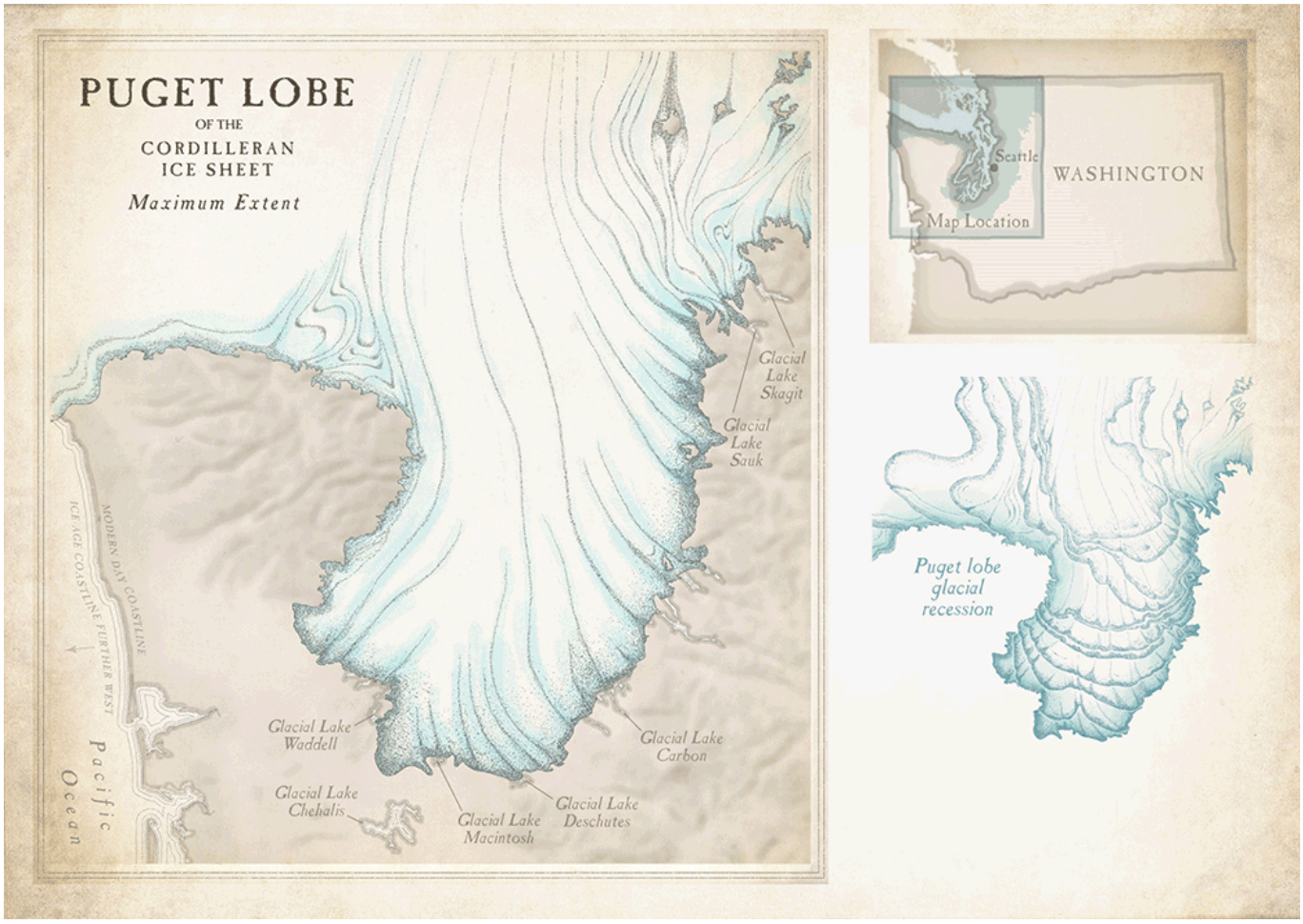
King County Sammamish River History

Sammamish River History

A visual narrative uncovering the history of natural and human changes along the Sammamish River.

King County Water and Land Resources Division

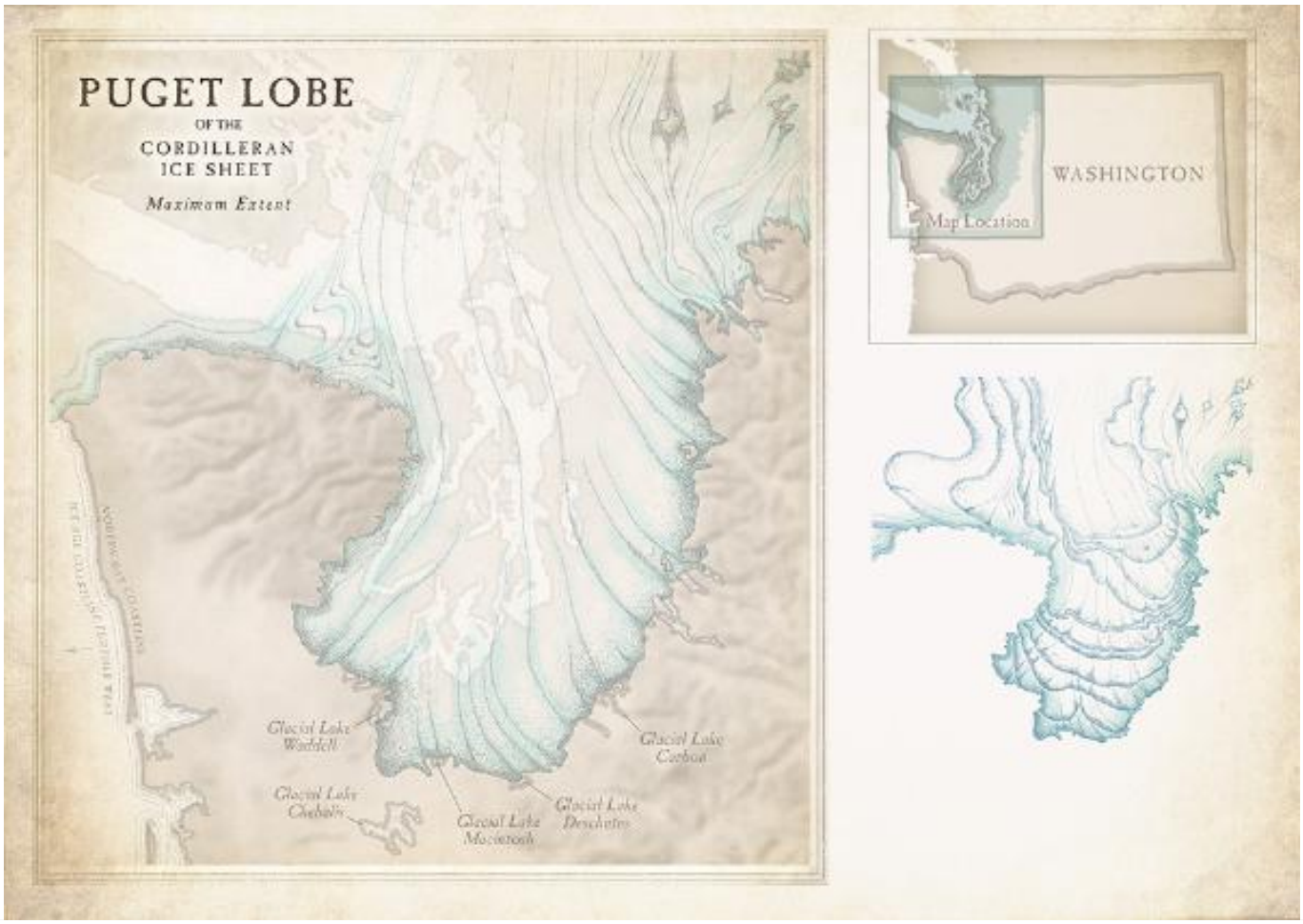
December 20, 2022



Natural History

16,900 Years Before Present

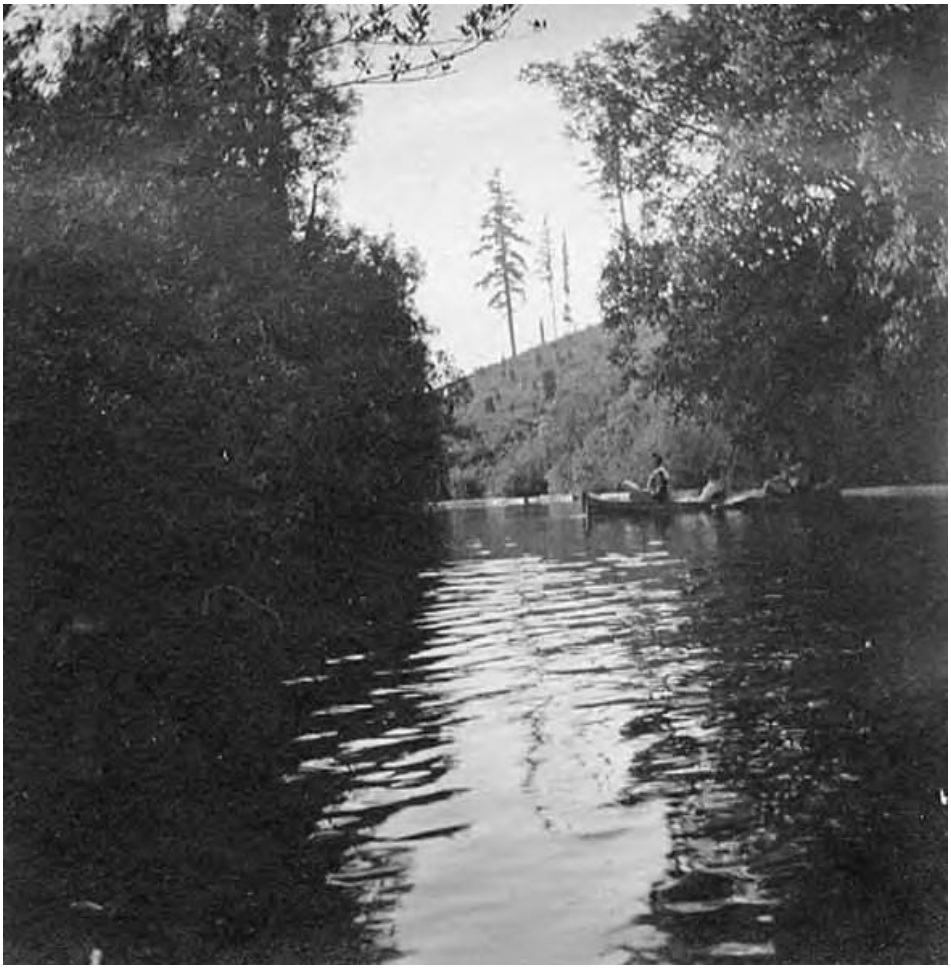
The Cordilleran Ice Sheet buries Puget Sound in 3,000 feet of ice.



