody debris jam blocked the channel of the White River and diverted the majority of the floodwaters away from the Green/Duwamish and down the Stuck River which fed into the Puyallup River. That same year the woody

debris dam was replaced by a permanent diversion wall located in Auburn. The White River remains in this location today.

These debris jams were an important part of the ecosystem storing sediment and altering the path of the Duwamish River as well. By 1890 projects were undertaken to remove the wood piled up in the waterway to stave off flooding. Shortly afterwards plans were filed with the state to begin straightening the main channel of the Duwamish via a dredging project that would deepen and widen the channel. Work started on Duwamish development in 1909, when the State Legislature gave its permission for a commission to begin plans for dredging. The first dredging began four years later and from then on continued at a rapid pace resulting in the excavation of 7,400,000 cubic yards of earth. Twenty million cubic yards of earth were removed from the Duwamish to use on the marshland and tide flats, and another 2,500,000 cubic yards of sand were bought by the city of Seattle for additional filling of wetland areas. Dirt and rock was also used from Beacon, Yesler, and Denny hills regrade projects to fill the Duwamish tide flats creating what we see today, a straight wide deep channel with two channels near the mouth of the waterway separated by one artificial island.

Denny Regrade

On January 6, 1899, the first phase of the massive Denny Regrade was completed. The regrade of Seattle's seven hills was a series of leveling projects designed to facilitate the development of the downtown area of Seattle
(Figure11).

