

Section 3- Making Restoration Happen¹

The first steps in restoration are the identification of sites and the preliminary assessment of their potential. The actual restoration is more difficult, but more rewarding. One person can undertake the steps identified in Phases I and II as outlined in this workbook, but usually the actual restoration will require a significant group of dedicated people. Successful restoration projects require cooperation with abutting landowners, local, state and federal government agency staffs, non-profit conservation organizations, and estuary scientists. This calls for systematic planning, sustained effort, and old-fashioned patience.

The reward is an inspiring view of a restored salt marsh from a roadway, trail or backyard that evidences the natural beauty and function that existed before human intervention. A restored marsh is worth the effort! It is testimony to the ability of people to make a difference. It becomes a building block in the regional, national, and international effort to restore the ecological life-support systems of our planet.

A Restoration Project Is a Campaign

A restoration project can be thought of and implemented as a campaign. The following aspects of a campaign contribute to a successful operation:

- develop a good business plan for your project
- identify and enlist strategic partners
- complete a site-specific restoration feasibility assessment that includes biological, hydrological, engineering, and societal aspects of the project
- build public awareness and enthusiasm through media and communications
- assess and comply with legal requirements
- supervise construction
- conduct post-project monitoring

Develop a good business plan for your project

When you contemplate restoration of a site, it is important to think of the project as a business. In any business plan, there needs to be a statement of purpose, a strategic

¹ Adapted from Maine Citizens Guide to Evaluating, Restoring and Managing Tidal Marsh. Robert R. Bryan, Michelle Dionne, Ph.D., et al. (Maine Audubon Society 1997).

action plan that covers specific activities and resources of money and personnel that need to be developed, identification of key individuals and their responsibilities, a “marketing” plan, and a timeline. The urge to “just do it” will be irresistible in the beginning, but time spent thinking seriously about what you want to accomplish will repay itself many times over during the course of the project. Amend the plan as you develop more information and a better understanding of the project.

Identify and enlist strategic partners

It is extremely important to identify partners who share your restoration goal. Partners can add human resources, technical expertise, funding and regulatory clout. Many government agencies and non-profit conservation organizations are looking for restoration projects that already have local support. Even if these sources cannot or will not help with your project, they can refer you to others. Land trusts, watershed groups, water quality monitoring groups, local environmental organizations with experience in projects of similar complexity can be valuable partners. Their experiences are invaluable. Local businesses and individuals who have a financial stake in maintaining or restoring the health of marshes (eco-tourism outfitters, local lobstermen, fishermen and clammers) are good partners, also.

Early in the process you need to work closely with area officials and landowners to create a restoration plan that addresses local concerns. If the site is privately owned, it is critical to establish a working relationship with the owner at the beginning of the project. While *you* might be enthusiastic and convinced about the need for restoration, don’t assume that everyone will share your views. Concerns about flooding, mosquitoes and other issues may arise, fortunately there are many measures that can reduce or eliminate the basis for these concerns.

Visit your town officials (conservation commission, town manager, selectmen, and councilors) early on, Take photographs of the proposed site and prepare a written description or narrative to give them a sense of the benefits and scope of the project. This is the time to find out if anything might prevent the project from going forward, such as concerns about funding, increased maintenance responsibilities or the effects of increased tidal flooding. It is important to address these concerns right away because

technical funding assistance from other sources will not be available without local support.

Two other factors support the importance of these initial contacts. First, you must keep in mind that each town may have specific procedures for permitting the project. The restrictive crossing may be located in one municipality, but the actual or potential impact of clearing the obstruction may occur in an upstream or downstream municipality. Cover all bases! Some towns may ask you to notify or obtain permission from abutting landowners before permitting a project. Other towns may require approval from their planning board or endorsement by their conservation commission.

The second factor that underscores the importance of approaching municipal officials at the outset, is the possibility that a portion of the project might be paid for by the entities responsible for maintaining the road. A restrictive culvert can be replaced during regularly scheduled roadwork at a very low or no incremental cost. This solution may not even require a permit over and above the road work permits if no other changes are proposed for the road or its embankment.

State agencies have staff experienced in coastal marsh restoration who can advise you or work directly on the project. Make a point of asking your regional biologist from the Department of Inland Fisheries and Wildlife (DIFW) to make a field visit. Often, he or she has first hand knowledge of the area and can help devise a specific plan. In addition, you may need the approval of your regional biologist when you apply for a permit from the Department of Environmental Protection (DEP).

