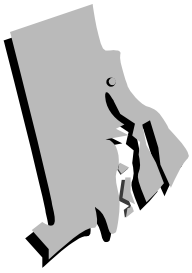
Restoring Rhode Island's Freshwater Wetlands



Why restore wetlands?

No matter who you are, or where you live, wetlands benefit your life. Many wetlands serve as the important transitional areas between dry lands and deeper aquatic systems, like rivers and lakes; others may be isolated within upland areas. Some common freshwater wetland types include swamps, marshes, bogs, and ponds. Wetlands provide significant and economically valuable contributions to clean water, flood prevention, recreation, scenic beauty, and wildlife habitat.

Wetlands and wetland buffers are the focus of many restoration efforts because the health and the extent of wetlands has declined significantly over the past 200 years. Many wetlands altered by humans were drained to support agricultural uses or filled for urban development.

Wetlands have become degraded as a result of partial drainage, filling, sedimentation, dumping trash, impoundment, colonization by invasive species, clearing and cutting, channelization, and removal of upland vegetation adjacent to wetlands.

What is wetland restoration?

Wetland restoration is the re-creation or rehabilitation of wetlands whose natural functions have been destroyed or impaired. The goal of restoration is to return a degraded or former wetland or buffer to a pre-existing condition. Less complex projects may simply entail replanting vegetation, whereas more complex projects might involve restoring water flow or removing fill.

What are the benefits of restoration?

Restoring wetlands improves wetland functions and values. Removing fill or sediment can improve the capacity of the wetland to hold floodwaters, trap sediments and remove pollutants. Reestablishment of wetland vegetation can enhance a wetland's ability to slow floodwaters, reduce downstream flooding, and provide wildlife habitat. Emergent plants can filter excess nutrients out of the soil before pollutants reach rivers, streams, and large bodies of water, while other vegetation types can provide shade and water quality improvement to benefit fish. Planting upland (i.e. buffer) vegetation in areas surrounding wetlands can also slow surface runoff, improve water quality, screen out noise and light, satisfy key habitat requirements for wetland wildlife, and improve the aesthetic value of an area.

Wetlands play an important role in Rhode Island's economy. Residents and non-residents spend millions of dollars each year on fishing and wildlife-watching in Rhode Island. The presence of healthy wetlands enhances wildlife habitat and helps improve water quality in our rivers and streams, and even in Narragansett Bay, the focal point for Rhode Island's recreational and commercial fisheries.

Restoring wetlands or wetland buffers on your property will help to create wildlife habitat, enhance recreational opportunities, help to reduce flooding, and potentially increase the value of your land.

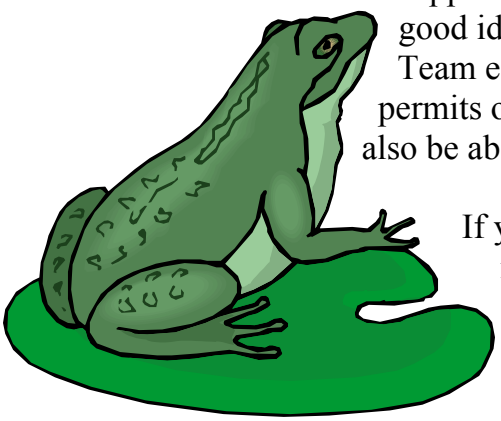
How do I get started?

Wetland restoration projects can be initiated in a variety of ways by individual landowners, school or community groups, small businesses, corporations, redevelopment agencies, or others. You may be interested in restoring a wetland if you are part of a community group or if you own property containing degraded wetlands.

What Makes a Vegetated Wetland

1. Water source = hydrology
2. Water-loving plants = hydrophytes
3. Presence of wet or hydric soils

Because the degree of damage varies from site to site, the effort needed to restore each wetland will also vary. Less complex projects could be completed by interested individuals or groups, but more complex projects require the assistance of professionals. It may also be beneficial to consider partnering with a local watershed association or land trust for support in planning and executing your restoration project. It is also a good idea to contact DEM's Water Quality and Wetland Restoration Team early in the process because many restoration projects will require permits or approvals. Your city/town planner or public works director may also be able to provide assistance.



If you need help funding your wetland restoration project, there are many opportunities available for financial assistance. Refer to DEM's list of *Potential Sources of Restoration Funding or Technical Assistance* for more information.

What types of restoration projects can I undertake?

The Rhode Island Department of Environmental Management (DEM) supports restoration actions that reinstate the functions and values of wetlands or buffers that have been degraded, including wildlife habitat, recreation and aesthetics, flood protection, surface water and groundwater protection, and water quality improvement.

Refer to the list of example restoration types below for some possible project ideas. The project types are arranged by increasing complexity.