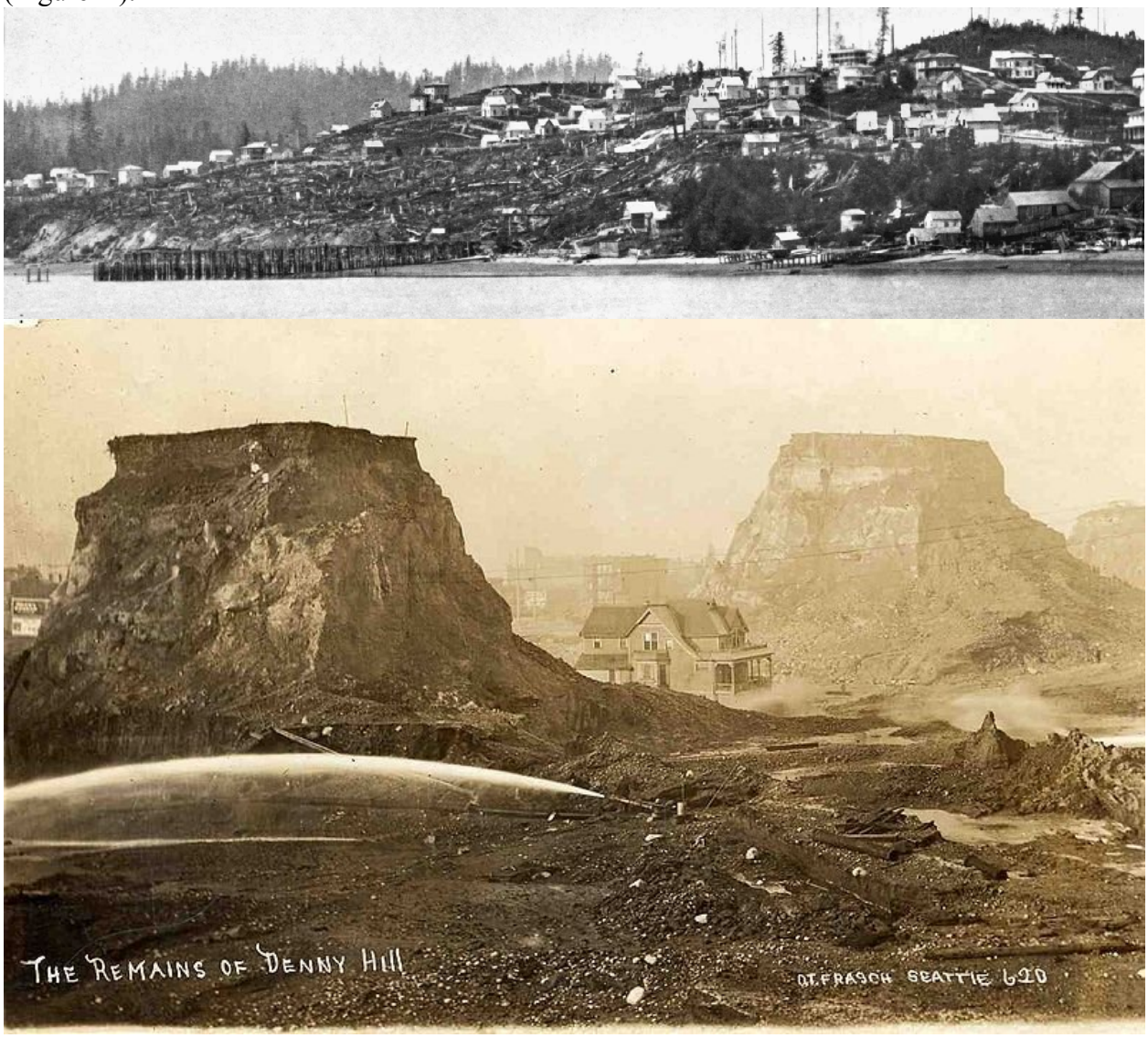

Figure 11. Denny Hill (above) 1881 and the remains of Denny hill (below)1907.

The Denny Regrade was planned in 1898 to level 1st Avenue from Pine Street to Denny Way (just north of downtown Seattle). Excess dirt was dumped into the tidelands of Elliott Bay near Railroad Avenue (later renamed Alaska Way) and Western Avenue. The contract for the second phase of the Denny Hill regrade, located between 2nd Avenue and 5th Avenue, was issued on August 29, 1903. The scale of these projects was immense. A series of glacial ridges and hills originally divided city neighborhoods from the downtown waterfront, making horse and rail travel difficult. In nearly sixty separate projects, workers removed many of these features, moving over 50 million cubic yards of

earth in the process. Work began with pickax and horses and concluded in the 1920s with hydraulic cannons and conveyor belts, powered by water and electricity from the city's newly built Landsburg Dam on the Cedar River. Engineers used the material to fill in tidelands for piers and railway lines and to add to Harbor Island, the manmade isle that replaced the sandbars at the mouth of the Duwamish. The First Avenue regrade was started in 1897 and completed on January 6, 1899. From 1902 to 1911, Second Avenue hill was sluiced into the beaches and tidal areas of what is now the Seattle waterfront. Before the regrade the Seattle waterfront was a series of bluffs rising hundreds of feet from the shoreline to downtown. This work did not come without its impacts. Not only did it eradicate important landscape features that supported the Salish , the work also washed away sacred places of the Salish. The loss of important intertidal areas of the Duwamish Estuary and Seattle waterfront as a result of the filling from the regrade is well documented but information regarding the destruction of numerous graves located on the bluffs of the steep Seattle waterfront is not often discussed. Observations of early Seattle waterfront life before the regrade were made by one of Arthur Denny's daughters for the June 22, 1906 issue of the *Post-Intelligencer*.

> The Indian cemetery that was on a bluff at what is now the foot of Seneca Street was a spot of great interest to us children. The graves all had more or less of the personal belongings of the deceased on them. The graves were shallow and we saw many 'good Indians' who were mummified. A number of graves had roofs built over them of cedar slabs with posts driven at the four corners. These were hung with clothing, tin ware, beads etc. Some of the bodies had been laid to rest wrapped in rush mats and canoes turned over them. Others were in the hollow trunks of large cedar trees. Infants were almost invariably entombed in this manner. When the banks would cave away during a thaw after a hard freeze it would expose bones and many stone implements and quantities of blue Hudson Bay beads. Some of these beads were the size of a robin's egg. They are very rare at the present day.