If you live between New Hampshire and the Kennebec River, contact:

Phil Bozenhard
Department of Inland Fisheries and Wildlife
Region A
328 Shaker Road
Gray, ME 04039 (207) 657-2345x110

If you live between the Kennebec and Penobscot Rivers, contact:

Jim Connolly
Department of Inland Fisheries and Wildlife
Region B

RFD 1, Box 6378
Waterville, ME 04901 (207) 547-5318

From the Penobscot River to the Canadian border, contact:

Thomas Schaeffer
Department of Inland Fisheries and Wildlife
Region C
68 Water Street
Machias, ME 04654 (207) 255-4715

Because you will probably be working in a salt-water environment, the state Department of Marine Resources (DMR) should also be consulted because of its interest in anadromous fish runs and coastal fisheries. The Bureau of Resource Management at DMR has an excellent library and knowledgeable staff. Be sure to call:

Dr. Linda Mercer
Bureau of Resource Management
Department of Marine Resources
McKown Point
West Boothbay Harbor, ME 04575 (207) 633-9565

The Maine Coastal Program in the Maine State Planning Office is very helpful, also, and can help identify additional sources of state funding and give technical assistance on your restoration plan. Contact:

Elizabeth Hertz (207) 287- 8935
or Jackie Sartoris (207) 287-1494
Maine Coastal Program
State Planning Office
Augusta, ME 04333

You can get invaluable technical assistance from federal wildlife biologists and scientists. They can provide wetlands information and fish and wildlife data, help you work out a specific restoration plan, provide assistance with the federal agencies responsible for permits, and guide you to sources of federal funds. Funding for restoration projects varies greatly. The more complex the project, the more technical and financial support it will need. For additional assistance on developing a restoration plan or identifying sources of funding, contact:

Lois Winter
US Fish and Wildlife Service - Gulf of Maine Project
4R Fundy Road
Falmouth, ME 04105 (207) 781-8364

Depending on the significance of the project, biologists at the US Fish and Wildlife Service may help you devise a specific restoration plan and offer knowledge of federal funding opportunities for wetland restoration, or at least steer you toward other partners.

Ron Joseph
US Fish and Wildlife Service
Wetland Restoration Program
1033 So. Main St.
Old Town, ME 04473 (207) 827-5938

Michele Dionne
Wells National Estuarine Research Reserve
324 Laudholm Farm Rd.
Wells, ME 04090 (207) 646-1555 x 136

Bob Wengrzynek
US Department of Agriculture
Natural Resources Conservation Service
5 Godfrey Drive
Orono, ME 04469 (207) 866-7249

Bill Hubbard or Larry Oliver
New England District
US Army Corps of Engineers
696 Virginia Road
Concord, MA 01742-2751 (978) 318-8111

Rob Bryan
Maine Audubon Society
Gilsland Farm
Falmouth, ME 04105 (207) 781-2330

Peter Shelley
Conservation Law Foundation
120 Tillson Avenue
Rockland, ME 04841 (207) 594-8107

The Natural Resources Conservation Service (NRCS) has funding for restoration projects, and coastal wetlands are their top priority. As of 1996, they paid 75 - 100% of the cost of a restoration project. NRCS has experienced engineers and hydrologists who can evaluate the feasibility and effects of your project, develop cost estimates, and help select contractors with experience in this type of work.

Consultants, academics, or other wetland professionals who might be contacted for assistance often live in or near the study area. For a statewide list of wetland professionals, contact:

Maine Association of Wetland Scientists
PO Box 202
Yarmouth, ME 04096
Don Phillips, President

(207) 848-5714

In our experience, the earlier you identify and connect with your strategic partners, the faster and easier the entire restoration effort will go. On the reverse side, the failure to engage a strategic partner early – particularly one with regulatory interest in your project area – can make your life miserable and doom your project from the beginning.

Prepare a site-specific restoration feasibility analysis

A site-specific restoration analysis involves assessment of the biological, hydrological, societal and engineering aspects of the project and is essential to demonstrate the feasibility and value of your project. For most restoration projects beyond the most straightforward maintenance or culvert replacement situations, it is important to involve professionals. Developing a specific plan can be relatively simple or multifaceted and complex. The completed project will result in changes to the biological, hydrological, or topographical status quo. As the project proponent, you need to understand the probable nature of those changes. For example, there may be a well-established freshwater ecosystem upstream of the obstruction that is fully protected under wetland and land use regulations. If cottages have been constructed around an artificial lake or pond, restoration will be politically impracticable without a very sympathetic homeowner's association.

