SEATTLE: DISCOVER AND EXPLORE PAST LANDSCAPES

THE WATERLINES PROJECT

COAST SALISH PLACE NAMES

VILLAGE SITES

A.	ƛ̕axʷadis	Place where something is grown or sprouts
B.	sluʔwił	Slough for testing thickness of a canoe hull
C.	šilšul	Threading or inserting something
D.	paq̓ač̓ałču?	Brush spread on water
E.	babaqʷəb	Prairies
F.	dᶻidᶻəlal̓ič	A place to turn around or to cross over
G.	t̓uʔəlaltxʷ	Herring house
H.	saʔcaqał	Water at the head of the bay
I.	səxʷt̓ičib	Place where one wades
J.	sq̓ʷuʔalqʷuʔ	Confluence of waters
K.	sq̓ʷuʔalqʷuʔ	Confluence of waters

WATER-RELATED PLACES

1.	sc̓abaltxʷ	Elderberry house
2.	sʔacus	Face
3.	sc̓ap	Crooked
4.	bəsč̓əƛ̕əʔ	Place of rock
5.	č̓alq̓ʷadiʔ	Bitter lake
6.	sisałtəb	A place to go to calm down
7.	x̌ʷəlč	Saltwater
8.	kʷaatəb	Place where people are sent
9.	liq̓təd	Place for red paint
10.	cəx̌əb	Place of dripping water
11.	č̓aʔalqʷuʔ	Channel watercourse
12.	dxʷƛ̕əš	Green lake
13.	wiwalqʷ	Large, having lots of water
14.	sbəłtədaq	Place to spirit journey
15.	wəq̓iq̓əb	Place of frogs
16.	gʷaxʷap	Outlet
17.	č̓axʷadqʷuʔ	Place where one whips the water
18.	sxʷacəgʷił	To lift a canoe
19.	statał	Fathoms
20.	łəp̓łəp̓	Hang or throw over
21.	x̌ax̌čuʔ	Small lake
22.	sk̓aʔaƛ̕alqʷuʔ	Water for land otter
23.	čagʷus	A trail descends into the water
24.	bulač̓	Where it emerges by bubbling
25.	x̌ʷuqʷiqʷayəqs	Yellowish, greenish rushes on the point of land
26.	tuʔawi	Trout
27.	c̓ayahus	Place of a supernatural monster "horned snake"
28.	sluʔwił	A marsh with channels where canoes could be pushed through
29.	cəq̓as	Place of spearing
30.	həʔapus	Draining creek over flat lands
31.	t̓alič	Frame for drying fish
32.	gʷal	Capsized
33.	pupyaləp	Little bends at the end
34.	gʷəx̌ʷaltxʷ	Untie the house
35.	x̌ačuʔ	Lake
36.	c̓ipc̓ip	Ducklings (something which emits a squeak or peep)
37.	spapłx̌ad	Marshes

Place names are stories: proof of presence, archives of meaning, evidence of ancestry, and a reference for treaties and other legal connections to territory. The place names on this map, written in the Lushootseed language of the Coast Salish people, 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 work of Southern Lushootseed consultants q̓ʷat̓ələmu (Nancy Jo Bob) and qəłtəblu (Tami Hohn).

Vital ecosystems ensure the health of our landscape and provide the structures that are key to the sustainability of critical habitats for fish, wildlife, vegetation, and ourselves. Coast Salish people harvested over 300 plants and animals from a diversity of carefully tended habitats. These species continue to be integral to the Coast Salish culture today.

This map is an interpretive photorealistic and hand-painted rendering of the Seattle area in the mid-19th century, just prior to non-Native settlement, based on mapping done by the Puget Sound River History Project. Continue to explore Seattle's landscapes through the tours presented on the reverse side of this map.