Landsburg Dam and the Shrinking of the Cedar River

In 1889, a report was written by Professor James Parkinson that concluded that waste discharges into Lake Washington would threaten Seattle's drinking water supply. The report was ignored and a pumping plant was expanded to pump 7,000,000 gallons a day. The hope was that the improvements would last for generations. However Professor Parkinson's report noted that without a system in place to pump sewage to Elliott Bay in Puget Sound there would be an unavoidable buildup of waste that would pollute the water supply. Typhoid had become a problem in Seattle in the latter part of the 1800's but decreased dramatically after 1901 when the City's water system was connected to the pristine Cedar River in the Cascade Mountains. It was not until 1967 that communities around Lake Washington stopped discharging treated sewage into the Lake and began sending it to treatment plants in Renton and at West Point for discharge into Puget Sound.

Utilizing the Cedar River as Seattle's watershed significantly decreased the habitat available for salmon. In 1899, the City built a headworks named Landsburg to divert water from the river into a pipeline. The pipeline ran 28.4 miles leading to the Volunteer Park reservoir in Seattle's Capitol Hill neighborhood just east of downtown. The system's capacity was quickly outstripped by population growth. Certain neighborhoods, including the University District, remained reliant on lake water. As the population of continued to grow, a second pipeline became necessary. In 1922, construction began on a third pipeline, made out of riveted steel. At the same time, Lake Youngs, located west of Landsburg, was converted into an additional impounding basin. A concrete aqueduct was built to connect Landsburg and Lake Youngs. This work was completed in 1930.

Before construction of the City of Seattle's Landsburg Dam in 1901, Chinook spawning access in the Cedar River extended to Cedar Falls at river mile (RM) 34.5. From 1901 until 2003, spawning access was restricted to the Cedar River below the dam at RM 22.6. In 2003, fish passage facilities were completed at the dam. In addition to removing over 12 miles of spawning habitat water withdrawal and flow regulation were primary causes for the reduction in the average mainstream channel width. Where the river once filled a space 250 feet wide in 1865, it was decreased to 170 feet by 1936. Further flood control structures and municipal water management measures constricted the average channel width an additional 35 percent compared to the 1936 condition to a width of 110 feet.

Given the loss of function of the ecosystems crucial to supporting the resources promised in the Stevens Treaties what measures can be taken to make up for the losses? Tribes often turn to the courts to realize their treaty rights that have been impeded. Mitigation and settlements between parties have also provided economic and resource access resolutions as well.

Section II

Fulfilling the Treaty Right

> *"A treaty is not a grant of rights to the Indians, but a grant of rights from them," Edward Rafeedie – United States District Court Judge*

With the disappearance of the landscape that supported the Salish it became necessary to realize the promises made in the Stevens Treaties in order to survive. At the heart of these treaties however was a clash of cultures. The primary intent of the treaties was to transition the Salish towards an agricultural lifestyle, each family owning a private tract of land to farm.[3] The European model of private ownership signified radical changes in the Salish view of property rights and way of life. However these changes did not alter the Salish desire to maintain the dominant aspect of their culture, that of hunting and

fishing. To retain those rights the Treaty Tribes of the Northwest looked toward realizing the Treaty language that guaranteed that part of their culture. The road to realization has been difficult and has required significant departure from past perceptions and actions for all parties involved.

Reparations: Is cash, apologies and promises to fix a reasonable remedy?

Reparation is an action or processes that repairs, make amends, or compensates for damages. There are three general types of reparation: restitution, indemnity (or compensation), and satisfaction. Restitution is designed to put the offended back in the position it would have been had the breach not occurred, and may include upholding the original agreements or treaties, reversing the damages, or stopping conduct that is in breach of the previously determined agreements**.** (Johnston, 2000) In the case of Washington State Treaty Tribes a breach of obligations established in the treaties creates the legal basis for arguing for a remedy. Thus, a breach of obligations may include adverse socioeconomic distress from environmental impacts and might be resolved by monetary settlements or implementation of programs or actions that improve degraded environments and restore lost resources (e.g., fisheries and watershed restoration).

