BLUEFISH RIVER
SEPTIC SYSTEM
REMEDICATION PROJECT

A Problem With a History

Shellfish harvesting has long been a commercial and recreational staple in the town of Duxbury. Approximately $700,000 worth of shellfish are harvested annually. However, these shellfish beds are being threatened by bacterial contamination. The Massachusetts Division of Marine Fisheries (DMF) closed portions of the softshell clam beds at the mouth of the Bluefish River in 1984 and 1991 due to high fecal coliform bacteria counts. Today, 85 acres remain closed containing an estimated $243,000 worth of shellfish.

Because of the importance of shellfishing in Duxbury, researchers from the DMF walked the shores and tested the waters of the Bluefish River searching for sources of bacterial contamination. The scenic Bluefish River is a shallow, mile-long tidal river that drains into the northwest portion of Duxbury Bay, which forms the northern part of the tri-town Duxbury, Kingston, Plymouth embayment. Much of the river is surrounded by marshes that the town has set aside for wildlife conservation. But the watershed also contains residential and light commercial areas, all of which are potential pollution sources.

The researchers found that the highest concentrations of bacterial pollution were originating from three buildings on Washington Street at the mouth of the Bluefish River. All three buildings, two of which are residential, are of historical significance. The Cable House, built in 1869, served as the terminus for the French Atlantic Cable. The Drew House, built in 1826, is now the headquarters of the Duxbury Rural and Historical Society. Unfortunately, the houses are built on filled salt marsh which floods regularly, overburdening their septic systems, and sending sewage into the river. The problem was severe enough that the DMF closed the shellfish beds at the mouth of the river until the septic systems could be fixed.

Seeking a Solution

Because the houses were built on a salt marsh, the owners could not hope to construct a septic system that would meet minimum wetlands setback or groundwater separation regulations. Therefore, the town was faced with either declaring these historical buildings uninhabitable, or constructing a costly system to pump the effluent from the buildings away from the river basin. They decided on the latter option. In 1993, the Baywide Committee, an advisory committee comprised of representatives from Duxbury, Kingston, and Plymouth, received a $32,000 grant from the
Massachusetts Bays Program to review a list of preferred alternatives and to design and bid the preferred alternative to eliminate the pollution and hopefully allow the town to reopen the shellfish beds.

Sharing Remediation

The town chose to build a "shared" sewer/septic system designed by Weston and Sampson Engineers, Inc. of Peabody, MA. Effluent from the three buildings will first flow down to a grinder pump. The pump sends the ground-up sewage through a 2.5 inch pressure main to a septic tank. A pressure dosing system will distribute effluent throughout the leaching field.

To proceed with the project, the town needed the cooperation of local land owners. The nonprofit South Shore Conservatory of Music, whose system also required upgrading, generously allowed the town to use its property as a leaching field. The town also has worked out easement and covenant agreements with property owners whose land the system will traverse.

The Duxbury Town Meeting authorized a $150,000 bond to construct the new system. The town will fund 25% of the cost through increases in shellfishing license fees. The owners of the three houses will pay back the remaining costs through betterments assessed to their property. Construction was completed in June, 1996.

Planning for the Future

Capitlizing on its new knowledge and experience, the town has also built a similar shared septic system at Snug Harbor. Like the Washington Street houses, the properties are built on reclaimed marsh land where the water table is high. Sewage from these buildings will be pumped to a leaching area underneath a local golf course. Construction of this system began at the same time as the Washington Street project. It will be funded completely by betterments assessed to the properties involved.

Y our R ol e

Nonpoint source pollution includes the pathogen pollution discussed above plus toxics from other sources, such as motor oil. It is a product of our modern lifestyles. There is a lot that you can do to ensure a cleaner and healthier coast by making simple changes in your daily habits. Please help us reduce nonpoint source pollution now.

- Maintain your septic system
- Encourage your community to protect land close to waterways to catch rain and to filter polluted water
- Properly dispose of used motor oil
- Always use pump-out stations to dispose of boat sewage, and never throw garbage overboard
- Replace toxic chemicals you use in your home, on your yard, and at work with environmentally safe alternatives
- Limit impervious surfaces in your yard

More Information

For more information on the Bluefish River septic system remediation project, please contact Joe Grady, Conservation Administrator for the Town of Duxbury, at (617) 934-1104. Or, call the Massachusetts Bays Program at:

(800) 447-BAYS

The Massachusetts Bays Program
100 Cambridge Street, Room 2006
Boston, MA 02202

The Massachusetts Bays Program is a Cooperative Venture of the Massachusetts Executive Office of Environmental Affairs, Office of Coastal Zone Management and the U.S. Environmental Protection Agency, New England.