



FRESHWATER WETLAND RESTORATION

Rhode Island Department of Environmental Management



HOW DO I RESTORE MY WETLAND OR WETLAND BUFFER?

The following paragraphs outline the key steps that will be involved as you plan your restoration project. The level of time, detail, and complexity associated with each step will depend on the specific nature of your project. It is a good idea to contact DEM's Water Quality and Wetland Restoration Team early in your planning process and to seek assistance from the appropriate professionals to help you design and implement your project.

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.

1. SET PROJECT GOALS.

Developing clear, achievable, and measurable goals is an important part of the restoration process, thereby providing focus and increasing efficiency. Restoration goals should be achievable, given the natural potential of the area, the availability of resources, and the extent of support for the project. Developing a before and after statement describing the conditions may be a helpful way to set the parameters of the project.

2. GET TO KNOW YOUR RESTORATION SITE.

Restoration projects should begin with an evaluation and assessment of the site in order to determine its restoration potential and feasibility. Knowing how, and to what extent, your wetland is degraded is critical for determining how best to restore it to its prior condition.

You should conduct a preliminary site evaluation to understand the sources of degradation and existing features. Sketching a rough map is a helpful way to inventory the features and ecology of the site. On your map, note property lines, approximate locations of nearby water bodies, topography, ditches, springs, potential sources of water, standing water, roads/culverts, trees and shrubs, and any clues to wildlife use. Also include reference points on your map, such as existing roadways and structures. Refer to DEM's *Preliminary Restoration Site Evaluation Worksheet* to get you started.

Take photographs to document the pre-restoration condition. Gathering existing aerial photos and maps will also be useful for documenting current and historic conditions at your site. You should also assess physical restoration options, information and data needs, and any major potential obstacles (e.g. presence of endangered species, flood-prone low-lying structures). You can use DEM's *Restoration Assessment Worksheet* to help you at this stage in your planning.

A wildlife biologist or wetland specialist can also help you assess the project area, look for potential impacts, and determine if hydric soils and a water source are present.

3. ADHERE TO THE REGULATIONS.

When proposing a wetland restoration project, there are various federal and state laws and municipal ordinances that need to be followed. These regulations exist to protect wetlands, and apply to wetland restoration activities as well. Regulatory requirements are likely to affect how you design your project, so it is important to consider them early on. Most freshwater wetland restoration projects will require that you coordinate with or obtain permits or endorsements from the RI Department of Environmental Management (DEM) or the Coastal Resources Management Council (CRMC). Refer to DEM's *Permitting for Wetland Restoration Projects* fact sheet for more information.

For a copy of DEM's Rules and Regulations or additional information and guidance on applications and regulations, visit DEM's website, <http://www.dem.ri.gov>, or contact the Office of Customer and Technical Assistance at (401) 222-6822.

4. DEVELOP YOUR PROJECT PLAN.

After you have completed a site assessment, develop a restoration strategy that identifies the key people and groups involved, outlines the project goals, and indicates the major project phases and how each phase will be completed. Determine whether the degraded wetland is located solely on your property or if it crosses onto other properties. If multiple properties are involved, decide whether to coordinate with the other owners or to limit the work to your property.

Create a list of the tasks that will be involved to help you chart the path for your restoration project. Consider the timetable for your project. The permitting process, project size, type of project, and when contractors can schedule the work will influence your project's schedule. If you have received funding for your project, you will need to make sure that your project schedule is consistent with the grant timelines.

Additionally, for some wetland soil types, you may only be able to conduct work during certain times of the year. Planting and seeding also need to take place during the appropriate seasons. Be sure to take into account all of these factors in your project planning.

For special considerations for invasive plant management projects, refer to DEM's *Management of Invasive Plants in RI Wetlands* fact sheet.

5. OBTAIN ASSISTANCE WHEN NEEDED.

While less complex restoration projects may be carried out by individuals or groups, more complicated wetland restoration work is not typically a do-it-yourself project. The design of certain restoration projects can be highly technical and may require the assistance of professionals, such as: hydrologists, ecologists, geotechnical experts, engineers, landscape architects, or construction firms. You may choose to be your own project manager and assemble the people necessary to complete your wetland work, or you can hire someone with experience in wetland restoration to put together a plan for you.