Waterlines is a project of the Burke Museum. Please visit us to learn more about Seattle's past landscapes: burkemuseum.org/waterlines

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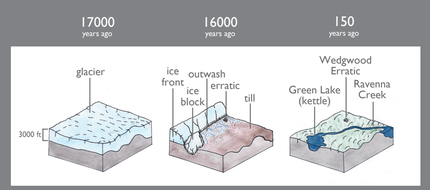
BURKE MUSEUM
Bill Holm Center for the Study of Northwest Native Art | BURKE MUSEUM
4 CULTURE
Seattle Public Utilities
Quaternary Research Center
W CENTER FOR AMERICAN INDIAN & INDIGENOUS STUDIES | UNIVERSITY of WASHINGTON
W UNIVERSITY of WASHINGTON | College of Built Environments | College of the Environment | School of Public Health
SIMPSON CENTER for the HUMANITIES
W SUPERFUND RESEARCH PROGRAM | ENVIRONMENTAL & OCCUPATIONAL HEALTH SCIENCES | SCHOOL OF PUBLIC HEALTH
UW Medicine | UW SCHOOL OF MEDICINE | CENTER FOR HEALTH EQUITY, DIVERSITY, AND INCLUSION
Seattle Office of Sustainability & Environment
King County Protecting Our Waters

GLACIAL TOUR

Green Lake, Ravenna

6 Miles
WALK
BIKE

Seventeen thousand years ago a 3,000-foot-thick wall of ice encroached from the north. As it spread across the landscape of what is now Seattle, the massive glacier deposited hundreds of feet of sand, clay, gravel, and large boulders. As the ice melted, the moving ice and erosion from glacial streams carved the landscape, leaving behind the region's hill and valley topography, lakes and waterways, and landslide-prone slopes. Coast Salish oral traditions refer to the end of the Ice Age. Today, one of the best ways to appreciate this icy history is to traverse the city's many hills. This tour takes you by many features formed by and during the last time when ice covered Seattle.



During the time the glacier advanced over and then retreated from Seattle, it left behind several distinct layers. A mixture of sediments called till was deposited beneath the ice. Streams of meltwater washing out of the glacier's ice front deposited sand and gravel called outwash. When the ice retreated, occasionally ice blocks were left behind that became kettle lakes such as Green Lake. The retreating glacier also deposited large rocks called erratics, the most famous of which is the Wedgwood erratic.

1a Green Lake

7201 East Green Lake Drive N

Green Lake is a kettle lake, formed by a piece of ice left behind from a retreating glacier. Sediment then filled in around the ice. When it melted, the depression left behind created the lake. In addition to the salmon run in the lake's outlet, which we now call Ravenna Creek, the lake was known for suckers and perch. In 1911, the lake level was lowered by 7 feet to create parkland.

1b Licton Springs (optional)

9536 Ashworth Ave N

Though a longer route, this freshwater spring is well worth the additional miles as an alternative start to the tour. A healing place with a long tradition of use, known for its thermal mineral waters and red mud, this one time private spa is now part of a public park. It is one of Seattle's modern place-names derived directly from Lushootseed.

Mineral Spring, Ravenna Park, 1903. [UW Digital Collections]

2 Ravenna Creek

Ravenna Park

Ravenna Boulevard follows the historic route of Ravenna Creek, which formerly flowed out of Green Lake through Ravenna Park and across what became University Village to Lake Washington. After Green Lake was lowered, the creek was directed into a sewer pipe, leaving only springs and seeps further downstream as source water.

3 Mineral Spring

Ravenna Park

At one time there were around 40 springs in what is now Ravenna Park. In 1911 the City of Seattle bought the park and significantly altered the landscape, and most of the springs disappeared or were capped. Because of the glacially derived soils, aquifers below ground store water which gets forced to the surface.

4 Roller Coaster Topography

NE 65th St

As you go east-west across Seattle, you will notice how you go up and down a series of ridges and valleys. The last glaciation produced the city's roller coaster landscape as it carved a series of north-south parallel ridges and troughs. Traveling north-south is generally easier as you travel along these gouges, rather than across.

Wedgwood Erratic.

5 Wedgwood Erratic

28th Ave. NE and NE 72nd St.