The end of the Ice Age uncovered Puget Sound as we know it today.

16,900 years ago, Puget Sound was blanketed in a 3,000 foot tall glacier. The Puget lobe of the Cordilleran Ice Sheet reached south from Canada to Olympia and east to the Cascade Mountains.

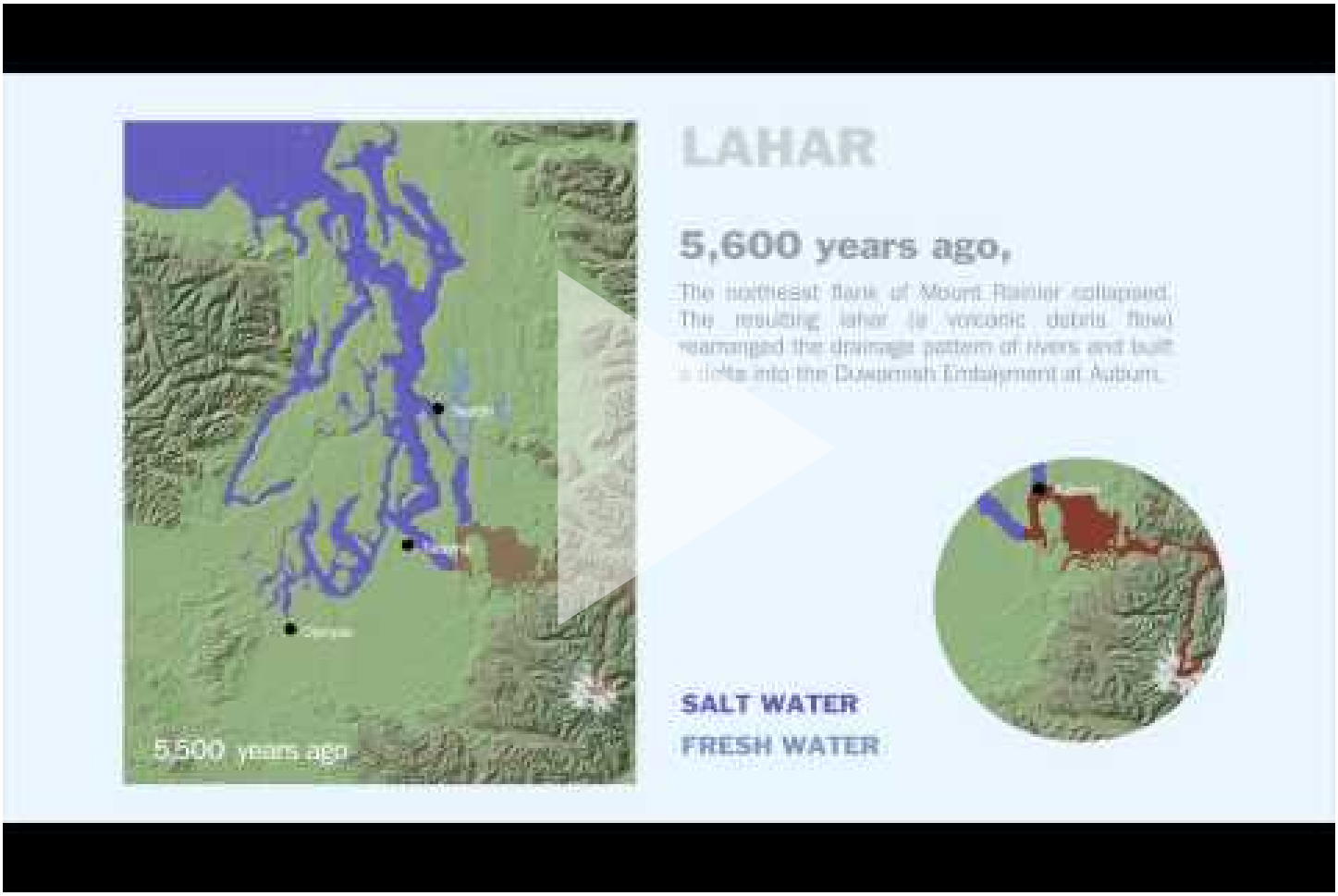
The **Sammamish River** was born from the receding waters of the glacier, which carved out valleys and deposited sediment throughout an almost two thousand year process.



As the Puget Lobe receded it carved troughs out of the lowlands, some which later became the Sammamish River, Lake Washington, and Lake Sammamish.

These conditions resulted in a flat landscape connecting the two lakes. The Sammamish River was at this time better described as a slough, or a swamp, which would reverse its flow and backwater from Lake Washington into Lake Sammamish during flood events. The current along the slough was almost nonexistent which provided densely wooded wetland habitat to a diverse range of species.

The image to the right, photographed in 1904, is one of the earliest depictions of the Sammamish River, once known to local residents as Squak Slough.



Click play to watch the Burke Museum's lifecycle animation of the Cordilleran Ice Sheet's Puget Lobe:

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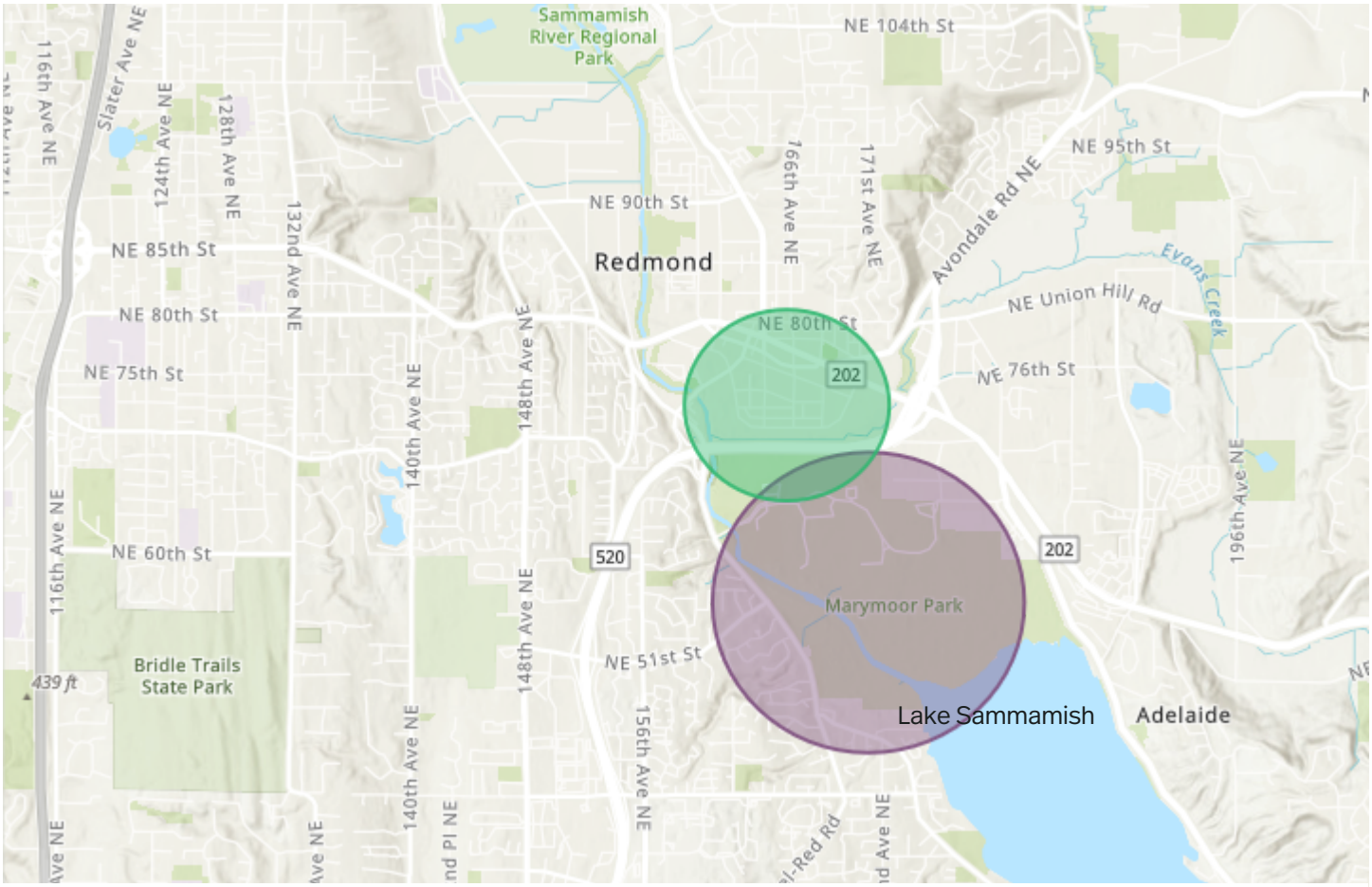
Originally, the Sammamish River flowed northwest from its headwaters at the northern tip of Lake Sammamish and released into Lake Washington 30 miles downstream.