Often referred to as *indemnity*, this type of compensation, involves the payment of money to the offended party for any losses that cannot be restored that were a result of the act in breach of previous agreement. Payments can include lost profit or value of lost property. Sometimes payments come with agreements on how the money can be spent, and might be used to fund a variety of remedial actions, including watershed restoration or mitigation programs such as hatcheries. Placing a value on the pre-settlement conditions and resources of the mid Puget Sound lowlands is probably impossible and impractical, so reparations generally represent indemnity payments based on current market values, rather than replacement values.

[3] The treaties themselves did not divide the reserved land into individual private tracts. This came with the Dawes Act of 1877. It was clear that the overall purpose of treaty making, however, was to transition the Salish to an agricultural lifestyle.

In the case of achieving reparations for local native communities the attempts are often inhibited by the lack of institutional ability to assign responsibility for addressing the breach. For example the Seattle area is home to dozens of municipal entities each with their own guidelines and regulations as to environmental management and land use actions. Many land use actions are in addition governed by broader Federal, State and County regulations, so often times a suite of institutions are responsible for actions that may be at odds with tribal treaty rights. More often than not legal resolution for the breach of Washington State tribal treaty rights pits the State of Washington against the Federal Government. The Federal government is responsible for upholding the Treaty obligations. Below are some examples of mitigated and legally resolved settlements and actions that attempt to repair breaches in the treaty agreements.

Mitigation: Can the trade off work?

-Hatcheries-
As harvest pressure, habitat degradation from forestry and urban development, and habitat loss from the building of dams and roads increased in the early part of the 1900's interest in supplementing natural production of salmon with artificial production grew. Some of the first experimental hatcheries constructed in Idaho in the late 1800's were seen as a panacea. The ability to replace the fish once produced by rivers and stream that no longer were viable with fish grown in hatcheries would allow for the continuation of the fishing industry and development of the land. Many decades later building hatcheries was also seen as a way to mitigate Tribes for the loss of fishing opportunity. When the Landsburg dam was built in 1901 on the Cedar River over 12 miles of habitat that previously supported several species of salmon were blocked off. In addition these fish produced above and below the dam that were once harvested by the Salish who lived in the vicinity of Lake Washington were additionally impacted by the reduction in river flow from the diversion of water to the City of Seattle for municipal purposes.

In the late 1980's local Treaty Tribes and the State began negotiations with the City of Seattle to mitigate the loss of habitat from the City's municipal use of the river. The resulting negotiations resulted in the City agreeing to build and operate in cooperation with the State and Tribes a Sockeye Hatchery at the Landsburg Dam Headworks.

During the later portion of the sixties and most of the seventies sockeye in Lake Washington supported modest Tribal and State fisheries. However in the nineteen eighties the numbers of returning fish began to trend downwards. Mitigation for habitat loss with a sockeye hatchery was seen as a way to restore the sockeye fisheries of the past two decades as well as possibly increase the overall sockeye production in the system. Recently however Sockeye production in Lake Washington has dropped off precipitously.

Restoration: What is possible?

The Society for Ecological Restoration International definition of "restoration" is:
"Ecological restoration is the process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed."

-Properly Functioning Conditions-

Restoring habitat involves a suit of technological alterations to the landscape and cooperative land management actions. These actions are an attempt to restore the full capabilities of the habitat or restore species relative portions of the affected ecosystem back to a condition that supports resource production at a level prior to habitat degradation.

Hundreds of millions of dollars are spent every year in Washington State attempting to restore habitat for salmon. Salmon have complex freshwater life histories and require a diverse series of healthy habitats within a watershed. Therefore when restoring habitat for salmon, restoration actions are usually required over a broad base of habitat features, requiring cooperation among multiple institutions that have interests in the areas being restored. Because the landscape of the Puget lowlands is primarily occupied by an industrial society it is widely recognized that restoring watershed features to archaic pristine conditions is unrealistic. Therefore a concept called *Properly Functioning Conditions* (PFC) was introduced by the federal Bureau of Land Management to assess natural habitat function. When habitat is restored to within metrics known to support key species the PFC process assumes that the environmental conditions are adequate to support productive populations of native anadromous and resident fish species as well. The notion of PFC for salmonid systems has also been incorporated by the National Marine Fisheries Service in connection with recovery of salmon listed under the Endangered Species Act.

