


GREAT LAKES RESTORATION

BEST MANAGEMENT PRACTICES




Sea Grant
ILLINOIS - INDIANA



The Great Lakes represent approximately 20 percent of the world's fresh surface water and provide habitat for over 100 species of globally rare plants and animals.

Habitats such as streams and wetlands help support the ecological health of the Great Lakes Basin and the economic health of the region.

Unfortunately, some critical Great Lakes habitats have been degraded due to contaminants, invasive species, urbanization and more—leading to the decline of native fish, wildlife populations and water quality.

Throughout the region, communities and local organizations are working to restore the health of their natural resources and bring back beneficial use of their local waters. If you are considering habitat restoration, this document can provide some starting points and best management practices to guide you through the process.

Restoring Great Lakes Habitats

Think big picture. Base your restoration design on what's going in the entire watershed. Your project should be coordinated with or complementary to any overarching restoration plan(s) in the area. Plan so that your efforts will be resilient to potential adverse watershed impacts, including climate change.

Get permission. Restoration can require a variety of permits, including federal (U.S. Army Corps of Engineers) and state. Be sure to contact the appropriate regulatory agencies early in the planning process to ensure the project can be completed in a timely fashion.

FOR NEARSHORE AND WETLAND AREAS:

Pick the right site. Soil type is an important site criteria for wetland restoration. Hydric soils in low areas can often be restored by breaking drainage tiles or reconnecting water sources so it helps to have a site adjacent to wetlands or waterbodies. Make sure that restoring hydrology to the site will not adversely impact adjacent landowners.

Follow form and function. Restoration is often required after the site has been altered significantly. Restoring the natural structure of a wetland or shoreline to approximate the original conditions can promote the return of beneficial functions. Identify functions that have been lost and make them a priority.



Be species smart. Plant native species. Non-native species can undermine the success of your project, in part because bare soil areas of restoration sites are particularly vulnerable to invasions. Develop an approach to address the threat of [invasive species](#), and identify all possible sources of introduction, such as machinery or materials.

FOR [DAM REMOVAL](#) PROJECTS:

Know your waters. What are the characteristics of the channel and the watershed? What is the composition of the sediment? Is it contaminated? Assess any possible upstream problems that may pose a threat downstream. Will the project promote the spread of invasive species?

Know the flow. Develop flow models. Plan for the highest flows, especially in urban areas.

Know your audience. Societal issues are important in dam removals. Include local community interests throughout—from the decision-making process to the post restoration plan. Communicate early and publicize your success.

FOR CREATING [FISH PASSAGES](#):

Consider the species. If you have a target species, know its swimming abilities as well as how the stream or river flows during spawning. Design to allow passage of the target species with the lowest swimming ability. Natural design features—boulders and rock weirs—can provide flow conditions to accommodate the swimming abilities of a variety of species.

Build it to last. Make sure your fish passage is able to withstand high flows and ice. Still, fish passages will invariably need maintenance so include that in your planning. Investigate whether future sediment deposit or erosion will impact the long-term effectiveness of your project.



Will it Work?

ADAPTING FOR [CLIMATE CHANGE](#)

Learn your history. Historical analyses, reference sites, and present site characteristics can provide guidelines for designing a plan to restore functional uses and patterns. Site elevations, historic flows and water level regimes will provide initial design constraints.

Know your limits. Do a vulnerability assessment to identify potential threats to your project success. What parameters are required for your restoration project to function successfully? What are the thresholds beyond which your project would be severely compromised and eventually fail?

Be ready for change. An adaptive management plan is an essential component of the restoration design. Adaptive management provides flexibility to respond to unanticipated conditions or events.

YOUR SUCCESS STORY

Evaluate your project. A monitoring plan appropriate to the scale of the project is necessary to determine what worked and what did not. Monitoring can identify potential problems during implementation of a current project as well as document the success of your project.

Set your targets. Identify key projects that will contribute to or address goals laid out in local or regional planning documents.

Share your success. Invite media, congressional representatives, and the community to a project dedication or demonstration to showcase the benefits of your project.



Get the Grant, Make the Most of It

HOW TO WRITE A GREAT PROPOSAL

Read through the Request for Proposals carefully and thoroughly. Note how the criteria are weighted and let this guide you as you develop your goals and objectives. To receive the greatest consideration, attempt to clearly address each of the criteria.

Tell your story with concise, clearly defined, measurable goals. Be specific about how your project is part of a larger plan such as a Remedial Action Plan, the Great Lakes Regional Collaboration Strategy, or the Great Lakes Restoration Initiative Action Plan.

Explain your methods. Make sure you also have an appropriate monitoring plan and describe it.



Make it clear that you have qualified people and the necessary resources to accomplish your goals, and that your project will be cost effective.

HOW TO MANAGE A GRANT

- 1 Budget 6-9 months more to your timeline than you expect to need. Involve permitting agencies early on in the process.
- 2 Break the project down into tasks; outline roles and responsibilities and make everyone accountable.
- 3 Construction and contract management are key. You need experts to oversee the construction process to ensure projects are built as designed.
- 4 Master the art of information management—develop an audit-ready file system and continually update it.
- 5 Expect the unexpected. Be flexible and adaptable as you move forward with the big picture in mind.

Restoration Web Links

GREAT LAKES HABITATS

www.habitat.noaa.gov

INVASIVE SPECIES

www.habitat.noaa.gov/restoration/programs/invasivespecies.html

DAM REMOVAL

www.habitat.noaa.gov/funding/ori.html

FISH PASSAGES

www.habitat.noaa.gov/restoration/techniques/srrestoration.html

CLIMATE CHANGE

www.habitat.noaa.gov/ourwork/climate.html

MONITORING

www.habitat.noaa.gov/restoration/techniques/srmonitoring.html

SUCCESS STORIES

www.habitat.noaa.gov/restoration/connection/successstories.html

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