

North Cape Oil Spill Restoration



Rhode Island Department of Environmental Management
National Oceanic and Atmospheric Administration
U.S. Fish and Wildlife Service

Fish Passage Restoration Program

Highlights

The project selected was to enhance a river herring run in the Pt. Judith Pond watershed, thereby increasing forage fish populations helping to sustain recreationally and commercially important fish species such as striped bass, bluefish and summer flounder, as well as other fish and wildlife

A pool-and-weir structural fishway was completed in 2006 allowing alewife to access high quality spawning and nursery habitat in 220-acre Indian Lake in South Kingstown, Rhode Island



Background: On January 19, 1996, the tug *Scandia* and barge *North Cape*, carrying 3.9 million gallons of two blends of No. 2 fuel oil, grounded off Moonstone Beach in South Kingstown, Rhode Island. Approximately 828,000 gallons of oil were released to coastal waters. With high winds and heavy wave action, the oil was carried into sediments and throughout the water column, spreading throughout Block Island Sound and South County coastal salt ponds. The spill resulted in significant loss of lobster, surf clams, birds, and other aquatic biota including finfish, and the widespread oiling also closed recreational fishing for several months.

Addressing Finfish Injury and Lost Recreational Fishing: Trustee agencies including the Rhode Island Department of Environmental Management (RIDEM), National Oceanic and Atmospheric Administration (NOAA) and U.S. Fish and Wildlife Service (USFWS) have been responsible for addressing the resource injuries and lost uses resulting from the *North Cape* spill. The Trustees, along with public input, considered a number of alternatives for addressing loss of finfish and the extended closure of the local recreational coastal fishery. The selected alternative for addressing these impacts was to restore passage of anadromous fish species such as river herring to access their freshwater spawning grounds.

Alewife (*Alosa pseudoharengus*) and blueback herring (*Alosa aestivalis*), collectively known as river herring, are an essential part of Rhode Island's coastal ecosystems. These anadromous fish provide a forage base for a variety of fish and wildlife both in the ocean, where they spend most of their lives, and in the rivers and streams they ascend each spring to spawn. Unfortunately, many of Rhode Island's rivers and streams have been historically dammed, preventing river herring from reaching essential upstream spawning grounds. These migration blockages have not only impacted herring stocks and their fisheries, but also the fish and wildlife that readily



prey upon them, including many commercial and recreational fish such as striped bass, bluefish, and summer flounder. In southern New England, adult river herring ascend waterways in early April through June. Alewife prefer pond and lake habitat for spawning, while blueback herring typically spawn in flowing waters. Juveniles remain in the nursery throughout the summer, out-migrating to the ocean from July through November. Juveniles then remain in coastal waters, returning as adults to their natal waters after 3 to 5 years at sea.

The Trustees investigated fish blockages on several streams draining to the South County salt ponds, and targeted the Saugatucket River, which discharges to Pt. Judith Salt Pond, for restoration. Although an existing herring run is present on the Saugatucket River, the run size is substantially smaller than historic levels prior to the construction of multiple dams on the river. Indian Lake, a 220-acre shallow waterbody, located in the upper 12-square mile Saugatucket River watershed and formed in part by an earthen berm with stone spillway, was identified as an important site for providing alewife access to expansive, high quality spawning and nursery habitat.

Indian Lake Fishway Project: Indian Lake dam, a 1000-foot long and 12-foot high structure, and 35-foot wide stone spillway outlet where the fish passage need was identified, is located four river miles upstream of Point Judith Salt Pond in Wakefield. Fresh Meadow Brook discharges from Indian Lake and flows into the Saugatucket River. The project site is situated on privately-owned property, and the Trustees worked cooperatively with the residential community landowners to explain the purpose and function of the fishway, and secure from them an approval of the fishway design and an easement to both construct and permanently maintain the fishway. This project could not have happened without the much appreciated support by the property owners and other lakefront community residents.

The project included installation of a 90-foot long pool-and-weir fishway to allow both upstream access during the spring adult migration, as well as out-migration by adults and juveniles during the summer through fall. Concrete weirs, each with 6-inch wide slots to facilitate fish passage, form pools where migrating fish can rest before moving further upstream. The fishway was designed by Kleinschmidt Associates of Pittsfield, ME with technical review by USFWS and NOAA.



NOAA, on behalf of the Trustees, contracted Site Tech Corp of Providence, RI and Charter Environmental, Inc., of Wilmington, MA to construct the pool-and-weir fishway. Construction work was completed by the late January 2006.

The fishway is operated by removing and reinstalling a metal weir slot plate in the uppermost weir during the spring adult migration period (April-June) and when juveniles are moving downstream (July-November). Fishway operation and maintenance is the responsibility of RIDEM.

In spring 2004 and 2006, RIDEM released more than 1000 adult alewife each year, trucked in alive from another Rhode Island river and released to Indian Lake to help jumpstart the run in the Saugatucket River and imprint alewife to the lake. Thousands of juvenile alewives have been documented passing through the fishway in both 2004 and 2006. Routine fish monitoring by RIDEM and NOAA is being conducted for at least five years to evaluate the effectiveness of the fishway.



By constructing the fishway and providing alewife access to Indian Lake, spawning and nursery habitat in the watershed is expected to increase by at least tenfold. It is possible that an annual herring run size of tens of thousands of fish may eventually be restored to the Saugatucket River, helping to address the injuries from the *North Cape* spill.

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