Although ecosystems function holistically, each element of the system performing an action or series of actions that contributes to the function of the entire system, restoration efforts in watersheds are primarily implemented in a piecemeal manner because of the fractured nature of the modern watershed, funding availability, technological limitations, land access permission or the lack of cooperative institutional will.

One common restoration action that is implemented in the Seattle area because of its low cost and relative implementation ease is *riparian re-vegetation*. A riparian area is the land directly adjacent to a river or stream. In their historic nature these riparian zones would have been occupied by mature fir and hemlock in the upper regions of the watershed, or by thick patches of alder, cottonwood and willow in the lowland regions. The Green River in its pristine state would have been shaded by these giant trees maintaining water temperatures perfect for salmon during hot summer months. Prior to the Howard Hansen Dam on the Green River, natural unmanaged flows would have regularly left the banks of the river, and unimpeded by levees recruited some of these old growth trees into the main channel of the river. Here the logs would perform important functions for salmon, working with the rivers natural flows to scour out deep pools, storing sediment that could potentially bury salmon nests (redds) and providing structure that could be utilized by the fish.

In addition these structures would cause the river to change directions, creating a more braided multi-channel system. By having multiple channels for the water to flow into, the

energy of the river is dissipated and redds that are washed away today in the levied single channel would have been preserved in a multi channel system. The restorative potential for planting trees in the riparian zone is high, however, the rewards described above, especially for an urban river cannot be met. Flow management reduces the function of wood that is present in the river and along with levies keeps the river from leaving the channel to recruit wood that, 100 years after planting, is big enough to restore some of the natural hydrologic features of the system. The primary function riparian plantings perform today is to shade the river in hopes of reducing water temperatures during summer months to a level that meets PFC for salmon.

Since the river is bound between levies and is incapable of recruiting large trees if they were there, wood placement is another common form of habitat restoration. During the last two decades wood has been anchored in the banks of the Green River when repairing or building new levees. These actions are seen as mitigation for the damage to habitat caused by the levee. However these small immobile logs do not function in the way wood did when the river had higher flows and the wood was mobile. Anchored wood placed in the river can create pool like depressions in the bottom features of the river and provide cover for fish, but these immobile pieces do not congregate into jams diverting the pathway of the river into new channels, nor does the engineered wood placements, which in some cases are elevated and only in the wetted part of the channel during high flows, function well at storing sediment. Placing wood in the river at a rate that will meet PFC conditions has proven to be a goal that has been nearly impossible to meet. Recreation interests, delays in permit approval processes, and unsuccessful projects that get washed away by the force of the rivers have limited the success of artificial wood propagation in many of the local Seattle area waterways.

Trees in the riparian zone and wetted areas of the river are not the only important habitat features of a salmonid system. Flow management and the restoration of spawning access are restoration actions that through negotiated settlements and court actions have had some success. Even so it is widely recognized that engineering fractured habitat piece by piece will never provide the same function the pristine system once did. Yet by attempting to restore important habitat features to PFC, natural resource managers can slow down habitat degradation and in some cases eliminate previously degraded habitat to help preserve the salmon already present in the system. PFC can also be a useful tool for prioritizing where a system most needs restoration actions. For example in many cases protecting what works in a watershed may be a better application of time and money than trying to restore what doesn't, especially given the inability of humans to rebuild natural systems.

Linda Moon-Stumpff, Evergreen faculty member, has noted:

> Restoration from a tribal perspective is incremental, has humans involved and has to happen under changing present conditions. Pristine conditions are most likely never going to be obtainable, but more restoration efforts…need to be implemented to meet human and tribal needs as well as ecological goals. (Private communication, June 4, 2010)

Litigation: Are court decisions a safe gamble?