Today, due to infrastructure projects, the Sammamish River travels 14 miles northwest from Lake Sammamish through Redmond, Woodinville, Bothell, and Kenmore, emptying into Lake Washington.

This interactive map (right) depicts the river's full extent as it exists today.



Archaeological findings at the confluence of the Sammamish River and Lake Sammamish reveal ancient settlements.

The earliest evidence of human activity on the river shows bone and stone tools dating to 12,000 years ago at the Bear Creek Site.

The earliest evidence of permanently settled human activity on the Sammamish River dates to 2,500 years ago, based upon findings of shell, bone, and lithics at the Marymoor Park Prehistoric Indian Site. At the same site, a lower sedimentary layer implies the existence of a significantly older seasonal camp 6,000 years ago.

The exact locations of these sites have not been disclosed out of respect for their former inhabitants. By preserving the integrity of these culturally and archaeologically significant sites, they may continue to serve as a reminder of the long history of the Coast Salish people who have lived in the Sammamish River Valley since time immemorial.

Pictured below is a topographic map of King County published in 1897. The Sammamish River was once a delicately interconnected network of meandering streams surrounded by marshland.

Topographic map of King County. Courtesy USGS. 1897.

Coast Salish Lands

Lolota Zickchuse, a Coast Salish boy of the Snoqualmie Tribe who lived on Lake Sammamish in 1890.

Coast Salish people have lived throughout the Pacific Northwest since time immemorial.

Land Acknowledgement

King County acknowledges that the Sammamish Capital Investment Strategy site is located within the traditional territory of the **Coast Salish people** and express gratitude for their caring for these lands.

We recognize that the land, water, and natural resources at the project site are within the treaty-protected usual and accustomed places of Coast Salish Tribes and express our commitment to honor the Tribes' ongoing treaty rights.

We thank them for having cared for these lands and waters since time immemorial, and look forward to working with them in partnership as we continue to build our community together.

In this interactive map, explore some places which were important to the Coast Salish people who lived at the confluence of the Sammamish River and Lake Washington in the mid-19th century. The Lushootseed names of these villages and other important locations are included.

The Burke Museum *Waterlines Project* created a rendering of the Seattle area in the mid-19th century. The Waterlines team describes the importance of remembering and honoring these locations:

"The place names on the Waterlines map, written in the Southern Lushootseed language of the Coast Salish people in the Seattle area [including what is now the mouth of the Sammamish], are drawn from elders who worked with ethnographers in the early twentieth century, from the work of linguists and scholars such as the late Vi taqʷšəblu Hilbert, and the research of q̓ʷaʔləmu (Nancy Jo Bob) and qəɬtəblu (Tami Hohn).

Place names are stories: proof of presence, archives of meaning, evidence of ancestry, and a reference for treaties and other legal connections to territory. They provide context to the ongoing

presence and strong connections to the city for Indigenous people as co-managers of our shared resources."

Glossary of place names along the Sammamish River:

1) **sc̓abaltxʷ** - Translation: Elderberry house (Water-related place)

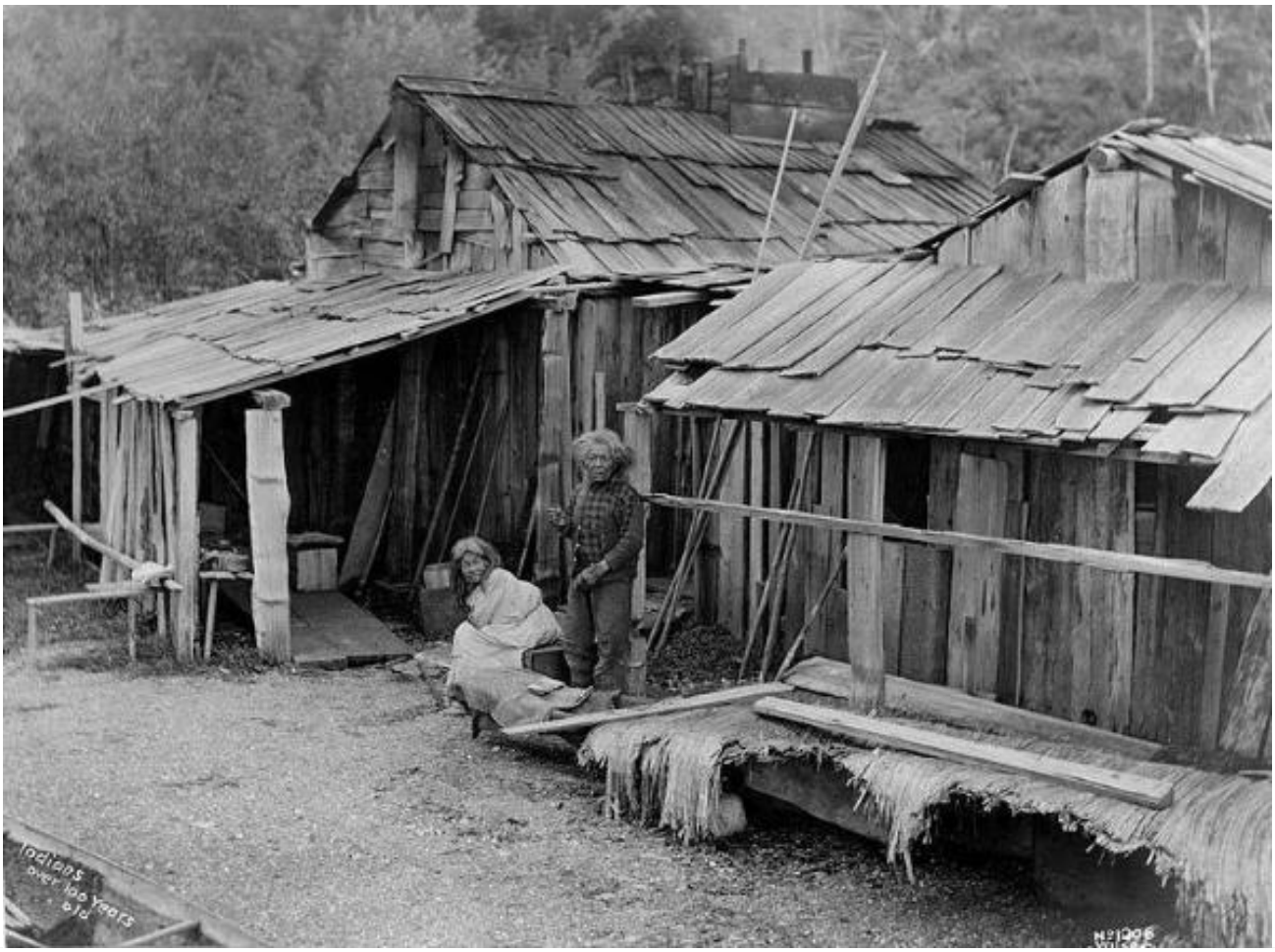
2) **sc̓ap** - Translation: Crooked (Water-related place)

3) **x̌ʼaxʷadis** - Translation: Place where something grows or sprouts (Village)

The Sammamish River is located within the aboriginal lands of Coast Salish People, who lived here and cared for the land since time immemorial. Many Coast Salish People lived in settlements with longhouses near rivers and lakes as well as in smaller more seasonal mountain camps. They traveled widely for trade, business, political relationships, socializing, and cultural gatherings. They managed and stewarded the land so that they could hunt deer and

elk, fish for salmon, and gather berries and wild plants for food and medicine.

Original map by Deborah Reade for the Stonington Gallery with later modifications based on research by Barbara Brotherton for the Seattle Art Museum.

