

Benefits to people and wildlife

The State Hospital Dam removal will result in important benefits for all of us:

- Avoid the cost of repairing and maintaining an obsolete dam;
- Protect public safety by eliminating the threat of dam failure;
- Restore a free-flowing river with improved water quality;
- Create new areas of wetlands and floodplain to store floodwaters;
- Improve fisheries and wildlife habitat, including alewife and herring runs.

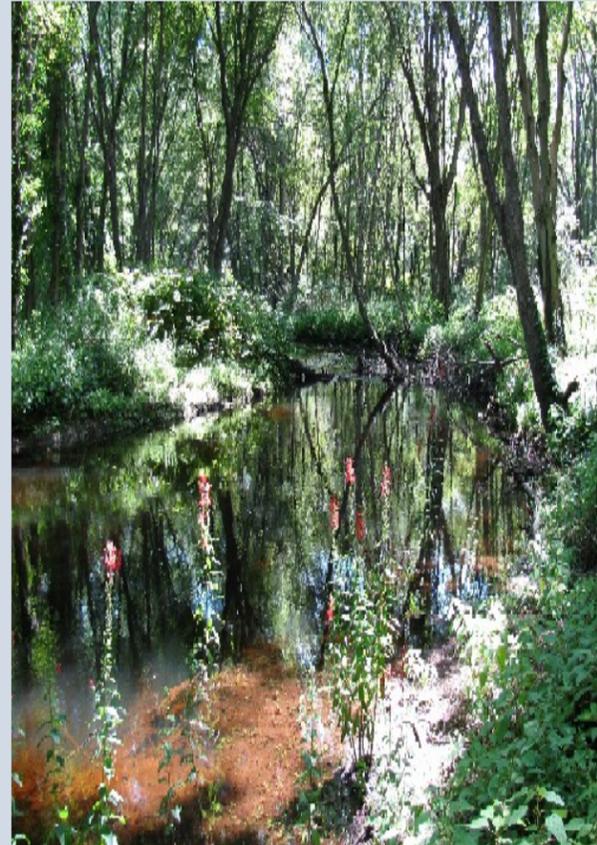
In addition, to provide access to the public to the restored river, DMH will establish walking trails on its property along the west side of the river after the restoration work has been completed.

The project will cost about \$938,000 and will be funded with grants from the Open Rivers Initiative of the National Oceanic and Atmospheric Administration, American Rivers, and other sources.



Cardinal flower, *Lobelia cardinalis*, is common along streams in the Taunton River watershed.

For more information on river restoration, visit the website of the Massachusetts Division of Ecological Restoration at: <http://www.mass.gov/dfwele/der/restoration.htm>.



Floodplain forest downstream of State Hospital Dam.

To receive updates on the progress of the State Hospital Dam Removal, contact Priscilla Chapman at Mass Audubon (508-828-1104 or pchapman@massaudubon.org)

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Restoring the Mill River: The State Hospital Dam Removal

In Taunton, an exciting process will soon begin to bring a damaged river back to life.

The State Hospital Dam on the Mill River in Taunton was built in 1818 to power the Hopewell Factory. This earthen dam is eight feet high and 150 feet long, impounding a 5.2-acre pond. Water flows over a 100-foot walled spillway. The dam, now on the campus of Taunton State Hospital, has outlived its original purpose and has begun to deteriorate. Aging dams can be a threat to public safety, and are expensive to repair and maintain.

The Massachusetts Department of Mental Health (DMH), working in conjunction with the Massachusetts Division of Ecological Restoration (DER), plans to remove the State Hospital dam. This project is the first step in a larger plan to restore the Mill River, an effort that will restore free-flowing water from the confluence of the Mill and Taunton rivers (about 2.7 miles downstream of the dam) up to Lake Sabbatia. It will return fish, plants, and animals to the Mill River.



State Hospital dam is the first dam on the Mill River.

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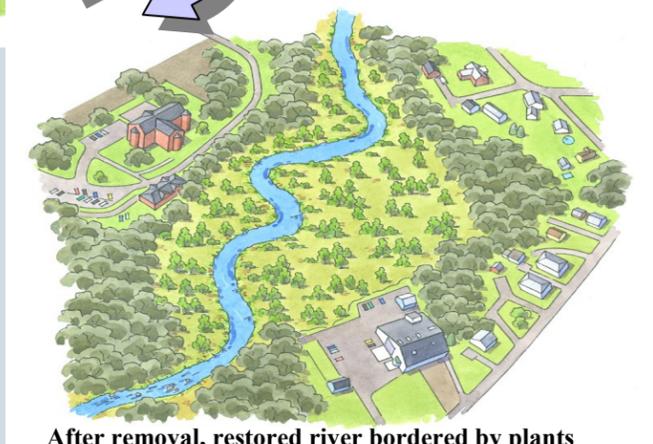
How do dams damage rivers?



Dams are obstructions that disrupt the natural flow of a river and prevent fish and other organisms from migrating up and downstream to spawn, breed or feed. While impounded ponds support some species of wildlife, these stagnant waters increase in temperature and often have low levels of dissolved oxygen, resulting in poor water quality. The impoundments also eliminate natural floodplain and may worsen local flooding problems.

