



Floating Wetlands



THREATS ADDRESSED

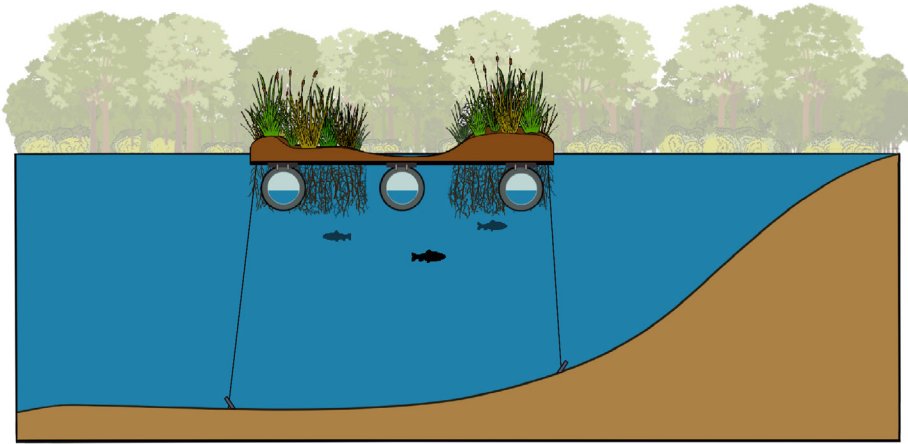
- Excess Nutrients
- Pollutant Inputs
- Algal Blooms
- Invasive/Nuisance Species
- Erosion

STRATEGY GOALS

- Protect
- Manage
- Rehabilitate

STRATEGY CO-BENEFITS

- Habitat Improve
- Aesthetics Improve
- Recreation Improve



- Permittable in Massachusetts**
Pilot. Local review through the Conservation Commission required. List of potential permits available [here](#).
- Implemented on Cape Cod**
See examples of pond projects implemented on Cape Cod [here](#).
- Listed in 208 Plan Technologies Matrix**
Learn more about the nutrient management strategies in the Tech Matrix [here](#).
- Can be Performed at Homeowner Scale**
Local review and permitting may be required.
- Nature-based Solution**

DURATION OF BENEFITS

- Less than one month
- One season or year
- Multiple seasons or years

MAINTENANCE REQUIREMENTS

- Monthly
- Annually
- Infrequent

DESCRIPTION

A floating wetland is a human-made island that provides a surface for plants to grow, allowing their roots to grow into the water. Floating wetland installations have the potential to address eutrophic issues with “top-down” control, meaning the aquatic life higher up on the food chain helps rebalance populations of lower forms. Floating wetland plants grow hydroponically, with the roots of the plants suspended in the water body. Nutrients required for plant growth are absorbed from the water column. Harvesting that vegetation annually is a potential means of removing nutrient pollution, notably phosphorus, from that ecosystem. A floating wetland increases habitat for algae-eating zooplankton populations and increases nutrient-absorbing plants, roots and microbes to help reduce excess levels of algae.

ADVANTAGES

- Enhances habitat for a variety of aquatic species
- In addition to nutrients, may also remove other pollutants such as metals
- Harvested material can be composted offsite and then used as a beneficial soil amendment

CONSTRAINTS

- Maintenance is essential for longer term benefits and long-term management of materials needs to be considered
- May require large coverage area and public may not welcome it in the pond
- May affect hydrology negatively
- Pilot status adds complexity to permitting process



IMPLEMENTATION

POTENTIAL ACTORS



Towns: Towns may propose to install floating wetlands in town-managed ponds



Pond Groups: May collaborate on floating wetland installation and provide a supportive role through education



Private Landowners: Installing and maintaining a floating wetland is something the private homeowner can do in some cases (i.e., small, private ponds)



Land Trusts: Land trusts with pond properties may install floating wetlands in their ponds and provide a supportive role through education

SITING REQUIREMENTS

- Most efficient in smaller, shallower ponds, but not too shallow to prevent platform plants from rooting into lake bottom sediment (>5')
- Ponds where water quality can be improved and surface coverage is not a problem
- Ponds with inadequate plant habitat to support desired biota

INFORMATION NEEDS

- Nutrient profiles
- Pond depth and residence time
- Understanding the concentration range of specific pollutants within a system is essential to designing floating wetlands and assessing their potential to successfully improve the water quality of a given pond

IMPLEMENTATION EXAMPLES

- The Town of Barnstable is [piloting a floating wetland project in Long Pond, Marstons Mills](#) to grow native plants and let the submerged roots remove phosphorus from the water to help prevent algae blooms.
- The [Charles River Floating Wetland](#) explores an ecological intervention to reduce harmful algal blooms in the Charles, which threaten the river's health and limit the feasibility of swimming.
- A [floating wetland was installed in Polo Lake in Rhode Island](#) to raise awareness about the importance of wetlands and help improve water quality by cultivating biodiversity and regenerating the food web.
- Floating wetlands have been [installed in waterbodies around the country and the world](#) to address toxic legacies and support aquatic life.

RESOURCES

- The Massachusetts' Department of Conservation and Recreation's [Lakes and Ponds Program](#) provides related resources.
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COST ESTIMATE

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Relative to other in-pond strategies

Variable depending on extent of treatment area, sourcing of desired vegetation, planting method, monitoring level, and labor

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ADDITIONAL FINANCIAL CONSIDERATIONS





Assessment: Planning, design, and permitting will be more expensive than pond shore or in-pond planting due to additional studies and permitting

Implementation: Plants, materials, equipment, and installation

Maintenance: Monitoring, maintenance, and replacement plants, as needed

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POTENTIAL FUNDING SOURCES

-  Community Preservation Act
-  Capital Budget
-  Grants
-  Private Funding

Additional information regarding potential funding sources is available [here](#).