Even assuming no opposition to the project, you need to have technical support for the restoration action that you plan to take. How are the wetlands changing as a result of the obstruction? Where will the high tide line be after the flows are returned? How much larger should the culvert be? What is the proper elevation for the bottom of the culvert relative to tidal flows? If storm surges or flooding are historic problems in the areas, what sorts of tidal gates can be used to control the extreme storm-related events without starving the marsh of the normal tidal flows necessary for its health? What sorts of stormwater controls are available to prevent freshwater runoff from highways flooding the salt marsh? Are the sediments that have built up behind the restriction contaminated? How severely? These are the sorts of questions that you will need to answer.

The analysis of costs and benefits of a restoration project can determine whether or not funding or technical assistance is available from outside sources. Projects that restore a relatively large section of marsh for minimal cost will probably be favored over more expensive projects that do not accomplish much obvious restoration.

In our experience, the analysis is the most challenging aspect of the restoration work. It can be time consuming and very expensive. To secure taxpayer subsidized professional services, try the state and federal agencies mentioned above. Ecological evaluations might be available through Maine Audubon Society, the Wells Reserve, or other similar organizations.

Depending on the sophistication and determination of the project group, some analysis can be done with volunteers under the supervision of a trained professional. You will want your results to meet regulatory standards. A particularly good resource for determining your ability to perform the analysis is the comprehensive guide developed by the Maine Audubon Society and Wells Reserve for this process, *Maine Citizens Guide to Evaluating, Restoring and Managing Tidal Marshes*. There may be a retired professional in your community who can help volunteers understand and follow the assessment protocols set forth in the guide or who can supervise the assessment process. The Wells Reserve is developing marsh assessment tool kits that will allow volunteers to measure and interpret factors such as marsh settlement and salinity levels in marsh soils. There may also be someone at your high school or local community college who can supervise such a project, involving their students at the same time.

If you ultimately need funding, go to foundations, local businesses, or local individuals. These projects are often very attractive to the private donor community. Be creative, don't be defeated by rejection, and don't give up. You and the marsh are in this for the long haul!

Build public awareness and enthusiasm

A successful estuary restoration project needs and deserves a well-developed communications plan. It took decades before the general public changed the common nomenclature of "swamps" to "wetlands," and only a slightly shorter time to shift from

“jungles” to “rainforests.” People in your local area may not know the definition of an estuary, marsh or a tidal wetland or what makes them uniquely valuable to the community. A crucial part of an marsh restoration action plan is the development of public awareness and understanding of estuaries and the relation between a marsh and coastal fish and shellfish populations.

A communications plan has several elements. It is vital to identify key talking points. What is an estuary? Why are estuaries needed? It is important to develop media contacts and take time to educate reporters and editors as you would the general public. You might schedule a meeting with the paper’s editor or invite a reporter out to the project site. Getting to know a managing editor can be helpful because reporting assignments and the reporters themselves tend to change frequently.

The issue of estuary health resonates if it connects to people’s lives. In coastal Maine, many people are economically dependent to some degree on commercial fisheries. Whether everyone understands it or not many of these fisheries depend upon the health of marshes. Lobstermen, fishermen, clambers, wormers, and aquaculture site leaseholders are eloquent advocates for estuary health and often are willing to speak to the press or call elected officials. Similarly, an advocate from an “eco-tourism” business, a kayak outfitter or a schooner captain, can speak on behalf of the project, making the point that a restored marsh is good for local jobs and businesses. Any school involvement in the project is particularly appealing to media and should be exploited.

Permitting and regulatory requirements

Once you have addressed local concerns, worked with regional and federal biologists or other technical experts to create a specific restoration plan, and located potential sources of funding, you are ready to apply for the permits you need for the project. At this stage, strategic partnerships and background work on project feasibility pay off. In fact, any opposition that has not been addressed and resolved will certainly surface and protract, if not kill, your project. It is difficult to overstate how important it is to talk with regulators and other groups who have received restoration permits before you have made an investment of time, money, and energy in the effort.