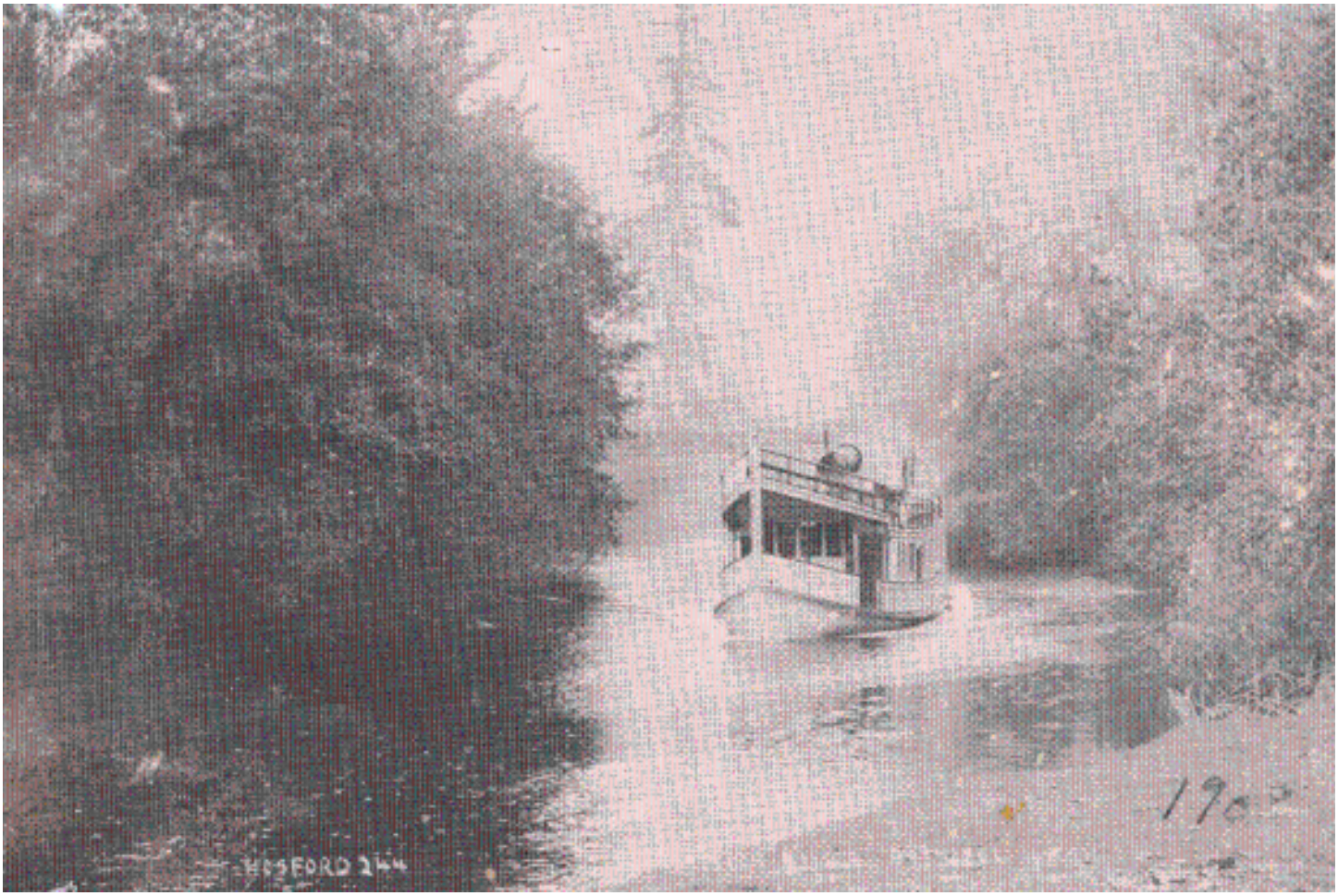


Traditional ways of life and homeland boundaries changed significantly with the arrival of Europeans. Representatives of Coast Salish Tribes, including representatives of Tribal people who were indigenous to the Sammamish River Valley, signed the Treaty of Point Elliott in 1855 proposed by representatives of the United States and the Territory of Washington. By doing so, state and federal representatives recognized Tribes as sovereign nations and Tribal representatives conceded to the establishment of Washington as a Territory and a State.

By the terms of the Treaty, Tribes retained their traditional sovereign rights to fish in their usual and accustomed places and to hunt and gather on open and unclaimed lands. Federal courts,

when interpreting treaty rights, found that the lands and resources of the Sammamish River Valley are within the usual and accustomed places of people who are now affiliated with the Muckleshoot Indian Tribe.

Today, descendants of the Coast Salish People continue to live and thrive in the cities, towns and communities of the Salish Sea Basin. Muckleshoot Tribal members continue to exercise their treaty rights to hunt, fish and gather in the lands and waters of the Sammamish River Watershed.



Settling Squak Slough

1870

The Sammamish River is surveyed for homesteading.

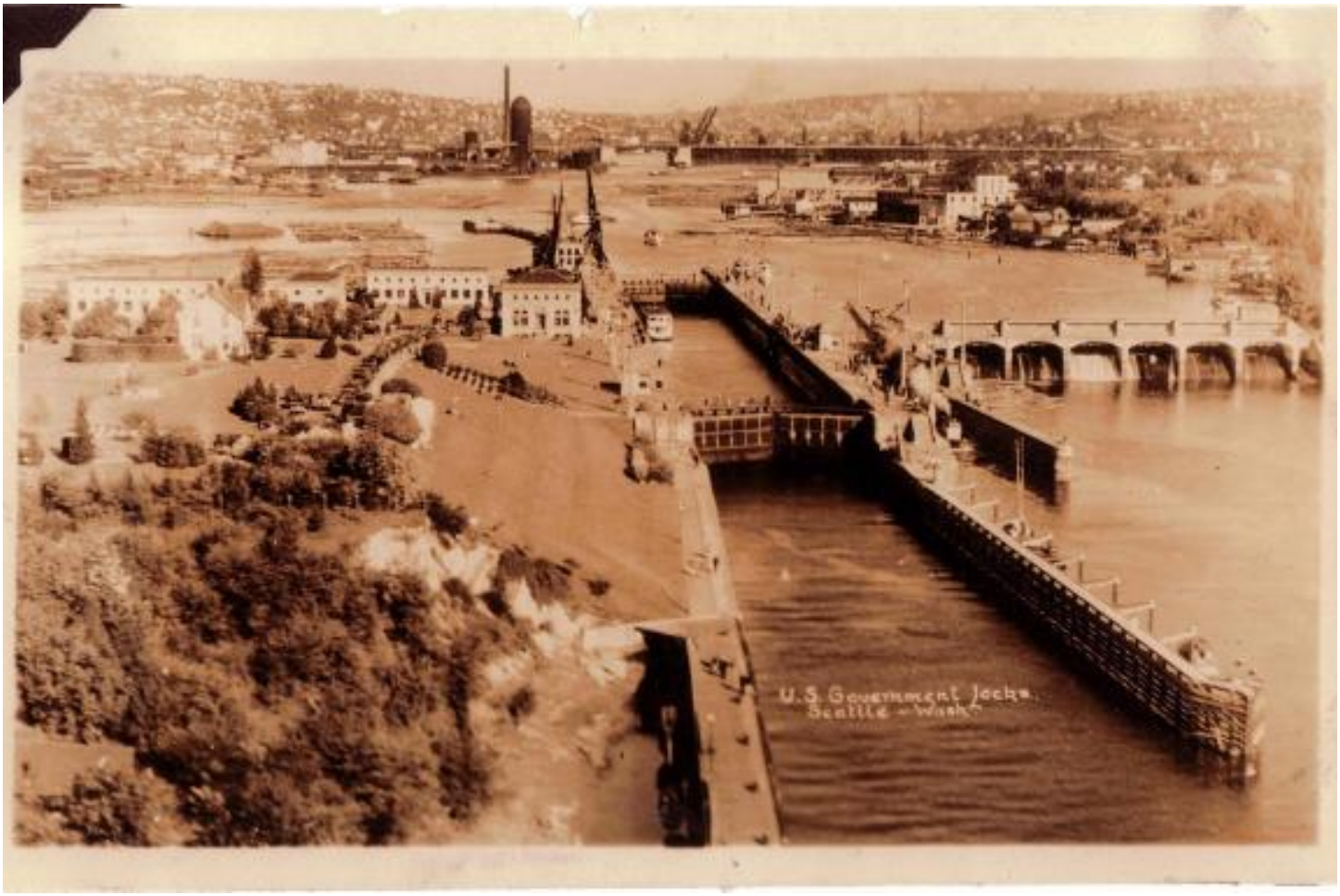
Europeans began colonizing the Sammamish River, then known as Squak Slough.

The **Homestead Act of 1862** allowed adult citizens, or intended citizens who had never borne arms against the U.S. government to settle 160 acres each of surveyed government land, provided that they improved the plot by building a dwelling and cultivating the land.

The Sammamish River was surveyed for homesteading in 1870.

The marshy nature of Squak slough became a problem for homesteaders who chose to farm and live on the floodplain year round.

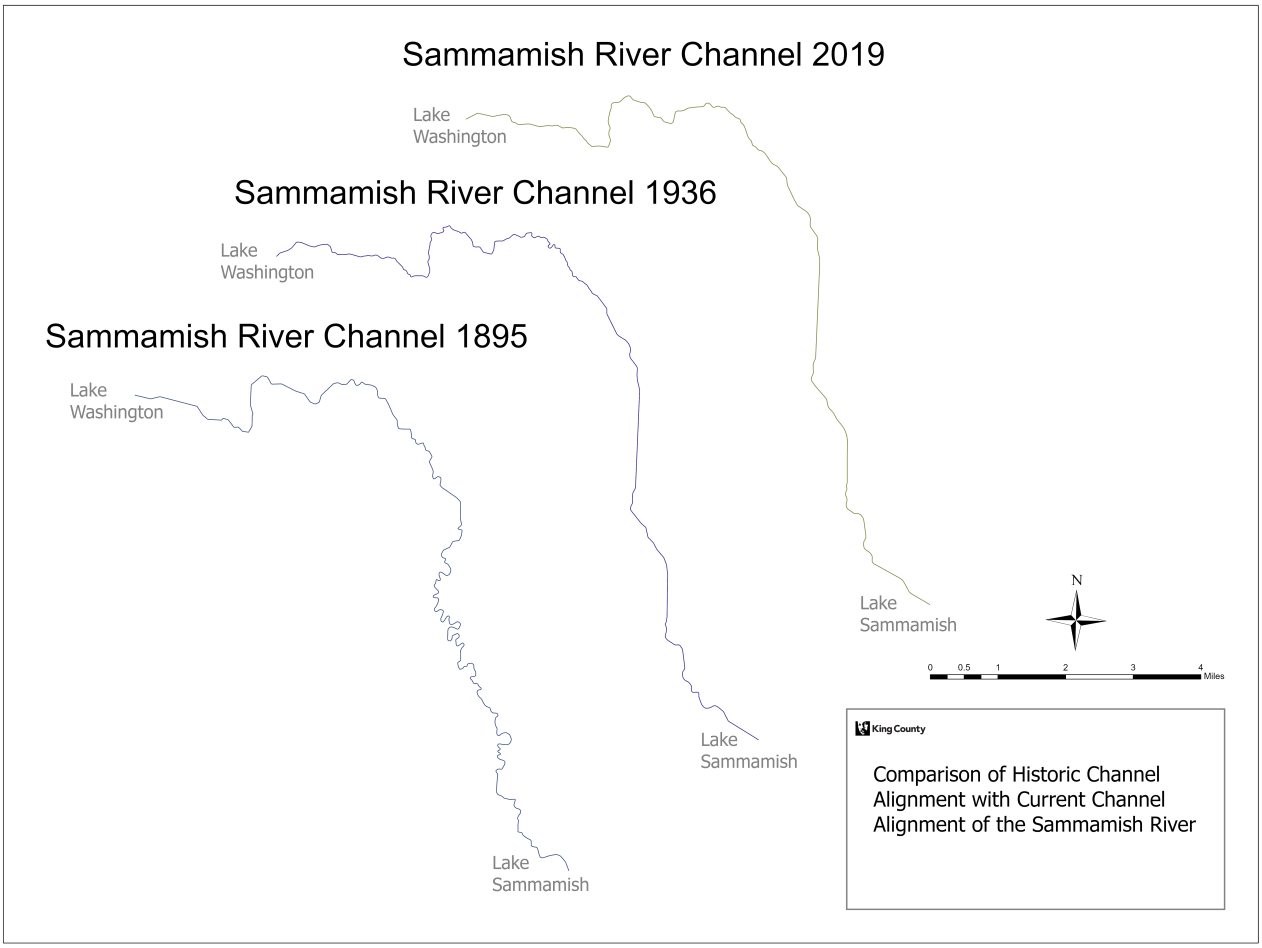
Their early spring crops were washed away and destroyed by annual floods brought by rainfall and snowmelt. The entire Sammamish River Valley could be flooded during these events, and at the lowest elevations of the valley, land could be submerged in water as deep as 2 feet.