-Important Court Decisions Supporting Treaty Rights for the Puget Salish-

Court decisions do not always favor those who initiate them. Therefore trusting the extent of Stevens Treaty rights to the opinions of judges has inherent risk. Sometimes, however, it is necessary to take that risk when no other options are available. Below are examples of when Washington State Treaty Tribes believed a judicial intervention was needed to resolve Treaty Right disputes (Mulier, (2006/2007).

Boldt I: U.S. v. Washington, 1974

Although tribal acquiescence was critical to settlement of the Northwest, historically the State of Washington overlooked tribal interests and Treaty Rights in favor of the interest of others competing for the same fisheries. Initially the right of the Tribes to harvest fish was realized by a 1974 court case known as the Boldt decision (U.S. v. Washington), the decision affirmed the right of most of the federally recognized Tribes in the State to continue to harvest salmon. More recently these rights were extended to include shellfish as well. A 1994 U.S. district court decision (U.S. v. Washington, 1994) by Judge Edward Rafeedie further affirmed the Puget Sound Treat Indian Tribes treaty fishing rights to harvest shellfish throughout their usual and accustomed fishing areas, including private tidelands.

The original 1994 decision by US District Court Judge E. Rafeedie stated that the United States government made a solemn promise to the Tribes in the treaties that they would have a permanent right to fish as they had always done. Rafeedie found that treaties signed in the 1850s entitled Tribes to take half of the shellfish growing naturally within their traditional areas. Many of the commercial shellfish beds were established a century ago, yet tribal rights were never spelled out in anyone's property deed. Therefore Rafeedie further ruled that all public and private tidelands within the case area were subject to Treaty harvest, except for shellfish contained in "artificially created" beds. The decision was met with much controversy and was eventually appealed. Many shellfish growers and property owners purchased their land at or before the turn of the century without the knowledge of Treaty Tribes' harvest rights. Complicating matters more, many Tribes' did not assert their Treaty right to harvest shellfish on private and public property for over one hundred years. The Rafiedee decision was appealed because commercial shellfish growers believed that tribal harvests would interfere with their business viability. Private property owners also wanted to retain their right to exclude others from their land. On the other side, the Tribes wanted to assert a right to the artificially state-created beds because they were located in the Tribes' usual and accustomed fishing grounds. The State of Washington disagreed because the beds were "artificial".

The appeal ended in 2007, when Western Washington Tribes were given $33 million to settle the battle with commercial shellfish growers. In exchange for $22 million from the federal government and $11 million from the State, the Tribes would guarantee that commercial shellfish beds would not be subject to the 50-50 split. For those areas not exempt from Tribal harvest the split is only subject to the surplus shellfish above what is necessary to sustain natural production.

Limitations were also included in the implementation plan put forth by Judge Rafeedie. According to the plan, the Tribes are allowed to harvest no more than five days per year on any given beach. One more harvest day was granted for every 50 feet of beach longer than 200 feet. The conflict, however, remains unresolved. The Tribes and the growers still cannot agree on which shellfish beaches should be exempt from tribal harvest. Recently Tribes involved in the dispute have rejected many of the areas that the State and commercial growers say are exempt from Tribal harvest. The settlement agreement was specific about the documentation the growers had to provide as proof that they owned commercial shellfish beds that were exempt, The Tribes opinion is that many of the areas do not meet the burden of proof. The court is still laboring over the decision as to which beds will be excluded from the settlement.

-Boldt II-

Given the alteration to the Lower Puget Sound landscape over the last 150 years, habitat degradation must be considered as an important element that needs to be evaluated in light of the obligatory parties' ability to uphold the Treaty Rights to natural resources maintained by court decisions. This was not lost on Judge Boldt in his landmark 1974 decision. In an attempt to resolve disagreements about the role habitat degradation plays on the Tribes' resource allocation losses, the court ordered that the Tribes must carry the burden of proof. Boldt required the Tribes to provide information showing that State land use actions directly caused fishery habitats to be degraded. The State, in turn, must carry the burden of showing that such degradation does not affect the Tribes' ability to earn a moderate living from fishing. This responsibility for habitat protection via Treaty rights is known as Boldt II.