For additional guidance on regulatory requirements, contact:

Peter Shelley
Conservation Law Foundation
120 Tillson Avenue
Rockland, ME 04841

(207) 594-8107

The State Permit

The Department of Environmental Protection (DEP) requires a permit for all activities conducted in coastal marshes, including restoration projects. It is helpful to meet with a project analyst at DEP for guidance before you submit an application. Depending on the type and extent of the restoration project that is proposed, the permit may be considered under the "Permit by Rule" provisions of state laws, or may be treated as an "Individual Permit," a longer process. If an Individual Permit is required, it will be sent to the Department of Inland Fisheries and Wildlife (DIFW) for review. If you have worked with the regional biologist already, this should be a simple formality.

If the study area is between New Hampshire and the Kennebec River, contact:

Doug Burdick
Southern Maine Regional Office
Maine Department of Environmental Protection
312 Canco Rd
Portland, ME 04103

(207) 822-6300

If the study area is between the Kennebec and the Penobscot Rivers (inc. Mt. Desert), contact:

Nancy Beardsley
Central Maine Regional Office
Maine Department of Environmental Protection
17 State House Station
Augusta, ME 04333-0017

1-800-452-4570

If the project site is from the Penobscot River to the Canadian border, contact:

Stacie Beyer
Eastern Maine Regional Office
Maine Department of Environmental Protection
106 Hogan Road
Bangor, ME 04401

(207) 941-4570

The Federal Permit

You may need a Federal Permit in addition to a State Permit. Maine currently requires that all activities in tidal marshes obtain an Individual Permit from the US Army Corps of Engineers (ACOE). Therefore it is important to meet with officials from ACOE *before* you submit an application to find out exactly what format to use and what types of supporting materials to include. The US Fish and Wildlife Service and Environmental Protection Agency review ACOE permit applications. Working with all these agencies and keeping them informed about the progress of your project will help the permit process. To learn about ACOE permit applications and set up an informational meeting, contact:

Jay Clement
US Army Corps of Engineers
RR 5 PO Box 1855
Augusta, ME 04333

(207) 623-8367

Once permits are in hand, actual restoration can begin.

Supervising the restoration project

Unfortunately, even the best-laid plans sometimes go astray. Marsh restoration, particularly salt marsh restoration, is an emerging specialty and there are not many experienced contractors in the field. If your project is relatively simple, for example, culvert replacement or installation, most contractors should be able to do a good job without damaging adjacent marsh. If there is more extensive work, such as plugging ditches on the marsh, reconstructing salt pannes or moving earth on the marsh, special equipment and expertise is needed. All prior effort and plans could go to waste if an over-enthusiastic contractor rips through the *Spartina* with a piece of heavy equipment not designed for that use. It is important to consult with federal and state agencies to identify experienced contractors and to monitor their work. Highway contractors in particular have been known to cut corners to save time or money probably because they do not understand the significance of all the required steps. Knowledgeable contractors

are useful resources and can explain to your group what they are doing on the marsh and why.

Conducting post-project monitoring

Once reconstruction is complete and the regulatory agencies have all signed off, the fun part of the project begins: watching and enjoying the recovery of the tidal wetland's health. One of the most dramatic and visible recoveries taking place in coastal Maine right now is at the Back River marsh north of Bath, on Route 1. During the summer of 1999, travelers could watch the freshwater and upland vegetation die back as the newly restored tides returned the soil and water chemistry to state of a healthy marsh. During the summer of 2000, a new set of plants began emerging in response to the new tidal regime.

Beyond the satisfaction of seeing the results of your work, monitoring is important for scientific and practical reasons. It is important to document the rates of recovery and the process of recovery. Some of these changes will be predictable, others may not. A stand of common reed or purple loosestrife may not retreat to higher ground and may require further steps for eradication. The "self-adjusting" tide gate may not be adjusted properly, or may become inoperable because of a new obstruction. Even the best plans often require modification after they are implemented, and you should be prepared to monitor for this eventuality².

The Good News/Bad News about Your Salt Marsh Campaign

The good and bad news about your tidal marsh restoration campaign is that it does not end. Regular monitoring is an integral part of tidal marsh stewardship. This can be done whether restoration projects have been conducted or not. Just as regular water and air quality observations are important to detect both acute and chronic changes, it is important to watch over your unique wetland resource areas.

² The GPAC group at the Gulf of Maine Council on the Marine Environment has developed a regional monitoring protocol, see Neckles and Dionne, Regional Standards to Identify and Evaluate Tidal Wetland Restoration in the Gulf of Maine, a GPAC Workshop report, 2000, 21p.