Shaping the Land

Early 20th-Century

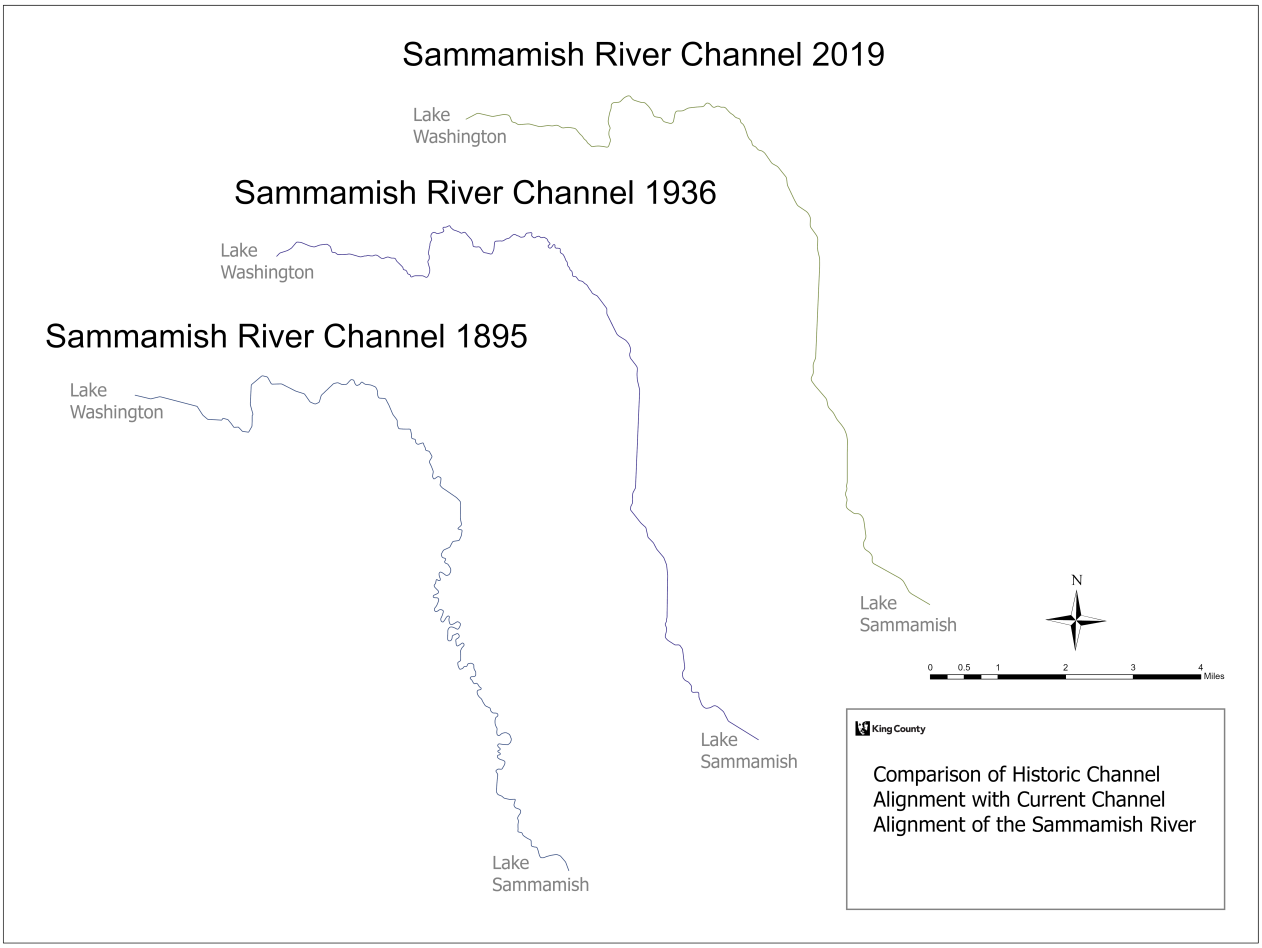
Major infrastructure projects permanently alter the landscape of King County.



In 1895, Washington legislature authorized counties to establish drainage districts and diking.

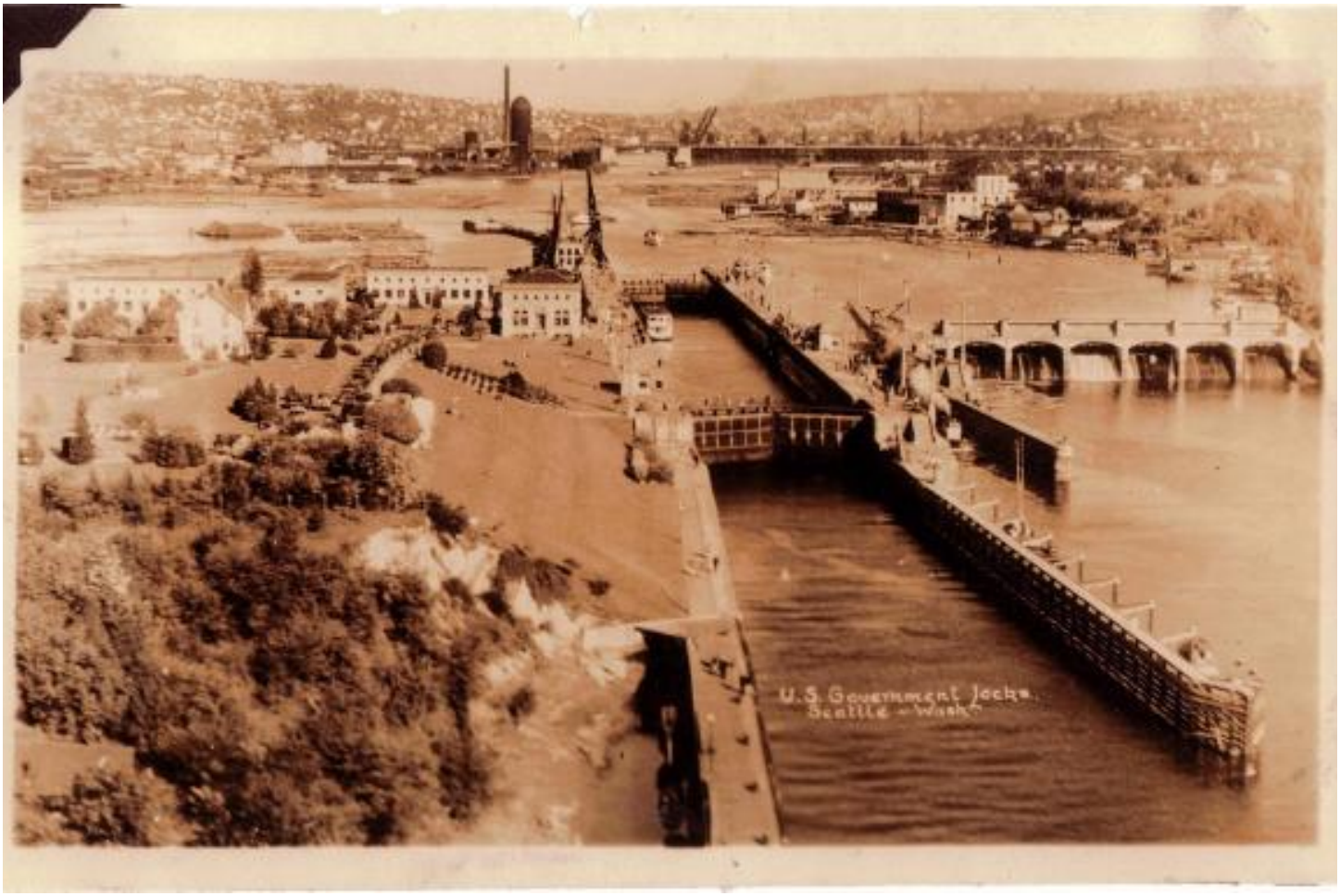
Established by citizen petition, these districts were authorized to sell bonds and levy tax assessments in order to fund flood control projects.