In 2001, several Washington State Treaty Tribes and the United States initiated a case against the State known as the culvert case. The argument stood on some of the decisions contained in the Boldt decision which inferred some responsibility for the protection of habitat important to salmon upon the State, if the Tribes could associate losses of salmon to State actions. The Tribes asked the court to require the State to repair or replace culverts impeding salmon migration to or from spawning habitat. According to the Tribes, State culverts under roads block at least 200 miles of streams, impeding fish from over 400,000 square meters of potential spawning habitat and more than 1.5 million square meters of potential juvenile salmon rearing habitat. The State agreed that some culverts under State control were barriers to fish migration. In its decision the court noted that the State estimated that removal of impeding culverts could result in an annual increase in production of approximately 200,000 fish, many of which would be subject to State and Tribal harvest. During the case the Tribes presented evidence that tribal fish

harvest levels have declined to less than half the levels of the years 1985 to 1991. Washington argued that the Tribes had failed to produce evidence that the blocked culverts were the cause for the decline. Recognizing that other factors are responsible for the decline the court came to a decision that the "conclusion is inescapable that if culverts block fish passage so that they cannot swim upstream to spawn, or downstream to reach the ocean, those blocked culverts are responsible for some portion of the diminishment. It is not necessary for the Tribes to exactly quantify the number of 'missing' fish to proceed in this matter."

Until recently the Tribes have been unable to meet the burden necessary to receive a favorable outcome which would hold the State accountable for habitat losses that had negative impacts on salmon production. However, on August 22, 2007, the U.S. District Court, Western District of Washington, declared that burden had been met. The court found that in the context of culverts blocking access to salmon spawning habitat the Stevens Treaties, as implemented by the Boldt decision, require the State to refrain from diminishing fish runs by constructing and maintaining culverts that block fish passage. The court was clear that its opinion was specific to culverts alone and did not incorporate broader application to separate habitat losses impacting salmon.

Past attempts to show habitat degradation impacts relationship to realizing Treaty rights has not been related to a single impact. The complete impasse of fish migration on a landscape scale with fish production impacts rivaling those caused by the State culverts is an impact that is quantifiable and not clouded by the additive affect of separate habitat losses that limit the courts ability to relate State land use actions directly to salmon decline. Because of this the court was adamant with regard to the homogeneity of the specific impact of blocking culverts in its ruling. Yet this decision may someday be used as a precedent, seeking to assign responsibility for protection of all life stages and functions of salmon from past and future habitat degradation.

A Way Forward

Treaty right appropriation and legal resolution has provided some economic provisions for the 21st century Salish. Still the landscape of the past and the nourishment it once provided are nearly gone and most likely will not be restored merely by following the lead of federal, state and local natural resource management agencies. These agencies do good work, and believe there is importance in saving salmon and ultimately restoring the landscapes these fish depend on, but their success is often limited by being an arm of the very institutions responsible for the degradation.

However, within this conflicted institutional framework habitat restoration efforts can be and are acting as an effective tool for slowing the pace of development.. State, Federal and municipal environmental agencies continue to provide mitigation and work to engineer the degraded habitat back to functional systems capable of supporting fish and other natural resources. These efforts to protect the resources are most successful when implemented on a landscape scale. Landscape scale restoration efforts are extremely difficult within fractured private, municipal, county, state and federally owned habitats, but under the umbrella of the treaty rights, large scale overarching restoration efforts can

be accomplished. A landscape scale restoration effort can be seen in the thousands of miles of salmon habitat that will be restored throughout the state of Washington as a result of the previously discussed Culvert Case. Without the desire to retain what was promised the Salish in the Stevens Treaties such restoration efforts would never happen. The role the Salish play in restoring their loss of place and the nourishment it provided by using the power of their treaties may be the most effective avenue toward finding a familiar landscape to plant their ancestral roots, a road that hopefully will restore a semblance of their historic dwelling place.

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