

Seattle's Only River

Running from the crest of the Cascade Mountains to Puget Sound, the Duwamish River was historically an important source of fish and shellfish for Native people. Starting in the 1800s, changes brought by agriculture and industrialization altered the watershed radically, reducing salmon runs and polluting the water and adjacent land. The consequences of these changes represent environmental injustice for many people and have led to significant health disparities.

History

Eighteen thousand years ago massive ice sheets covered Puget Sound. As they melted, plants and animals began to appear on the landscape, and people followed soon after. The first people to settle the area arrived from across the Bering Strait more than 12,000 years ago. Descendants of those earliest settlers became members of the Duwamish, Muckleshoot, Suquamish, Swinomish, Lummi, and Tulalip Tribes, all of which still exist today. The Duwamish River has been, and continues to be, an important source of salmon and shellfish for indigenous people.

Settlers of European descent began to arrive in the Duwamish Valley in the mid 1800s. Over the next 150 years these settlers and their descendants reshaped the Duwamish Watershed using dynamite and makeshift levees to divert floodwater away from buildings and croplands, to make ship canals to transport goods for industry, and to fill tidelands for development. As part of this effort, the meandering Duwamish was dredged and straightened into the Lower Duwamish Waterway visible today.

Industry's toxic legacy

Many of the industries along the Duwamish used it for waste disposal starting in the late 1800s. Up until after World War II pollution of the river was largely unregulated. In addition to sewage, the river was polluted by chemicals and heavy metals from industry known to harm people and wildlife. These include arsenic, dioxins, furans, carcinogenic polycyclic aromatic hydrocarbons (cPAHs) and polychlorinated biphenyls (PCBs). These compounds have been associated with a range of health effects from cancer to immune system disruption to developmental problems in children.

Routes of exposure

Although people still fish in the Duwamish River, no fish or shellfish in the river are free of toxic chemicals. All the fish who live in the river year-round are considered too contaminated to eat. Even the baby salmon who only spend a few days or weeks in the Duwamish on their way to the ocean have been found to have high levels of PCBs in their bodies. Still, because they spend a relatively short period in the river, salmon are the healthiest fish from the Duwamish River to eat.

Along with its aquatic animals, Duwamish River sediments are also contaminated from generations of toxic waste disposal. No less than 42 different toxic chemicals are found in the river in concentrations that exceed safe levels for health. Some are found nearly everywhere throughout the site and some are found only in a few areas.



Who is most at risk?

For many tribal communities cultural and spiritual measures of wellbeing depend on having access to sacred places and foods like the Duwamish River and its animal life. Although food from the Duwamish is now contaminated, individuals in those communities may choose to eat it anyway for broader health reasons.

Many immigrants who live in the Duwamish Valley also eat fish from the Duwamish River because it's a traditional way to obtain cheap, healthy, delicious protein and a relaxing way to connect with nature.

People who spend time in the sediments along the river bank are also at risk of exposure to harmful chemicals. Young children are particularly susceptible as they may get sediments in their mouth while playing on the beach.

The costs of being a city

Much of the industrial activity along the Duwamish River benefits many people both within and outside Seattle. The production of asphalt and airplanes are an example. However, the costs of those industries—sometimes referred to as the “costs of being a city”—are concentrated in neighboring communities where levels of pollution and noise are high and the cost of living low. A low cost of living attracts a diverse population including immigrants, artists, and others who add to the cultural vibrancy of a city. It’s unfair for these people (or any people) to bear more than their share of the “costs of being a city.”

River restoration

In 1980, a new law passed that required the U.S. government to identify and cleanup the country’s worst toxic waste sites. In 1983, Harbor Island and the stretches of the Duwamish River on either side of it were one of the first sites to be listed as what became known as a “Superfund” site. In 2001, plans for cleanup expanded to cover the whole five mile stretch of the Duwamish River closest to Puget sound. Four “responsible parties” were identified—groups who caused the pollution and were now liable for cleaning it up. These groups were Seattle and King County Utilities, the Port of Seattle, and the Boeing Company.

Cleanup of the Duwamish River requires efforts to stop the pollution coming into the river and to eliminate the pollution already in the sediments. For the first, governments have had to regulate polluting industries and also upgrade a system of sewage and stormwater disposal that used to allow three hundred million gallons of contaminated water into the river per year. For the second, heavy equipment has been used to dredge out contaminated sediments and ship them by barge and train to a waste disposal site in Eastern Washington. Levels of PCBs in surface sediments are now half of what they were at the time of the river’s listing as a Superfund site. Yet there are still decades to go before cleanup is complete.

What can you do?

- Volunteer for a restoration event. The Duwamish River Community Coalition organizes several of these a year: <https://www.drcc.org/>
- Visit the Duwamish Longhouse to learn more: <https://www.duwamishtribe.org>
- Write letters to policy makers: <https://www.ucsusa.org/resources/how-write-effective-letter-your-policy-maker>

Vocabulary

Shellfish: An aquatic shelled mollusk such as an oyster or clam or a crustacean such as a crab or shrimp.

Watershed: An area from which rainwater and snowmelt drain into a network of creeks, streams, and rivers that feed a body of water such as an ocean.

Environmental injustice: A set of actions that harms the environment and a community or group of people who were not primarily responsible for the harm.

Health disparity: A higher rate of disease or injury experienced by certain groups of people due to disadvantages associated with income, race, ethnicity, or social status.

Arsenic: A naturally-occurring heavy metal used in industry to make alloys among other things. Exposure to arsenic can cause cancer, developmental problems, diabetes, lung disease, heart disease, and kidney failure.

Dioxins and furans: Chemicals produced as a byproduct of industrial practices like burning trash or bleaching paper. They are slow to break down in the environment and are highly toxic, causing cancer, reproductive and developmental problems, and damage to the immune system, among other things.

Carcinogenic polycyclic aromatic hydrocarbons (cPAHs): Chemicals produced during the burning of coal, gas, wood or other substances. Breathing or eating cPAHs may cause cancer or problems with the eyes, kidney, or liver. Carcinogenic means cancer-causing.



Polychlorinated biphenyls (PCBs): Chemicals used in industry as coolants or in paper production among other things. Production of PCBs was banned in the U.S. in 1976 for causing cancer, but they are “persistent organic pollutants” and can stay in the environment for long periods. Because they last so long, PCBs are still widely used in industry.

Sediments: Soil, clay, rocks, and organic matter that settle to the bottom of a body of water. Many chemical contaminants are concentrated in the sediments of the Duwamish River. Removing sediments is a primary method used as part of river restoration.

Superfund site: Locations polluted with hazardous materials that have been identified by the U.S. Environmental Protection Agency as meeting the requirements for listing under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980. This makes the parties responsible for pollution responsible for funding clean up.

Photo on front page by Alex Montalvo. Photo on back courtesy of the Duwamish River Community Coalition