



CAPE COD

Freshwater Initiative

890

Freshwater ponds on
Cape Cod



CAPE COD'S FRESHWATER PONDS

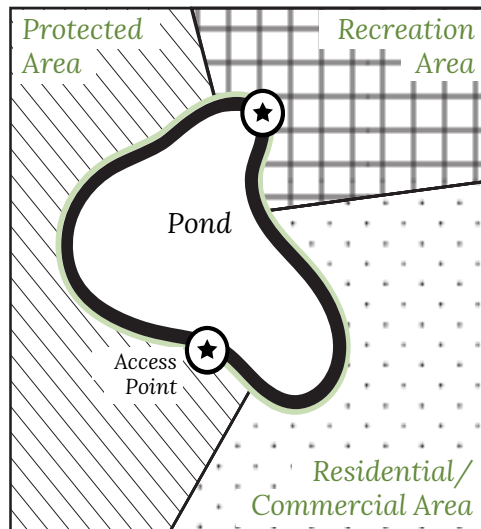
Cape Cod's 890 freshwater ponds cover nearly 11,000 acres. These ponds are extremely fragile. Human activity and development have led to excessive inputs of nutrients (nitrogen and phosphorous) to ponds from septic systems, fertilizers, and stormwater runoff. The buildup of nutrients has led to eutrophication and a proliferation of algal blooms that threaten the health and safety of humans, pets, wildlife, and aquatic life. In keeping with the work done to protect the region's drinking water supplies and coastal ecosystems, the community needs to identify strategies to protect and restore these critical resources.

ABOUT THE FRESHWATER INITIATIVE

Through this initiative, the Cape Cod Commission and its partners will complete an analysis of available pond monitoring data, assess the overall health of Cape Cod's ponds, and identify regional trends in water quality. This will provide the basis for a comprehensive planning process that engages stakeholders to define a path forward for improving pond water quality across the region.

Interactive Pond Atlas

Updates to the 2003 Pond and Lake Atlas include the Pond Viewer, an interactive, GIS-based online viewer that will allow users to access and explore information about freshwater resources.



ATLAS ELEMENTS

- ✓ Pond Characteristics
- ✓ Pond watershed delineations and bathymetry
- ✓ Surrounding land cover and land use summaries
- ✓ Protected open space in pond buffer

Project Workplan

The proposed project is a science-based, information-driven planning process that will engage stakeholders and enable action to protect and restore Cape Cod's freshwater ponds.



REMOTE SENSING

Investigating the use of satellite-derived imagery and existing pond water quality data to quantify changes in pond characteristics



ENGAGEMENT AND OUTREACH

Engaging stakeholders to develop a framework for identifying and implementing pond management strategies



DATA MANAGEMENT AND ANALYSIS

Developing freshwater monitoring database, processing scripts for trend analyses, and accessible user interface



ECONOMIC ANALYSIS

Quantifying the costs and benefits of pond management strategies, including the cost of no action and the impacts of degraded freshwater quality on the regional economy



PHYSICAL CHARACTERISTICS

Assessing, through the use of GIS and other data sources, characteristics that may contribute to changes in water quality, and determining potential internal and external drivers of water quality degradation



LEGAL AND JURISDICTIONAL ANALYSIS

Reviewing federal and state laws relative to public and private interests in and around freshwater ponds, and identifying opportunities for local and regional action



PONDS AND LAKES ATLAS UPDATE

Completing an update to the 2003 Cape Cod Ponds and Lakes Atlas to serve as a resource for updated pond information and provide the basis for the Freshwater Initiative



MONITORING PROGRAM

Expanding pond monitoring to collect data necessary to support management decisions and track performance



STRATEGIES DATABASE

Developing a pond-specific strategies database that includes a range of technologies, regulatory and voluntary options, and management approaches for protecting and restoring pond water quality



ONGOING DATA MANAGEMENT AND ANALYSIS

Managing and maintaining accessible pond monitoring datasets and providing on-demand trend analyses through a web-based interface