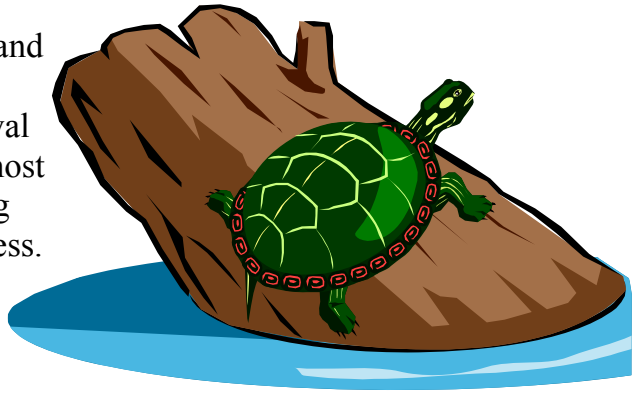
Trash removal: Wetlands often serve as dumping grounds for broken appliances, junked cars, and other trash. Trash in almost any amount can impact wetland functions and values. Certain dumped materials, such as junked cars and oil drums, may leak oil and toxic chemicals. From unsightly litter and garbage to contaminated groundwater, removing trash from significantly impacted areas can help restore wetland functions. Less complex projects may involve removing debris, such as shopping carts, tires, and lawn clippings, whereas a chemical cleanup project would be more complicated and require professional assistance.

What is a Wetland Buffer?

Wetland buffers are vegetated areas that are left in a natural condition to help protect wetland functions and values. Wetland buffers reduce the effects of human disturbance on wetlands.

Re-planting buffer vegetation: Loss of upland (i.e. buffer) vegetation around wetlands has been one of the most common impact types in Rhode Island. Unused or undeveloped areas next to wetlands provide great restoration opportunities for the reestablishment of upland vegetation. Projects could be as simple as re-planting a cleared area or may be more involved, such as ripping up pavement to create vegetated buffer.

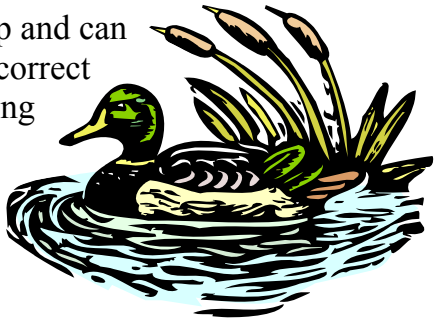
Invasive species control: Invasion of wetlands by *Phragmites* or purple loosestrife is a growing problem in Rhode Island. Both plants have the potential to take over large wetland areas. In extreme situations, only intensive, continuous management can help control this problem (i.e. continuous cutting operations and application of herbicides). However, when *Phragmites* or purple loosestrife has just begun to colonize a wetland, hand removal and treatment with herbicides may hold back the advance. Although this early stage is a good time to take action for a wetland restoration project, in all likelihood continual maintenance will probably be required at the site.



Re-planting wetland vegetation: Loss of freshwater wetland vegetation can occur for any number of reasons (e.g.. to obtain firewood, to “improve” views, etc.). If plant removal was limited and the wetland hydrology was not altered, most wetlands will likely re-grow naturally. However, planting additional wetland vegetation may help advance the process.

Enhancement of surface water flow: Culverts that have been blocked by sediments or other material or those

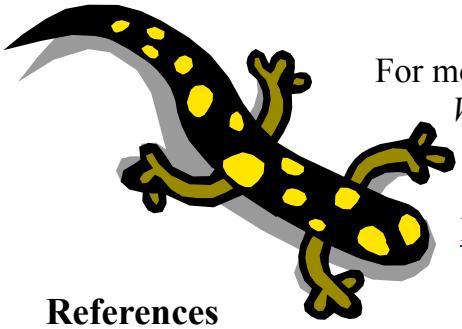
installed at incorrect elevations will often cause surface water to build up and can result in a change in wetland type. The restoration activities required to correct these situations can involve removing obstructions to flow (i.e. unclogging culverts) or installing new culverts to enhance surface water flow. It is important to evaluate each situation on a case-by-case basis to assess how the change will affect the impacted wetland.



Removal of fill: A wide variety of materials (i.e. sand, gravel, rock, tree stumps, construction and demolition debris) have been dumped in wetlands throughout Rhode Island. Filling can partially or entirely destroy a wetland. Although most wetland fill sites have been built upon, some areas remain undeveloped and are often good sites for restoration through fill removal and other means of restoration.

Stream channel reconstruction: Many small streams in Rhode Island have been channelized, often due to historic farming practices, but occurring in urban areas as well. Channelized streams are usually straighter, deeper, and faster than natural streams. Although, these streams may reduce local flooding problems, they will often cause local wetland loss and greater flooding problems downstream. Reconstructing stream channels can help restore the wetlands, although full restoration is often difficult because of existing surrounding development.

Where can I get more information?



For more information or to request a complete copy of DEM's *Freshwater Wetland Restoration Kit for Landowners*, contact the Rhode Island Department of Environmental Management Office of Water Resources at (401) 222-3961. You may also visit the web at http://www.dem.ri.gov/programs/benviron/water/wetlands/restfresh.htm.

References

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