Friends of Herring River

Herring River tidal restoration and 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.

A 1988 study for the Town found groundwater contamination west-southwest of the landfill. Contaminants were as expected from domestic waste. Ammonium was high, likely leaching from lagoons where septic waste had been dumped for decades. Volatile organic compounds (VOCs), probably from paints and other household solvents, were also present but well below concentrations considered by the Environmental Protection Agency to be chronically or acutely toxic to freshwater or marine life, indicating little environmental risk. The 1988 study sampled for, but did not find, pollution indicative of landfill leachate in the surface waters of 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 has shown that leachate generation has already decreased to nearly undetectable levels in deep wells down-gradient of the landfill. This indicates that the landfill capping has been successful.

Recent hydrodynamic modeling of tidal restoration indicates that surface water flow will be limited to the Herring River 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 <u>average</u> water level in Herring River wetlands. As a result, tidal restoration will have no effect on groundwater levels and flow, and thus on contaminant location and movement, at the landfill hundreds of feet away from tidal surface water.

There is no evidence that landfill leachate currently reaches, or ever has reached, the river. Though it is difficult to prove a negative (no impact), recent analyses of stable nitrogen isotopes in Herring River water does not show the diagnostic signatures of landfill or septic leachate (A. Mittermyer, Provincetown Center for Coastal Studies, personal communication); nitrogen isotopic ratios are nearly the same upstream and downstream of the location of groundwater discharge from the landfill site.

In addition:

- contaminant concentrations even in the 1980s before landfill capping were far below concentrations of concern to aquatic and marine life according to Environmental Protection Agency 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, if they exist, to a much greater degree than those contaminants are diluted now. Model results show that the estuary above High Toss Road will flush about <u>20 times faster</u> than it does today.