Drainage District No. 9 was established for the Kenmore-Hollywood area, encompassing a northwestern portion of the Sammamish River.



Between 1895 and 1936, the drainage district made significant modifications to the river, altering it to roughly the same alignment it takes on today. The district was able to channelize the river from a network of meandering streams into a single river channel by building river banks to control flow direction, which is a process called diking.

Straightening the meandering river controlled flooding but reduced the river's length by more than half and removed its connection to floodplain wetlands. The loss of this connection reduced the Sammamish River Valley's ability to regulate water quality, retain water in marshes and bogs during dry Puget Sound summers, and provide habitat to birds, fish, and other wildlife.



The Lake Washington Ship Canal Project lowered Lake Washington and Lake Sammamish, altering the course of the Sammamish River.

In the 1910s, as urbanization began to take hold in the Seattle area, large-scale projects began to affect the flow of the Sammamish River.

The Lake Washington Ship Canal was built to connect the saltwater of the Puget Sound to the freshwater of Lake Union and Lake Washington. The United States Army Corps of Engineers dug a canal to connect the lakes to each other and Puget Sound to improve water navigation.

Because the lakes are roughly 20 to 22 feet above sea level, a lock system was built at the intersection between the newly built canal and Puget Sound. The locks contain a series of gates which open and close to raise and lower the water level between the gates to

permit boats, ships, or other watercraft to pass through to the other side. For travelers going east from Puget Sound to Lake Union, the water level would rise within the locks. Travelers headed west would be lowered by the locks into Puget Sound.

The Lake Washington Ship Canal was completed in 1916, and consequently lowered Lake Washington by 9 feet. Lake Sammamish was only lowered by 6 feet, so the gradient from headwaters to mouth for the Sammamish River became much steeper.

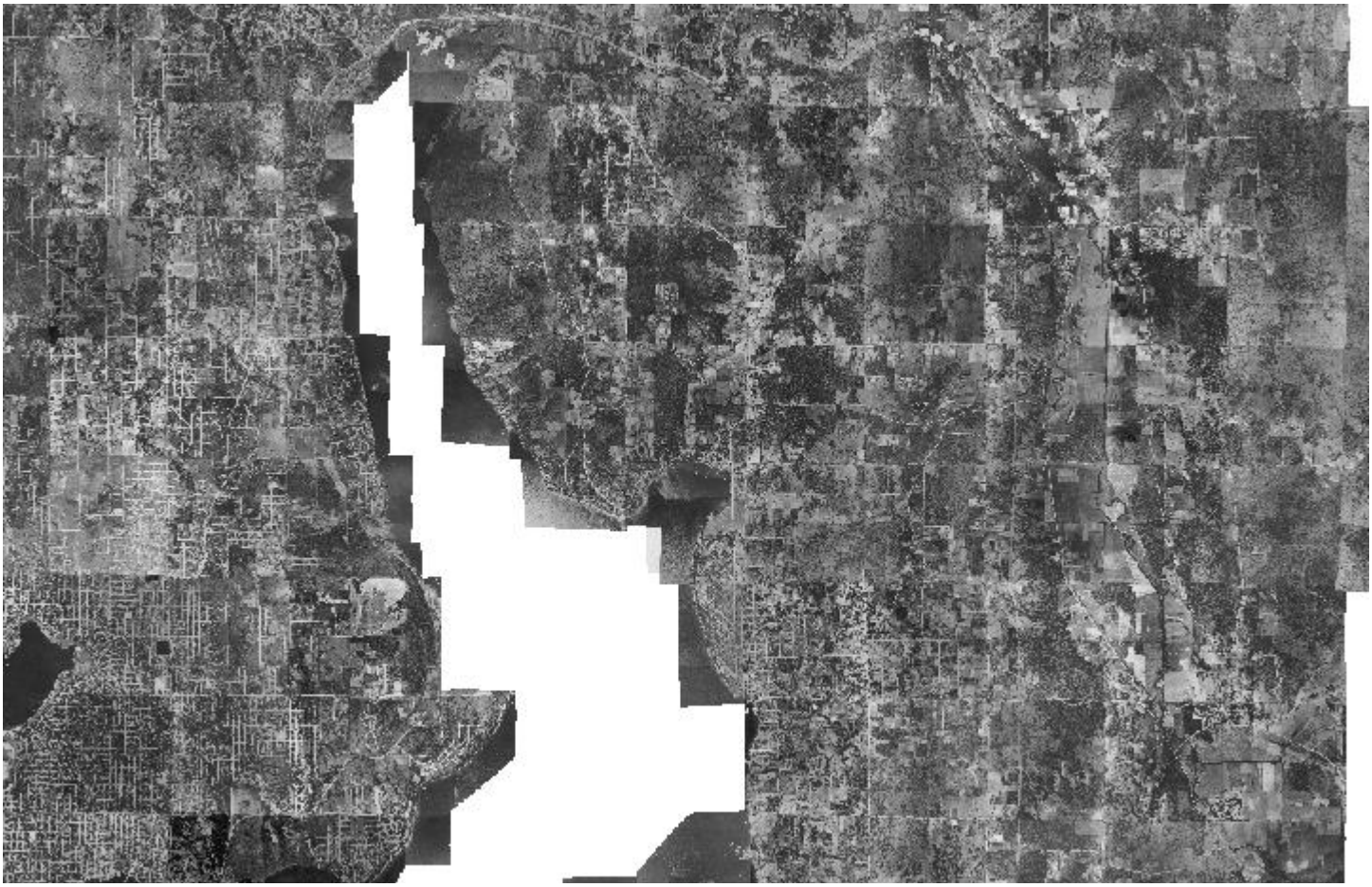
The new river gradient affected the floodplain tremendously. The once slow-moving river began to flow much faster. The river now carried large amounts of water at an increased speed from Lake Sammamish to Lake Washington. Flood risk increased for residents along the Sammamish River. For the next two decades the drainage district continued to modify the river.

The Land Use and Aerial Surveys Project produced the first ever aerial map of King County in 1936.

King County's **Land Use and Aerial Surveys Project** was a four-year undertaking begun in 1936 by King County Assessor Roy B. Misener in partnership with the Federal Works Progress Administration (WPA). Their goal was to conduct a land use survey and inventory of the County in order to equalize real estate taxation.

The major product of this project was the County's first ever aerial map; a series of images captured from aircraft and carefully stitched together.

Today, these images are available to view as maps on Geographic Information Systems (GIS). These high-quality images are useful for resource managers who have questions about historical land use.



Explore the original aerial map created in 1936

Select the magnifying glass to access the search bar and input an address or place in King County to see what it looked like in 1936!

The entirety of the Sammamish River was photographed, resulting in a map which provides meaningful insight as to how our predecessors shaped and managed the river almost 100 years ago.

Areas which appear blank on the map were not photographed for this project.

King County Assessor Roy B. Misener took many home videos to document the project's progress. In this silent film from the archives, experience a typical day for the surveying crew in 1936.

These home videos are a rare glimpse into the King County of a past era, once dominated by a rural and densely vegetated environment. Seeing the faces of the people who were involved in this project provides context for the social and physical environments of the

County in the mid-20th century. Understanding the County's past is critical to moving forward with positive and informed change.

Farming and Recreation

Mid 20th-Century

The Sammamish River becomes a hub for family farming and outdoor recreation.

Family farming is an integral tradition of the Sammamish River Valley.

Despite the many alterations made to the Sammamish River during the early-20th century to improve navigability and reduce flooding, the high groundwater table and frequent early spring floods continued to impede commercial and residential growth. As the Seattle area continued to grow in populations, farmers took advantage of fertile land along the Sammamish.

Dairy, chicken, and berry farms were a common sight during the mid-20th century. In the 1960s, development grew exponentially, especially in the food and beverage sector.

In 1985, King County designated five Agricultural Production Districts (APDs), and allocated 1,000 acres for the **Sammamish River Valley Agricultural Production District**, an area between Bothell and Redmond. Designated in order to protect the area from urban encroachment, the APD features a robust produce, beverage, and horticulture community today.

Learn more about King County's Agricultural Production Districts (APDs).

Recreation abounds from Lake Washington to Lake Sammamish.

In 1934, the river's first formal speedboat race was held by the Seattle Outboard Association. The Lake Washington-Lake Sammamish Weekend Steeplechase spanned the entire length of the river.

Annual races attracted dozens of participants per year and thousands of spectators. In this exciting video from 1941, watch racers hop obstacles, tumble out of their boats on tight turns, and zip past spectators watching from riverbanks, bridges, and backyards!

Although speedboats no longer race here, recreation remains a major function of the Sammamish River. The river is home to over a dozen parks, sports fields, golf courses, and the Sammamish River Trail, a paved bicycle and pedestrian trail.

