



The Herring River tidal restoration will not affect the Wellfleet landfill

Wellfleet began dumping domestic waste in a large isolated freshwater wetland on Coles Neck in 1938. This became the Town's "sanitary landfill" where waste was buried until 1992.

From a 1988 study:

There was a plume of contaminated groundwater below and west-southwest of the Wellfleet landfill.

- The plume contaminants were as expected in leachate from domestic waste.
- The plume was high in ammonium-nitrogen, most likely leaching from the lagoons where septic waste was dumped for decades.
- The plume contained volatile organic compounds (VOCs), probably from paints and other household solvents. However, VOCs were well (orders of magnitude) below the concentrations that EPA considers chronically or acutely toxic to freshwater or marine life, indicating little environmental risk. The 1988 study did not find the landfill plume within the Herring River flood plain.

In 2005, the landfill was covered with an impermeable cap to block the percolation of precipitation through the deposited waste. Subsequent monitoring (2008-2015) has shown that leachate generation has already decreased in deep wells downgradient of the landfill. One VOC, 1,4-dioxane, persists at low concentrations in some wells. This compound, common in landfill leachate, is classified by EPA as a likely carcinogen, but of low toxicity to aquatic life. No federal maximum contaminant level (MCL) has been established for 1,4-dioxane in drinking water.

Hydrodynamic modeling for estuarine restoration indicates that surface flow will be limited to the flood plain and will remain at the present distance of at least 500 feet from the capped landfill.

Modeling also shows little change in the average water level in Herring River wetlands; therefore, since water levels in the river influence the movement of groundwater, tidal restoration should have little to no effect on plume location or movement.

In brief, there's no evidence that the landfill plume reaches the river. Most recent analysis of nitrogen isotopes in river water indicates that in fact it does not. However, even if it does reach the estuary:

- it has been doing so for decades;
- contaminant concentrations even in the 1980s, before landfill capping, were far below concentrations of concern to aquatic and marine life according to EPA standards;
- continued monitoring shows that contaminants have decreased even further since the 2005 capping; and
- tidal restoration will only act to dilute any residual contaminants to a much greater degree than those contaminants are diluted now. Model results show that the estuary above High Toss Road will flush about 20 times faster than it does today.