When the glacier that covered Seattle retreated around 16,000 years ago, it left behind the rock known as the "Wedgwood Rock." Geologists call these glacially carried boulders "erratics."

6 Ravenna Peat Area

Dahl Park

Bogs tend to form in shallow, poorly-drained, glacially-formed depressions. The tendency for flooding, and the settling peat soil, has impacted development around the Ravenna Peat Area, site of Dahl Park and the Picardo P-Patch.

From here you can return to Green Lake and experience the Roller Coaster Topography, or if bicycling, hop on the Burke Gilman Trail downhill, to the south, and connect to the Lake Tour.

Local bog.

colder/drier extremes
tundra and open forest
pine, sagebrush, mountain hemlock, spruce
glacier advances over Seattle
glacier reaches southernmost point and is about 3000 feet above Seattle
Puget Sound is freshwater for short time as glacier retreats
glacier retreats from Seattle area
Puget Sound turns saltwater

A PLACE TO CROSS OVER

Pioneer Square

1 Mile
WALK
BIKE

"A place to turn around or to cross over" is the Coast Salish name for present day Pioneer Square, long a center of human settlement. Formerly a wooded peninsula separated from the mainland at low tide by a sand spit, it was surrounded by the sea and a lagoon fed by a stream flowing from the hills to the east. A major Coast Salish village was located on this promontory. It had a strategic location above a small lagoon, with fresh water, easy access to the Duwamish River and estuary, and direct trail access to Lake Washington. Early Euro-American settlers saw similar advantages in the site, as well as the deep water anchorage just offshore in Elliot Bay. These settlers began to fill the lagoon and Duwamish estuary in 1853, shifting Pioneer Square's western shoreline nearly 500 feet west of its pre-1850 boundary. Vestiges of the deep past are still visible during a walk along the historic streets of Pioneer Square.

The shed-style longhouses of this central Coast Salish village are similar, though smaller, than those usually built further south, around Puget Sound, 1866. [Royal British Columbia Museum]

1 A Place to Cross Over

1st Ave S and S Washington St

At one time, the Coast Salish village located on this little promontory may have had as many as eight longhouses. By the 1840s, the village was abandoned, possibly because of epidemics.

2 Ballast Island

Pier 48, north of Main St

Ballast Island formed at the end of Washington and Main Streets in the late 1800s, when ships dumped their ballast before taking on cargo. It became a camping spot for Native American workers visiting Seattle or heading to the hop fields because they were excluded from staying in the city. Ballast Island was covered up in the late 1880s.

Indian camp with canoes, Ballast Island at the foot of Washington Street, 1891. [UW Digital Collections]

3 Tidal Stream

N of present day Washington Street

A small tidal stream ran into the lagoon that separated the promontory from the rising land to the north and east. This spot was the first to be filled with sawdust from Yesler's Mill at the foot of Yesler Way. Additional sawdust and other debris was used to fill in the lagoon over the next 30 years.

Looking North on Occidental from approximately at Main. Shaded area marks site of former tidal lagoon, 1871. [MOHAI]

4 Lagoon

Occidental Park

The lagoon provided important resources for people living nearby. Flounder were plentiful here. Peat deposits from the lagoon covered by layers of sawdust and debris can still be found underneath Occidental Park.

5 Profanity Hill

NE of Yesler Way and 3rd Ave S

Climbing up this grade will highlight why pedestrians, past and present, have referred to this slope up to First Hill as Profanity Hill. Turn back and consider how difficult it is to navigate Seattle's landscape and realize why early settlers were so eager to regrade the terrain.

6 Sand spit

Jackson St and 3rd Ave S

No longer visible, a sand spit stretched to the west. The sand spit separated the lagoon from the tidelands to the south.