Flood Control Project

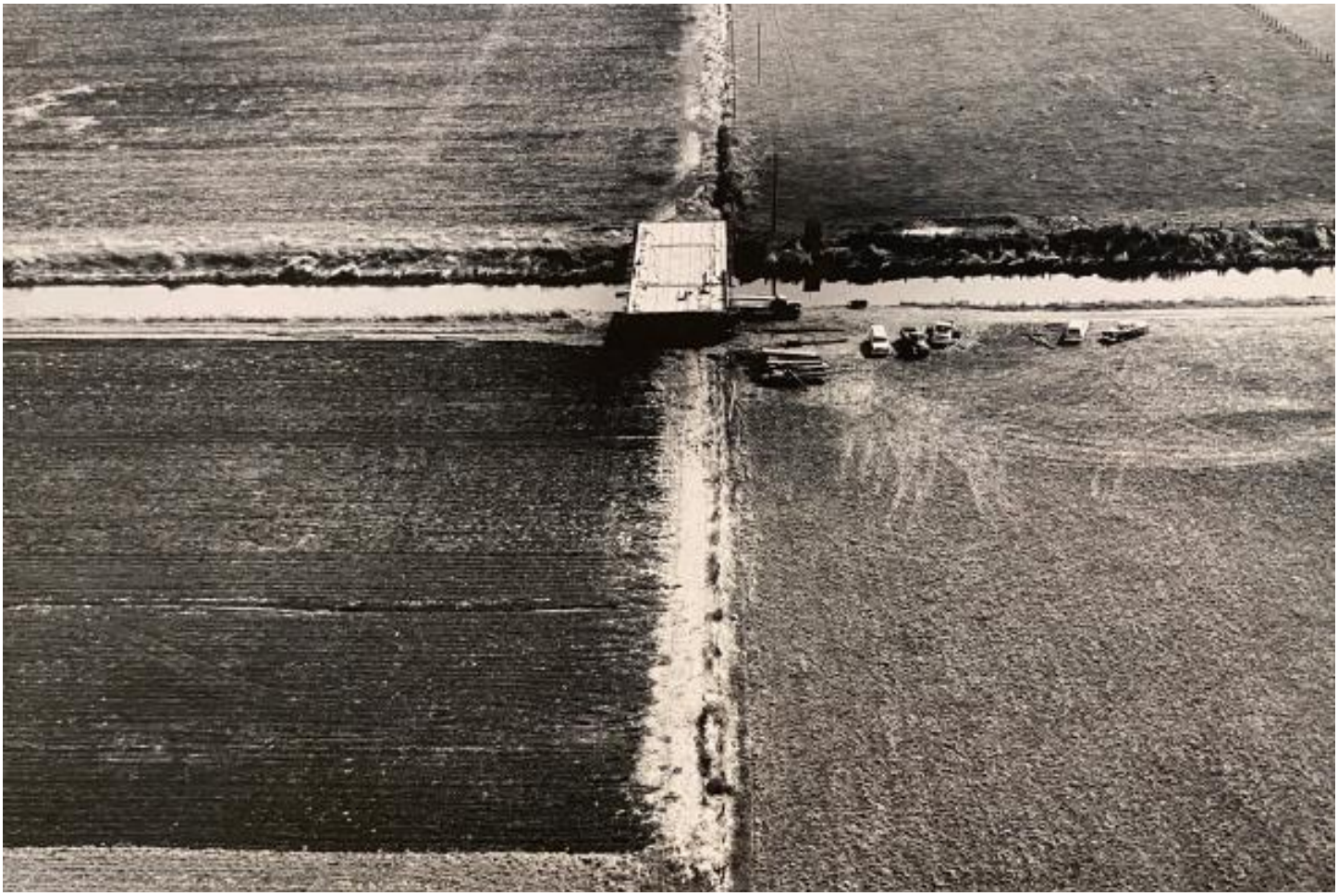
1965

The Sammamish River Improvement Project is completed.

In 1960, the U.S. Army Corps of Engineers determined that the Sammamish River was in need of additional flood control.

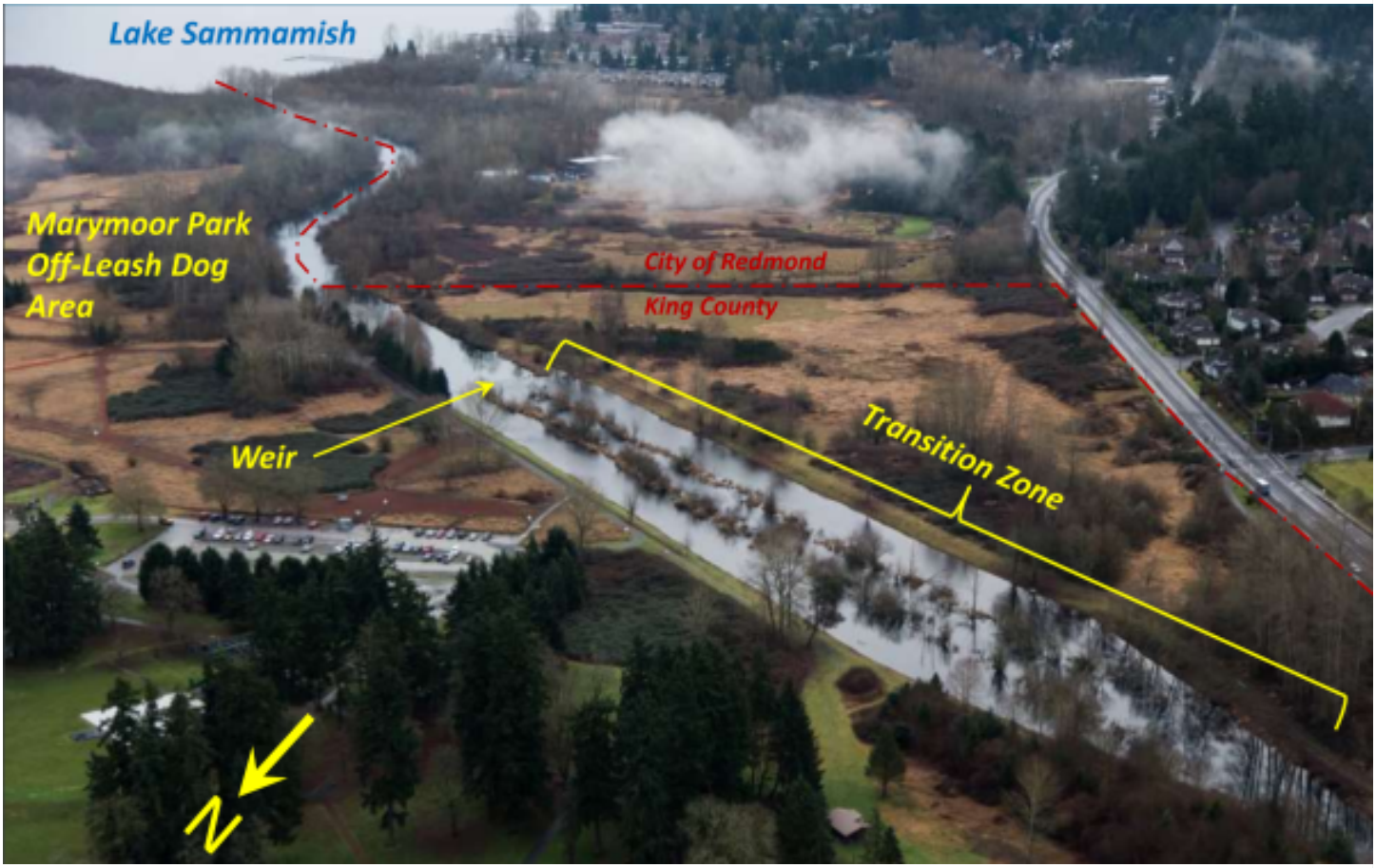
The Flood Control Act of 1936 declared flood control "a proper activity of the Federal Government." The Corps of Engineers were authorized to identify, plan, and design federally funded flood control projects.

In 1965, the Corps of Engineers completed the **Sammamish River Improvement Project** which lowered, widened, and straightened the Sammamish River. King County is responsible for maintenance of the project today.



Principally, the Sammamish River Improvement Project was intended to reduce the impact of seasonal flooding on agriculture in the Sammamish River Valley.

The project included weir construction in Marymoor Park, construction of a transition zone, straightening of the river downstream of the weir, river dredging, and bridge replacements.



The transition zone connects Lake Sammamish to the Sammamish River. It is designed to control spring and summer outflows from the lake. The transition zone includes a low concrete dam called a weir that raises the level of water upstream. Immediately downstream of the weir is a steep 1,400-foot section armored with rock that provides the hydraulic control for the lake at higher flows.

The transition zone is an extremely important ecological area for salmon and other fish and wildlife species. Over the years, King County and the Corps of Engineers have planted willows along the transition zone. Willows improve habitat for salmon, including Kokanee, an iconic species whose population is declining in the Lake Sammamish watershed.

The concrete weir controls lake outflow. A narrow notch in the middle of the weir provides upstream and downstream passage for salmon and other fish species in addition to canoes and kayaks. During high lake outflows, flow control shifts from the weir to the downstream transition zone. Overall, these efforts have been successful in limiting flooding in the Sammamish River Valley. In addition, the transition zone has reduced incidences of high and low lake levels.

In recent years, increased density of the vegetation paired with backwater effects from Bear Creek (a tributary of the Sammamish River) have decreased the transition zone's effectiveness at providing lake level control for extreme high flow events. The County has reduced overgrowth in order to help the transition zone control flooding effectively.

Since the 1965 completion of the Sammamish River Improvement Project, the river is considered a flood control facility and and is maintained by King County according to the River Improvement Operations & Maintenance Manual provided by the Corps of Engineers to King County.

King County controls vegetation in the transition zone to ensure it functions as expected. transition zone maintenance requires permitting on a five-year cycle and includes activities to clear obstructions to Lake Sammamish outflow to meet the project's flood performance standards. Maintenance activities include:

- Manually cutting willow trees with loppers both inside the navigation channel and on the landward side of the willow buffer, and on both sides of the river.
- Mowing the high-flow channel on the left and right banks, from the edge of the willow buffer to the top of the bank. If the

floodplain is dry enough, mowing also occurs under the willow branches, where accessible.

- Removing and disposing of all willow trimmings and grass clippings.

