



5-2021

## Vignette 18: Bellingham Bay, Legacy Contamination Under Repair

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### Recommended Citation

Klein, O. (2021). Bellingham Bay, Legacy Contamination Under Repair. In K.L. Sobocinski, State of the Salish Sea. Salish Sea Institute, Western Washington University. <http://doi.org/10.25710/vfhb-3a69>

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# 18

## BELLINGHAM BAY, WASHINGTON: AN EXAMPLE OF LEGACY CONTAMINANTS

Olivia Klein, Salish Sea Institute

*This vignette draws information primarily from an interview with Ian Fawley at the Washington State Department of Ecology and the agency's website on Bellingham Bay cleanup.*

There are thousands of contaminated sites in the Salish Sea region, causing environmental and economic impacts to people and wildlife. From estuarine deltas to urban shorelines, years of milling, manufacturing, landfilling, and a variety of industrial and municipal activities have contributed to extensive contamination of shorelines and associated waterways.

Bellingham Bay, home to twelve designated hazardous waste cleanup sites, is one example that illustrates the harm of past practices as well as the effectiveness of cleanup efforts. Since 2000, the Bellingham Bay cleanup has focused on

the removal of contaminated sediment and soils introduced from a wide variety of sources, including construction and other industrial and municipal activities. Bellingham Bay cleanup is managed by the Washington State Department of Ecology (under the authority of Washington State's Model Toxic Control Act) in coordination with a multi-agency Bellingham Bay Action Team.

Prominent on the waterfront of Bellingham Bay, and often listed as a key contributor of the contaminated sediment and soils in the Bay, are the remains of the Georgia Pacific pulp and paper mill. The factory closed its doors in 2007, leaving behind several pollutants still detected today, including heavy metals, petroleum hydrocarbons, volatile organic compounds, and dioxins/furans. But contamination in the Bay goes well beyond the mill.

Former shipyards with contaminated soil and groundwater account for three of the twelve contamination sites in Bellingham. Other sites include a rock-crushing plant in operation from 1963 to 1992, a frozen food processing company that existed from 1946 to 1959, and a seafood processing plant in operation since 1959 (and still in operation). All are linked to the presence of hazardous substances in Bellingham Bay's marine sediment.

It's not just manufacturing—historic landfill practices contribute additional contaminants to Bellingham Bay. For example, an historic 13-acre landfill near the Old Town district of Bellingham

operated in the early 1900s. Property owners filled portions of the site with dredge spoils and other materials to increase usable upland areas, and dumping of municipal waste followed. Landfill disposal practices of the time were vastly different than today, leaving a legacy of contamination.

The collective activities resulted in soil runoff, contaminated groundwater, and particulates like dust and smoke settling from the air, eventually finding its way into Bellingham Bay. Combined with stormwater outfalls carrying surface-born contamination, these pollutants and processes add



Shoreline cleanup and restoration at Bellingham Bay  
Photo: Washington State Department of Ecology



Dredging of contaminated sediment  
Photo: Washington State Department of Ecology



to the collective annual cost of approximately \$16 billion in environmental degradation of sediments in the United States, according to the EPA.

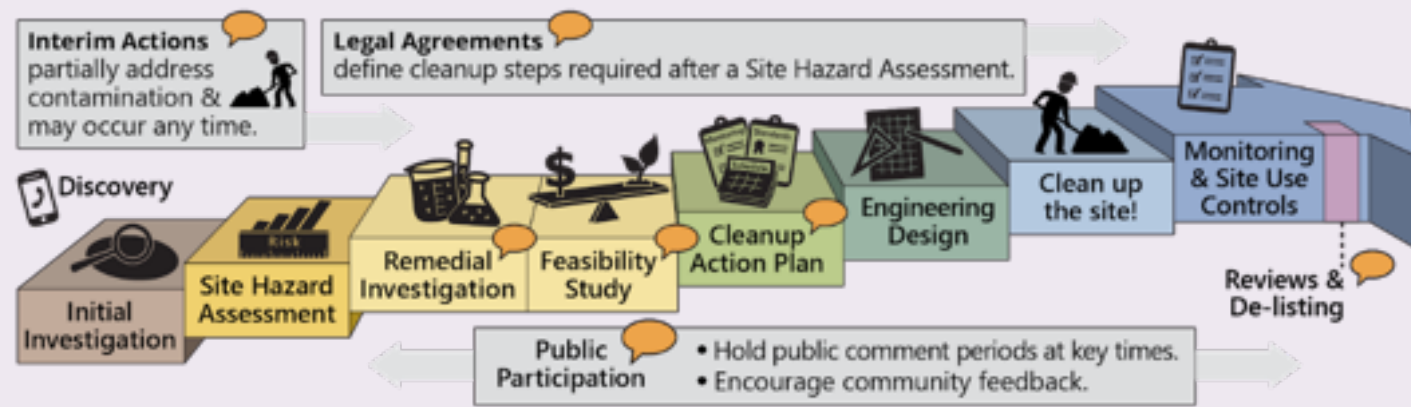
Fortunately, restoration efforts are taking place, bringing hope for a cleaner future in the Salish Sea. Bellingham Bay's twelve individual cleanup sites (see chart at right) each have different needs depending on the severity and type of pollution, as well as levels of engineering and management complexity. Management processes for the cleanup sites fall into three categories: the construction of a multi-layered capping system, the treatment of contamination in place, and contamination removal.