However you choose to proceed, try to find professionals that have done wetland restoration work in the past. Talk to their former clients to see what their work was like and whether they were satisfied with the outcomes. Poor planning and poor construction are the most common reasons why wetland restoration projects fail. To avoid this, be sure your ecological advisors work with the engineers to produce plans that accurately reflect the methods you want used for the project. Make frequent visits to the site during construction and arrange to have the work inspected by your ecological experts to be sure that the plans are being followed accurately.

Non-profit organizations and government agencies are often available to assist you with certain stages of your restoration project. You can partner with local watershed associations or other environmental groups to restore wetlands on your land. Such organizations may be able to apply for and help manage project funding or provide you with additional assistance and support. You may also want to contact the planner or public works director in your municipality for assistance.

DEM maintains a Water Quality & Wetland Restoration Team which offers applicants enhanced preapplication assistance during project planning and design, including the identification of any necessary permits. Applicants who apply for Riparian Buffer Restoration Grants can also request additional assistance from DEM staff before approaching the Water Quality & Wetland Restoration Team. For those eligible for funding from the Natural Resources Conservation Service, NRCS staff can help you develop a conservation plan and schedule for your restoration project.

6. PROMOTE YOUR PROJECT.

The planning and implementation phases of restoration are good times to publicize your project. Publicity at the end of the planning phase (i.e. a local news article) lets people know about the project and can help to develop public interest. Depending on the complexity of your project, this may also be a way to help you find volunteers to assist with implementing and monitoring the project. People working outside on restoration projects also provide great photo opportunities and are often popular with the local press. For example, you might plan a media event on a day when volunteers are planting seedlings. During that time, you or your spokesperson could also talk about the history of the project and highlight the positive environmental and community benefits.

7. MONITOR YOUR WETLAND AFTER RESTORATION IS COMPLETED.

A common misconception about wetland restoration is that once a project is implemented, nature will just do the rest. Monitoring provides the necessary information to help you determine whether the site is developing in a way that meets the project goals and to facilitate routine maintenance or adaptive management that will keep the site functioning well. Develop a monitoring plan that specifies who will be responsible for the monitoring and maintenance, such as who will maintain new plantings (including watering, weeding, mulching, staking, protecting from mowing, etc.) until they are established.

In addition, monitoring is great way to involve the community in your restoration project and to give people hands-on experience in learning how local ecosystems function. Consider involving interested schools, clubs, or other community groups to help you with monitoring.

8. ENSURE YOUR WETLAND'S FUTURE.

A well-restored wetland should be long-lasting. To help maintain the wetland, it is important that you develop a long-term management plan to identify who will be responsible for the site and what kinds of activities should or should not occur there. It is also important to consider long-term legal protection of the site. You may want to establish deed restrictions or conservation easements for the site that restrict harmful activities, or you may want to consider donating or selling the land to a local, state, or federal natural resource agency or a non-profit organization, such as a land trust.



AGENCY CONTACT INFORMATION

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Oliver Stedman Government Center
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Wakefield, RI 02879
(401) 783-3370

Natural Resources Conservation Service
60 Quaker Lane
Warwick, RI 02886
(401) 828-8232

U.S. Army Corps of Engineers
New England District
696 Virginia Road
Concord, MA 01742-2751
(978) 318-8111

U.S. Environmental Protection Agency
EPA New England, Region 1
1 Congress Street, Suite 1100
Boston MA 02114-2023
(888) 372-7341

REFERENCES

This fact sheet was developed using information or excerpts from the following sources:

- Interagency Workgroup on Wetland Restoration. 2003. An Introduction and User's Guide to Wetland Restoration, Creation, and Enhancement. Available at: <http://www.nmfs.noaa.gov/habitat/habitatconservation/publications/hcpub.htm>
- Massachusetts Office of Coastal Zone Management. Wetlands Restoration Program. <http://www.mass.gov/czm/wrp/index.htm>
- Sargent, M.S and Carter, K.S., ed. 1999. Managing Michigan Wildlife: A Landowners Guide. Michigan United Conservation Clubs, East Lansing, MI. 297pp. Available at: http://www.dnr.state.mi.us/publications/pdfs/huntingwildlifehabitat/landowners_guide/Introduction/index.htm
- U.S. Environmental Protection Agency. River Corridor and Wetland Restoration. <http://www.epa.gov/owow/wetlands/restore/>
- Wisconsin Wetlands Association. Restoring Wetlands. <http://www.wisconsinwetlands.org/restoration.htm>

For additional resources, refer to DEM's list of *Wetland Restoration Resources*.

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