Recent Land Use

Late 20th Century and Early 21st Century

Development brings increased flood risks.

The tech industry brought rapid growth to the Sammamish River Valley.

The 1965 Flood Control Project reduced flood risk on agricultural land, but incidentally attracted commercial and residential growth along the river due to more favorable building conditions.

Since the 1980s, Microsoft and dozens of other large and small computer-related businesses have brought profound economic success to the region and along with that success rapid urban growth.

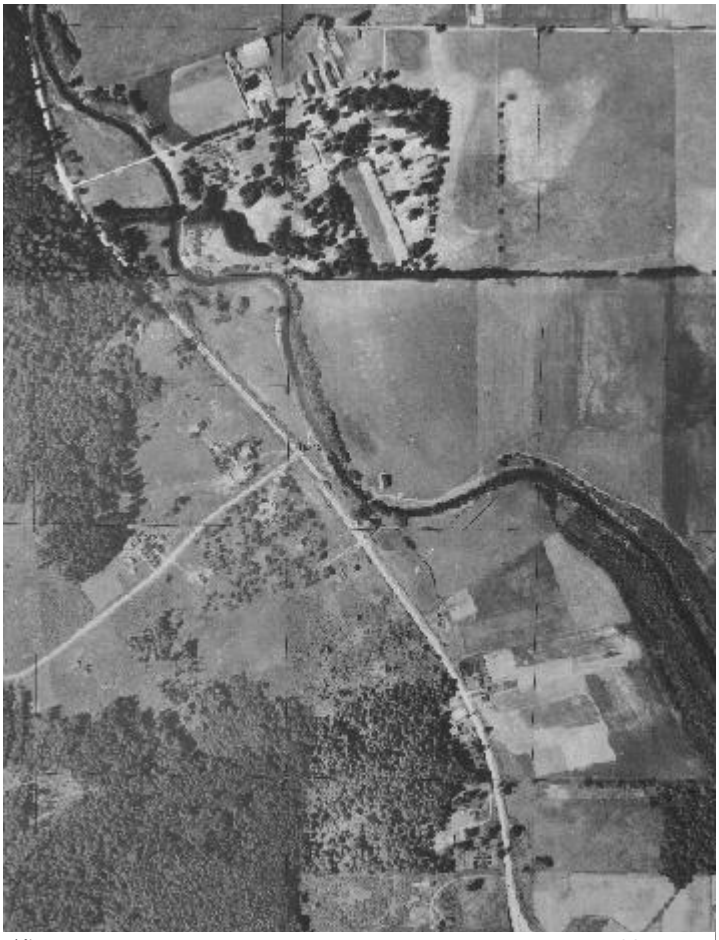
A significant portion of Redmond lies within the 100-year floodplain of the Sammamish River and its tributaries.

The population of Redmond has grown from just over 11,000 people in 1970 to more than 65,000 today with a daytime population of 135,000. Redmond residents tend to be younger, more ethnically diverse, and earn high salaries relative to the regional average.

Growing demand for employees at companies such as Amazon and Microsoft has brought with it increased demand for housing for the newly arriving residents. Redmond has faced pressure to rapidly develop housing for residents and amenities for the daytime working population.

As development continues to expand, flood protection and adherence to the original functions of the Sammamish River Flood

Control Project are of utmost importance to the County in order to reduce flood risks to its residents' safety and property.



1936 Imagery (left) | 2019 Imagery (right)

Swipe to view the Sammamish River Valley's changing landscape.

Activism paves the way for change.

The 1960s through 1990s were a time of radical change in the regulatory environment with the passage of the Clean Air Act of 1963, major updates to the Clean Water Act of 1972, Washington State Shorelines Management Act of 1972, Endangered Species Act of 1973, and the Washington State Growth Management Act of 1990.

Modern development now occurs in the context of laws to protect critical areas and salmon in our watersheds. Environmental activism and volunteerism surged in the 1980s through the 1990s as interest in conservation grew among the general public.

Several local organizations including Forterra (founded as Seattle-King County Land Trust, 1989), Mountains to Sound Greenway Trust (1991) and EarthCorps (founded as Cascadia Quest, 1993) have

spent three decades working to preserve land and restore the natural areas remaining within King County.

The County, along with cities, tribal organizations, Save Lake Sammamish, the Kokanee Work Group, Friends of Lake Sammamish State Park, and local branches of organizations like Trout Unlimited and Audubon have worked with volunteers tirelessly to restore the shorelines of the Sammamish River and Lake Sammamish.

Major project efforts have included the Mammoth Sammamish project, river weir reconfiguration in 1998, off-leash dog park plantings, and County projects to repair culverts and reconnect fish passages.

- The 1994 Mammoth Sammamish project improved fish and wildlife habitat in three reaches of the Sammamish River. The County set back, regraded, and planted native vegetation on the river banks to provide food, shade, and cover to a wide range of

fish and wildlife species. A tributary stream was reconnected to the river and logs and flow deflectors were installed in and along the margins of the mainstem channel to diversify flow conditions and improve habitat, especially for anadromous fish species (those which travel from the sea to rivers in order to spawn, such as most salmon species).

- ReLeaf projects were an annual community event that expanded on the work of the Mammoth Sammamish project through additional bank revegetation using native species. Revegetation efforts associated with both ReLeaf and the Mammoth Sammamish projects involved the participation of local cities and engaged over a thousand volunteers from across the region.

During the past 25 years, the **City of Redmond** worked to improve the Sammamish River, implementing 20 restoration projects, covering 1.7 miles of the river. The City's restoration efforts included removing invasive vegetation, installing more than 30-acres of native plants, re-meandering the river, installing log jams, regrading riverbanks, improving tributary mouths and fish passage,

and ongoing maintenance. The City is committed to restoring the entire length of the river within its boundaries. The next project will enhance the 0.5 mile stretch between the Northeast 90th Street bridge and the confluence with Willows Creek.

The **City of Bothell** hosted Sammamish ReLeaf projects from 1993-2017 along both banks of the river to remove invasive species and replant with native species. Volunteers included Bothell community groups, students, and residents from surrounding communities. Many of the projects were funded through the King Conservation District.

Bothell's Sammamish River Side Channel project in 2017 reconnected and restored 1,100 feet of an old remnant channel and floodplain of the Sammamish River. Goals included restoring about 8 acres of floodplain plant community diversity, creation of salmonid rearing habitat, and improved conditions for other species of fish, amphibians and wildlife. The project was funded in part through the Washington State Recreation and Conservation Office, Puget Sound Acquisition and Restoration, King County Cooperative Watershed Management, and the King Conservation District.

Future of the River

2022

How will this generation manage the Sammamish River?

What is the Capital Investment Strategy?

The **King County Flood Control District** has authorized the development of a Capital Investment Strategy that will be a multi-benefit plan to address contemporary flood, habitat, agricultural, and recreational issues related to the maintenance of the Sammamish River Flood Control Project.

The Capital Investment Strategy is being developed with public involvement and all are invited to participate. You can sign up to receive updates on public outreach activities by joining our email list.

This is a critical step in bringing maintenance practices for the entire Sammamish River up-to-date in a way that continues to provide flood risk reduction, supports the needs of area residents, and helps imperiled salmon.

Sammamish Capital Investment Strategy Goals:

1. Provide an updated capital investment and maintenance strategy for meeting the flood risk reduction, fish habitat, and navigability requirements of the River Improvement Operations and Maintenance Manual (O&M Manual), in a way that reflects current jurisdictional boundaries and regulatory requirements.
2. Work with river management partners to determine an implementation strategy for projects proposed in the **2002 United States Army Corps of Engineers (USACE) Sammamish River Corridor Action Plan**, developed to address habitat problems related to the original project design and construction.
3. Support a Corps of Engineers update to the O&M Manual that will facilitate implementation of these projects.

Are you interested in helping to shape the future of the Sammamish River? Find out more about upcoming opportunities to get involved and make your voice heard by joining our email list to receive notifications of project activities:

Receive Project Updates

Resources and Further Reading

20,000 Years in the Puget Sound	2012. University of Washington Burke Museum. YouTube Video.
The Natural History of Puget Sound Country	1995. Arthur R. Kruckeberg. Weyerhauser Environmental Books.

Sammamish River Corridor Action Plan. Chapter 1: Historic Conditions in the Sammamish Watershed.	2002. King County.
Topographic map of Puget Sound	1895. United States Geological Survey.
Waterlines Project	2016. King County and the Burke Museum.
Cedar-Sammamish Watershed	2016. Cynthia Updegrave. Published on HistoryLink.
Folk-Tales of the Coast Salish	2009. H. J. B. Birks and Hilary H. Birks. Lincoln: University of Nebraska Press.
Indian Lake Washington	1984. David Buerge. The Weekly.
Survey Plat Maps	Circa 1850-1890. General Land Office.
King County Land Use Survey – a Remarkable WPA Project of the Great Depression.	2002. Paula Becker. Published on HistoryLink.
Land Use and Aerial Surveys Project	1936. King County and Works Progress Administration. King County Regional Archives
King County Agricultural Production Districts	2018. Shannon Sawyer. Published on HistoryLink.
Sammamish Valley Agricultural Production District (APD) Subarea Plan	2005. King County.
Sammamish Slough Races	2019. Redmond Historical Society.
Flood Control Act of 1936	June 22, 1936, ch. 688, 49 Stat. 1570
Willowmoor Floodplain Restoration Project	Ongoing. King County Department of Natural Resources and Parks.

Flood control improvements, Sammamish River, Washington 1965. U.S. Army Corps of Engineers.

Operations and maintenance manual, volume I. U.S. Army Engineer District, Seattle, WA 1965. U.S. Army Corps of Engineers.