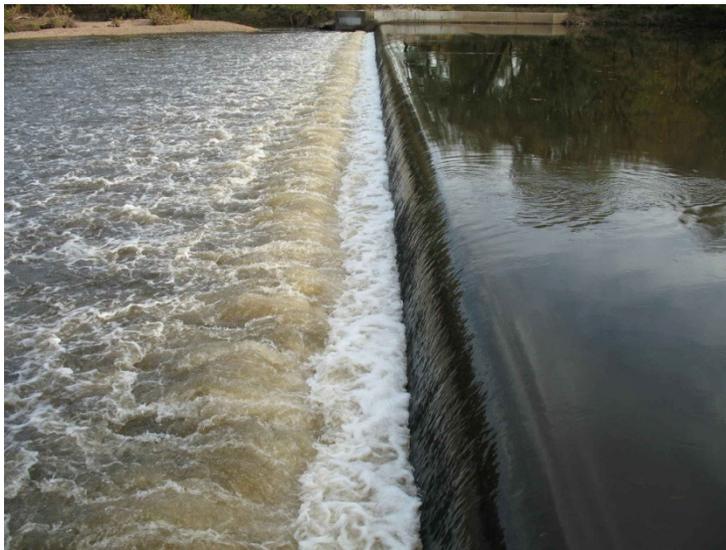


Robert Street Dam Removal Project

A Raritan River Restoration Initiative

The New Jersey Department of Environmental Protection's Office of Natural Resource Restoration (NJDEP ONRR), in conjunction with El Paso Corporation, are implementing the removal of the Robert Street Dam, located at Raritan River Mile 27.9, to allow anadromous and catadromous fish species to freely migrate upstream and downstream of the dam site. This project, guided by the technical groundwork developed by National Oceanic and Atmospheric Administration (NOAA) Restoration Center, fulfills objectives outlined in the 2006 Open Rivers Initiative (ORI) and the goals set forth by the Sustainable Raritan River Initiative.



The Robert Street Dam was reconstructed in 1964 after the original dam at this location failed. The original dam had partially overturned, subsided, and was breached through numerous structural fissures that destabilized the structure, so that older structure was encased and buried beneath the reconstructed dam. The removal of Robert Street Dam is a major Raritan River watershed restoration priority because it poses one of the most substantial impediments to fish migration

The Raritan River and its sub order tributaries combine to form the largest interior watershed to support migratory fish in New Jersey. These river segments are suitable spawning and nursery habitat for American shad (*Alosa sapidissima*), hickory shad (*Alosa mediocris*), alewife (*Alosa pseudoharengus*), and blueback herring (*Alosa aestivalis*), which formerly populated the river in such numbers that they supported a commercial seine-haul fishery in the 19th century.

The shallow water depths and large grain size substrates characteristic of the Raritan River and tributary stream beds in the vicinity of the Robert Street Dam make this stretch of river an ideal spawning and juvenile growth habitat for shad and river (alewife and blueback) herring.



In addition to preventing spawning runs of migratory anadromous fish (species that spend their adult life stages in the ocean and return to fresh water to spawn), dams limit dispersal of resident freshwater fish species, cause crowding just downstream of the dam structure, and produce differences in biodiversity between upstream and downstream locations. Additionally, dams alter riverine habitats by producing lake-like conditions upstream of the structures, which can favor

undesirable species, cause siltation of spawning and feeding habitats, and trigger deleterious effects on water quality, such as when thick, filamentous algal mats blanket acres of stagnant water upriver of the Robert Street Dam in the summer months.



Demolition of the Robert Street Dam will eliminate the most significant barrier to anadromous fish passage along two miles of the main stem of the Raritan River between RM 27.9 and RM 29.9 (up to the Headgates Dam), thereby restoring access to historically significant spawning grounds for American shad and other migratory fish whose populations are in a steep decline along the Atlantic coast. Dam removal provides direct physical benefits; for example, the natural river process of transporting and depositing gravels, sand, nutrients, and woody debris is restored, enabling rivers to provide the diversity of habitats necessary for species to survive and thrive.



Dam removal will also benefit resident aquatic insects and birds, including the bald eagle (*Haliaeetus leucocephalus*), the great blue heron (*Ardea Herodias*), a New Jersey species of Special Concern, the great egret (*Ardea alba*), a NJDEP species of Regional Priority, and the belted kingfishers (*Megaceryle alcyon*).

Juvenile fish are an important food source for the aforementioned wading birds, which also utilize the river corridor for nesting. The Robert Street Dam appears to reduce the foraging habitat available for wading birds by submerging the river shoreline up to the steep embankments and it has decreased natural river channel heterogeneity in the impounded areas of fish passage.

Lastly, but certainly as compelling as the aforementioned ecological benefits, is that low head dams like the Robert Street Dam are “drowning machines,” presenting deadly safety hazards to recreational users of the river. Drowning victims become inextricably trapped in a submerged hydraulic jump and reverse roller that occurs just downstream from the dam. Hundreds of the people have been killed over the last four decades at low head dams across the United States, including individuals who have drowned at the Robert Street Dam.



In summary, dam removal is one of the most successful and proven methods of restoring rivers and there are significant ecological (in addition to commercial and recreational) benefits for the removal of the Robert Street Dam. The Robert Street Dam removal project is considered to be regional significance because of its long-term, watershed-wide benefits, and this specific project has long been of interest to a diversity of parties, including federal, state, local, and private partners.

For more information on restoring fish passage on the Raritan River, please visit: www.habitat.noaa.gov/ourwork/fishpassage.html and www.raritan.rutgers.edu/

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