Before dam removal

Natural flowing rivers bend and wind in channels that follow the surrounding terrain. Many have floodplains that hold floodwaters from major storms. Flowing water picks up oxygen and releases heat, and it carries sand, silt, gravel and cobbles downstream.



After removal, restored river bordered by plants

Before and after:
An artist's rendering of the Mill River before and after dam removal.

When this sediment is deposited on the river bottom, it creates pools, riffles and sandbars that provide excellent habitat for fish and other aquatic species. The amount of water in the river changes from season to season and in response to rain and snowmelt. As a result, the river and surrounding areas support plants and animals whose life cycles have evolved to the changing conditions of a river and its flow.

By transforming stagnant, ponded water into a freely flowing stream, dam removals restore a healthier ecosystem, allowing fish, animals and plants native to the river to return.

What will this area look like after river restoration?

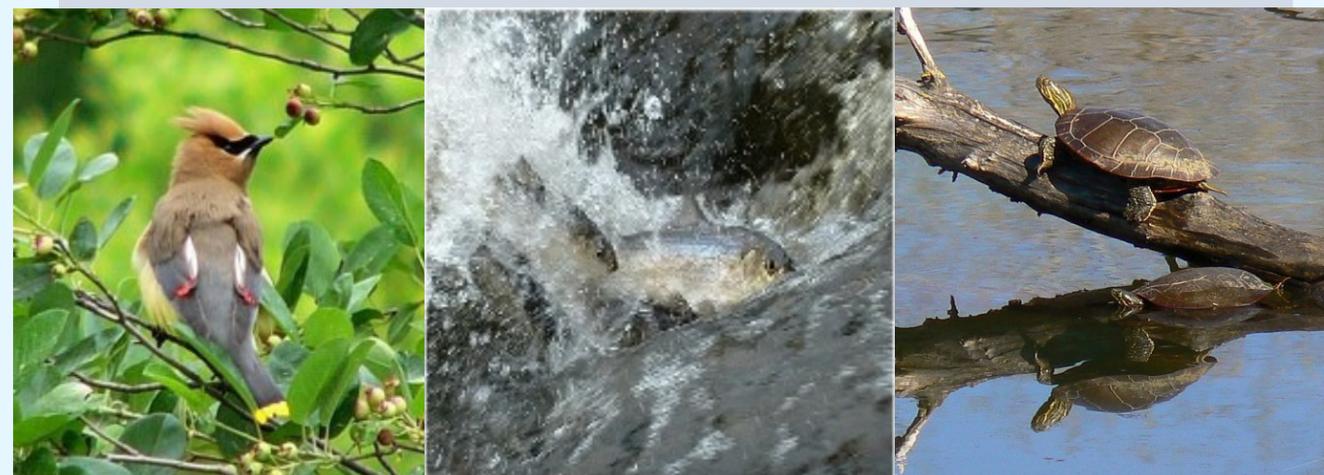
To remove the dam, sediment will be excavated and a temporary channel installed to divert water. Then the pond will be drained and the dam and spillway removed. This will expose the original channel of the river. After the temporary channel is backfilled, water flow will return to the river's original path, a 30' wide channel with a gentle slope replacing the 8 foot drop at the former dam. New wetlands and floodplain will replace the 5-acre pond.

At first, the land around the channel will be open with low-growing wetland plants and young trees and shrubs. Over time it will grow into a "floodplain forest," similar to the existing forested swamps in downstream portions of the river (see photo on page 4). Natural river processes will create more new habitats of cobbles, pools and riffles along the river bottom.

How will the plant life change?

While natural revegetation is expected to occur on the banks and riverfront, plantings will be done to enhance the process. Wetland plants, including sweetflag, swamp aster, blue flag iris, water plantain and tussock sedge will be put in close to the channel. Further out in the floodplain, shrubs such as elderberry and red osier dogwood will be planted, interspersed with trees, including sycamore, black willow, white oak, eastern hornbeam and maple.

Atlantic white cedar swamps were once widespread in southern New England but are now in decline because of clearcutting, filling, draining and other human alteration. The wet sandy soil of the new floodplain will be favorable to Atlantic white cedars, and they will be included in the plantings.



The cedar waxwing, river herring, and painted turtle are expected to use the restored river habitat after the dam is removed.

How will the wildlife change?

There is currently no fish passage at the State Hospital Dam. Blueback herring and alewife are diadromous fish that spend the greater part of their life cycles in salt water but return to fresh water to spawn. They are believed to have been extirpated from the Mill River in the late 1700s as a result of dam construction. Dam removal should bring about the return of the herring as well as the American eel, a catadromous fish that lives in fresh water but migrates to salt water to breed. Populations of other fish species that require moving water such as darters should also reappear.

New floodplain wetlands will provide habitat for amphibians such as the northern leopard and pickerel frogs, and for wood and eastern box turtles. River otters are likely to be seen as well as fox, rabbit and small mammals such as voles.

Kingfishers may be attracted to the riverbanks as well as many species of dragonflies and damselflies. Forested swamps adjacent to rivers are often used as breeding areas by wood ducks. As the floodplain forest matures, it is likely to attract a variety of songbirds, such as warblers, thrushes and vireos, as well as several species of hawks and owls. Waterfowl such as egrets and herons that prefer the open water habitat of ponds may be seen less frequently, but mallard ducks are likely to remain.