Tide flats in Pioneer Square as seen from Dearborn and 12th, 1882. [Museum of History and Industry]

7 Fill

Seattle Waterfront and Downtown

Beginning in the 1870s, city engineers dramatically regraded Seattle's steep streets to provide easier access for people and horse-powered transportation.

hunting of mastodon and bison
full rebound of land after glacial retreat
climate warming, sea rising, drought and fire
earliest Seattle area archaeological site
Garry oak savannahs extend their range

RIVER TOUR

Duwamish River

17 Miles
BIKE
CAR

Tour Seattle's rivers. Although profoundly altered, in recent years the Duwamish River has been undergoing something of an ecological and cultural renewal. The 17 mile river tour goes through one of the few relatively flat areas of Seattle. In August 1916, the Black River, historically the outlet for Lake Washington and the Cedar River watersheds, dried up when the Montlake Cut lowered the level of Lake Washington by 9 feet and diverted the flow through the locks. Around the same time, the Duwamish River was straightened from a 14 mile meandering river to a 5 mile navigable waterway. Engineered changes to Seattle's shoreline destroyed the ecosystems and traditional food sources upon which local Native Americans relied. Nearly all wetlands disappeared in the Duwamish Valley. This land became Seattle's industrial and commercial heartland and an engine of economic growth for the city.

Rerouting of Rivers

Rowboats on the Black River. [UW Digital Collections]

1 Lake Washington

W Perimeter Rd and Rainier Ave

Stand at the present-day outlet of the Cedar River to Lake Washington next to the Boeing Plant. Before 1916, the lake shoreline was about a half mile to the south. The Black River, dried up by the city's reengineering, was then the outlet for Lake Washington. It flowed south to join the Cedar River, and then on to the confluence of the White River (now Green River) to form the Duwamish River.

2 Black River

Hardie Ave SE and Sunset Blvd

Travel south from the lake, through what were once wetlands, past the former confluence of the Black and Cedar Rivers. Follow the now vanished Black River on Hardie Ave SE around an old bend with the former river bank visible and past sites of historic Coast Salish villages.

3 Lahars

Green River Bicycle Bridge

Pass over the Green River, a few feet upstream of its confluence with what remains of the Black River. The playfields to the south are in what was historically a shallow lake. About 2,200 years ago you would have been in Puget Sound, the river's then-mouth being about ten miles upstream in Tukwila. Volcanic mudflows (lahars) from Mt. Rainier changed that, depositing the sediments that now form the Duwamish River valley bottom and shifting the river mouth northward.

Susan Point's Northwind Weir Legend, 1997.

4 North Wind's Weir

S 112th St off of Pacific Hwy, Tukwila

At North Wind's Weir, a rock outcropping is visible in the bed of the Duwamish River at low tide. This site has been important to Native people throughout the region. This is also the site of a project to create estuarine habitat for salmon, one of several restoration sites along the river.

Some of the original meanders of the Duwamish River were still visible in 1922 after dredging had opened up a straight, deepened waterway. All but one meander was filled to create industrial land. [Seattle Times]

5 Superfund

Dallas Ave S (oxbow) & 12th Ave S

Ride a curved street that follows a former oxbow lake. Pass by the former Boeing Plant 2 that "won World War II" by producing bombers. This area of the Duwamish River is a Superfund site, polluted from the river's industrial past. Its cleanup will restore habitats and revitalize surrounding communities.

6 T-107 Park & Duwamish Longhouse

4705 W Marginal Way & Duwamish Trail

Kellogg Island marks the only remaining natural bend in the river. At T-107 Park, artworks by Don Fels explore the site history, which has archaeological evidence of over 1700 years of occupation. Across the street: Duwamish Longhouse & Cultural Center – the first longhouse to be built in Seattle in 110 years.

