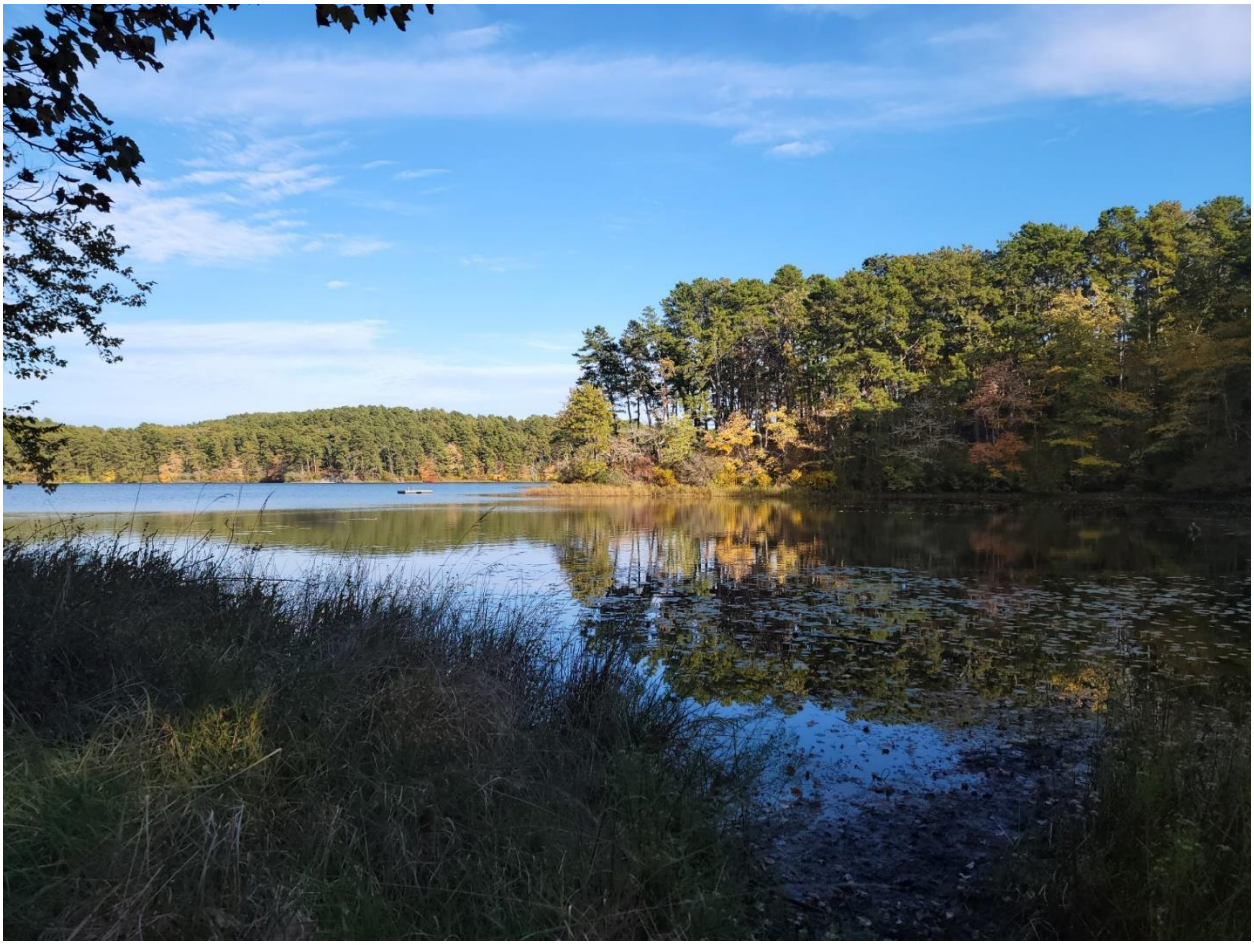
Cape Cod National Seashore
Massachusetts

National Park Service
Department of the Interior

Pond Condition Progress Report



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Work Plan 2023-2024

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Year 25

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Introduction

It is no secret that the freshwater kettle ponds are one of Cape Cod's most precious resources. These kettle ponds were formed around 13,000 years ago, due to the glaciers receding towards the end of the Ice Age. When the glaciers left, Cape Cod became a very biodiverse ecosystem, allowing many different walks of life to inhabit the land. Many difference species of flora, fauna, and fungi were able to thrive; in addition, the Wampanoag Tribe was able to live on the Cape for thousands of years before and after colonization. The kettle ponds are a source of life and biodiversity, making a unique habitat that should be protected.