Cleanup is legally and technically complicated, costly, and time consuming. From 2017-18, the Washington State Department of Ecology managed the removal of 14,500 cubic yards of sediment, 3,200 cubic yards of contaminated soil, 36,900 square feet of over-water

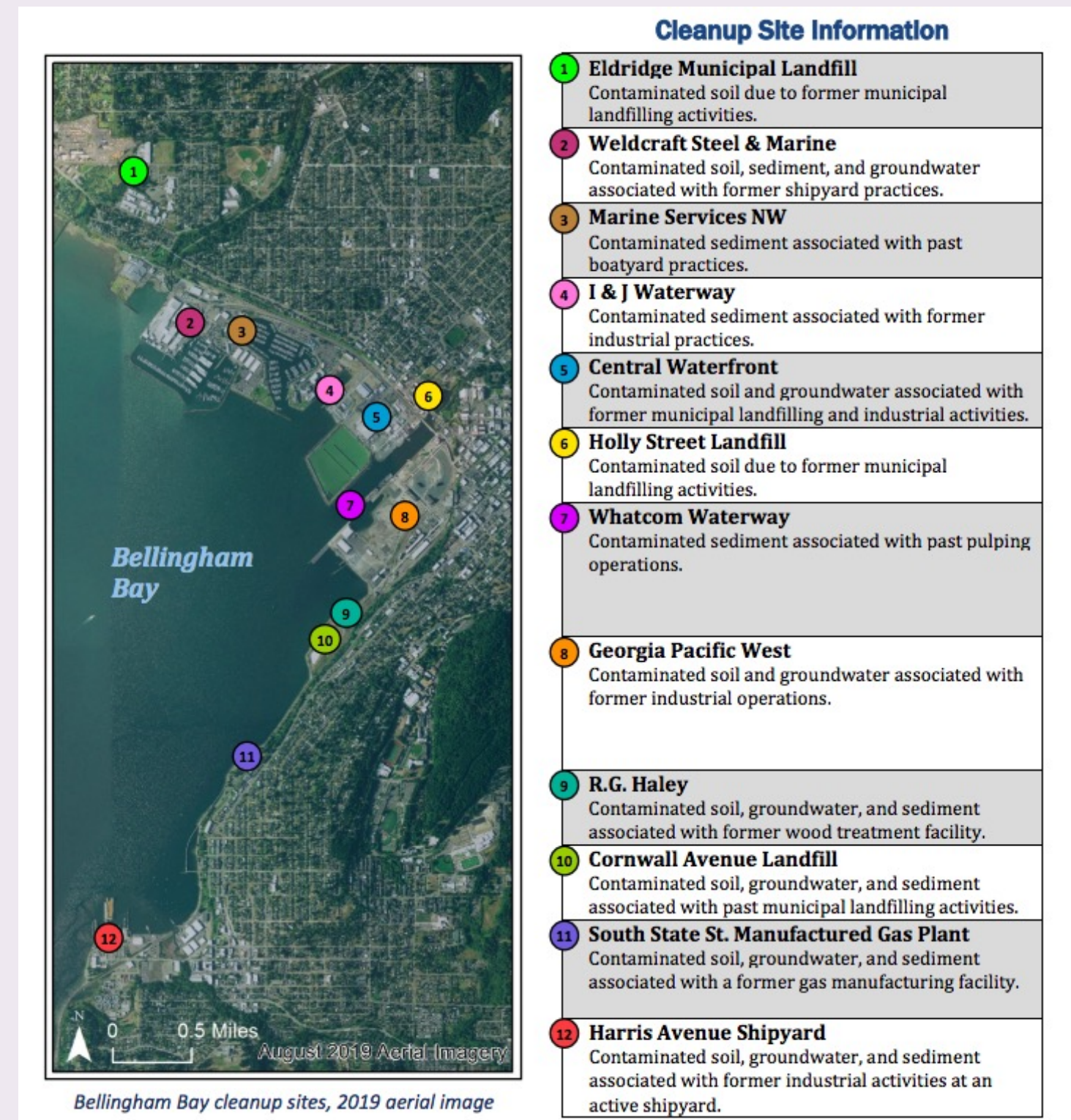
structures, and 905 creosote-treated pilings. This work was followed more recently by additional planning and cleanup documents to prepare for construction in 2021 and beyond. Supporting work includes legal agreements, a remedial investigation/feasibility study, two cleanup action plans, and two engineering design documents (see process diagram below).

Today, two of the original twelve sites have been completely cleaned up, and most of the other ten are on their way to completion within a few years. Additionally, the removal of legacy contaminants from some of the sites means they will not migrate to the marine waters of the Salish Sea, further protecting biota.

Although Bellingham Bay cleanup is not yet complete, it is significantly cleaner today than 20 years ago and a step closer to regenerative use of Bellingham Bay shorelines and the connected marine waters.



Stages of cleanup of contaminants in Bellingham Bay. Source: Washington State Department of Ecology



Sites cleanup of contaminants in Bellingham Bay. Source: Washington State Department of Ecology