First known sketch of the Duwamish River, looking upstream toward Mt. Rainier, 1854. [Yale Beinecke Digital Collections]

7 Tideflats

2130 Harbor Ave SW

End your tour at the "best view of Seattle," from Jack Block Park. Located just out of this sketch on former tidal flats, the park land was created from fill dredged from the Duwamish River in 1909 along with Harbor Island just to the East. Harbor Island was the largest artificial island in the world at the time.

sea level stabilizes, moderate climate (wet winter, dry summer)
salmon re-colonize local rivers
Osceola lahar (mudflow) from Mount Rainier, delta forms at Auburn

LAKE TOUR

Lake Washington, Lake Union

7 Miles
BIKE
BOAT

Lakes Union and Washington were created during the last glaciation. In the last 150 years, the lakes have been significantly impacted by the construction of the Lake Washington Ship Canal, along with industrial development and intense urban use. Nonetheless it is still possible to get a sense of the lakes before 1850, especially while traveling the water's edge in a canoe, a boat, or on a bicycle. This tour takes you to places along Lake Union and Lake Washington's Union Bay shore that best evoke its pre-settlement past, as well as significant sites of industrial and naval history.

1 Union Bay

3501 NE 41st St

Union Bay Natural Area was once open water surrounded by a freshwater wetland. After the lake was lowered by the city's reengineering, the area was filled with construction debris and garbage. The landfill has since been capped and is now a sanctuary for birds and wildlife. Across the bay, Foster Island, a significant Coast Salish cultural site, can be seen. "Slough for testing thickness of a canoe hull" was an important village site with at least five longhouses and a large fishing weir on Ravenna Creek. Remains of that weir were exposed when Lake Washington was lowered in 1916, but were soon destroyed.

Montlake Cut, 1916. [UW Digital Collections]

2 Montlake Cut

Montlake Blvd NE

People have been crossing this isthmus for centuries, aptly called "To lift a canoe." For a time there was a small log flume here. In 1916, the 'cut' was dug to connect the two lakes for the ship canal, dropping Lake Washington's level by 9 feet to meet the existing level of Lake Union.

Doctor James Zakuse and family, 1880s. [UW Libraries Special Collections]

3 Doctor James Zakuse

Zakuse was known as a doctor for his status as a shaman. He and his family were some of a few remaining Coast Salish people living in the Lake region when the University of Washington campus was built beginning in 1894. They later moved to the Lake Sammamish area.

Lake Union gasworks and Capitol Hill, 1909. [MOHAI]

4 Industrial Lake Union

Industry has long been a significant part of Lake Union and Seattle history. The lake has transitioned through logging, manufacturing, military, and now biotechnology and hi-tech. Identified as a potential park by the Olmsted Brothers, Gas Works Park was designed by Rich Haag. The park is a seminal reclamation project highlighting the industrial past.

Salmon Bay Charlie's house before the building of the Hiram Chittenden Locks, 1905. [UW Digital Collections]

5 Hiram M. Chittenden Locks

Construction of the locks linked Lake Washington and Lake Union to Puget Sound and the Pacific Ocean. The engineering project had enormous economic, social, and ecologic impacts on the Seattle region. Opening up the inland freshwater lakes resulted in the lowering of Lake Washington and the demise of the Black River.

1792 Vancouver exploration
1851 Denny Party settles at Alki
1855 Treaty of Point Elliott
1890s informal regrading
1901-1904 failed Beacon Hill regrade (fill to SODO)
1903 Olmsted Master Plan
1906 White River diverted by flood and log jam
1907 - 1910 Jackson Regrade (fill SODO and Harbor Is)
1908 - 1911 Denny Regrade I (waterfront side)
1909 Harbor Island
1911 Dearborn Regrade (fill of SODO and Harbor Is)
1913-1930s Duwamish River straightened
1916 Lake Washington drops and Black River disappears
1917 Lake Washington Ship Canal opens
1928 - 1931 Denny Hill Regrade 2

earliest shell middens in Seattle
tools for making cedar canoes and plankhouses in archeological record
modern plant communities are well-established, with active management of resources
Mount Rainier erupts, sediment from lahars advance the delta to Tukwila
Duwamish delta reaches present location
earthquake on the Seattle Fault raises part of the Duwamish Valley 20 feet and spawns a tsunami in Puget Sound
wapato processing near the Black River
epidemic diseases

TIMELINE KEY: physical processes flora and fauna people

20000
19000
18000
17000
16000
15000
14000
13000
12000
11000
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
present
years before present

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