In the past few hundred years, Cape Cod has become one of the most popular vacation destinations in the country. The increase in tourism brought economic development and infrastructure, but also an abundance of people. When these new structures were built, there ended up being excess waste; cesspools/septic systems, chemical runoff from pesticide use, and local industry were some of the ways that the kettle ponds started to become polluted. The land around many of the ponds began having houses and structures, which changed the natural aesthetic.

As a result of climate change and the average temperature becoming warmer each year; there has been a rise in Cyanobacteria and Algal Blooms. This bacterium is toxic towards humans and animals, this is very harmful because they are not always identified before the ponds are used.

Due to the increase in tourism, many people began discovering the kettle ponds and wanted to experience the beauty themselves. Usage of the kettle ponds greatly increased, which lead to erosion. Erosion around the ponds has become quite severe, which in turn, made many of the paths and slopes become quite dangerous. Cape Cod National Seashore has been working on this problem for many years now and a few solutions have been found. Putting up biodegradable "wattle" underneath the eroded area to catch any sediment that could fall and putting up "snow fencing" around the wattle, have been shown to discourage human activity in those areas and reduce erosion.

Each year, Cape Cod National Seashore's Maintenance crew works with the Ponds Team and AmeriCorps to add new plants and to fix the broken infrastructure. The Fall Ponds Day consists of; native plants being brought in and planted at the ponds to reestablish the original flora. During the Spring Ponds Day the split rail in the parking lot that is broken or rotted away is replaced. In addition, there is signage that is put up at the entrance and the message on the signs has changed over the years. Currently, the newest informational signs are to inform the public about Cyanobacteria and Algal Blooms that could be present.

The kettle ponds are a resource that needs to be protected and restored. CACO's Pond Team and Maintenance crew have been working to save the ponds, to preserve the natural ecosystem of Cape Cod for over ten years.

Wellfleet and Truro Kettle Ponds

Below is a list of all the ponds in Wellfleet and Truro that were worked on or that are priorities for further work. Also listed are the other ponds in the area that are not included in the pond work because they have limited public access because they are not great ponds of 10 acres or more, and therefore do not have the same erosion problems as the rest.

Wellfleet:

- Dyer
- Duck
- Spectacle
- The Sluiceway (town landing at Gull-Higgins Ponds with NPS-owned land adjacent)
- Higgins
- Gull (town landing)
- Great (town landing) with adjacent NPS-owned land used as a beach
- Herring
- Long Pond “pocket” or walk-in park (also has town-owned landing)

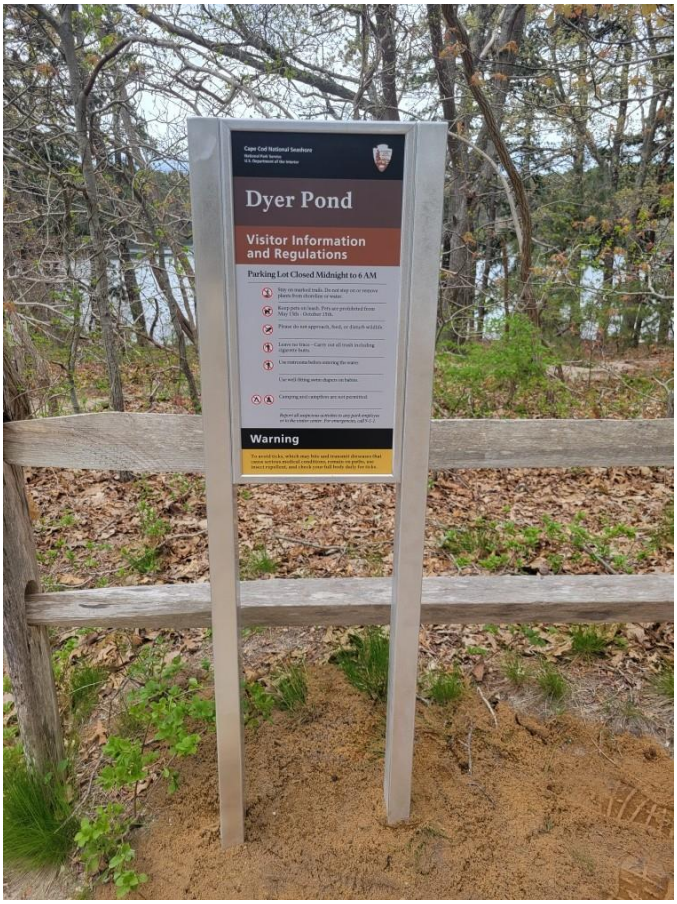
Truro:

- Snow
- Great
- Ryder
- Slough
- Horseleech

Limited Public Access (Private):

- Kinnacum
- Northeast
- Southeast
- Turtle
- Williams
- Round (East)
- Round (West)

New Pond Signs Installed in 2024



Pond Resource Management Activities

Activities built on the previous years of hands- on natural resource management-based workdays at the shoreline of CCNS kettle ponds to address erosion and other concerns. The focus was to visit and assess needs of each pond, attend to maintenance needs such as, installing signs, installing new fencing, closing off social trails, and planting native species.

Fall Pond Workday – 11/27/2023

Wellfleet

- Dyer Pond
- Duck Pond
- Great Pond Wellfleet
- Ryder Pond

Truro

- Horseleech Pond
- Great Pond Truro
- Snow Pond

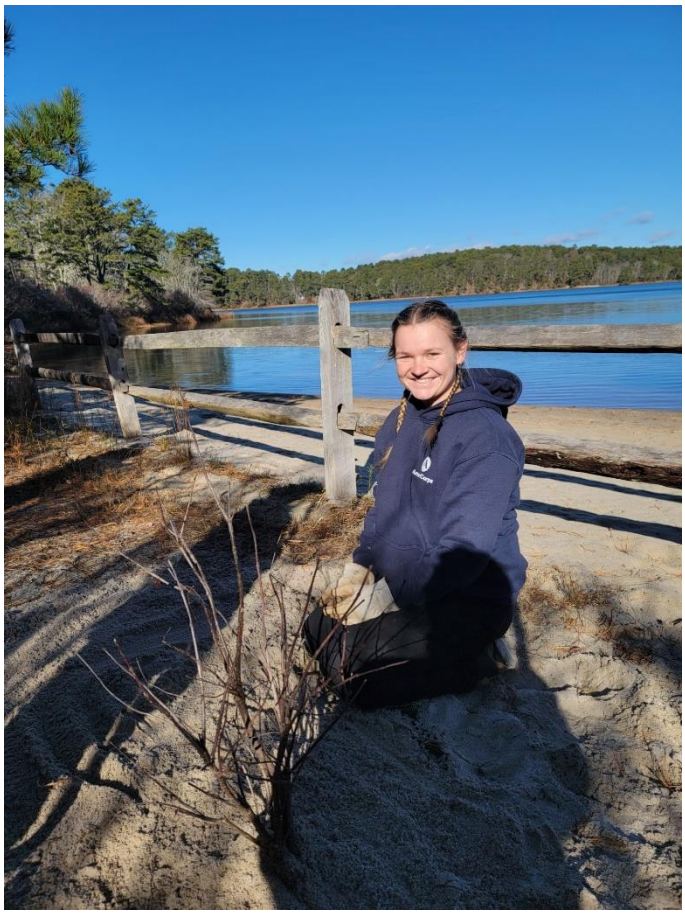
Spring Pond Workday – 5/10/2024

Wellfleet

- Spectacle Pond
- Sluiceway
- Higgins Pond
- Duck Pond
- Ryder Pond
- Gull Pond
- Long Pond

Truro

- Snow Pond
- Great Pond Truro
- Slough Pond
- Horseleech Pond



Work Procedure

1) Assess each site and document when is needed; ex. Supplies and who needs help.
2) Make sure park work orders and AmeriCorps group project request forms are submitted.
3) Catalogue and order needed supplies.
4) Communicated with Conservation Commission or Department of Public Works as needed.

Fall Pond Workday (11.27.2023): Dyer, Duck, Great Wellfleet, Great Truro, Snow, Ryder

Dyer Pond

Work completed:

Main beach area and side to north:

- Burlap wrapped wattle for staked area - 30 ft wattle
- Planted 6 bayberry and 4 pepperbush
- Planted freebies & 3 Buttonbush at larger gaps

South side beach – midpoint beach

- Installed 36 feet of green wire fence
- Replaced 6’ step

Follow-up:

- Monitor condition of pond

Duck Pond

Work completed:

At beach:

- Wrapped wattle on pond frontage with burlap
- Planted 3 shrubs - pepperbush along root area
- Cleaned out water bars

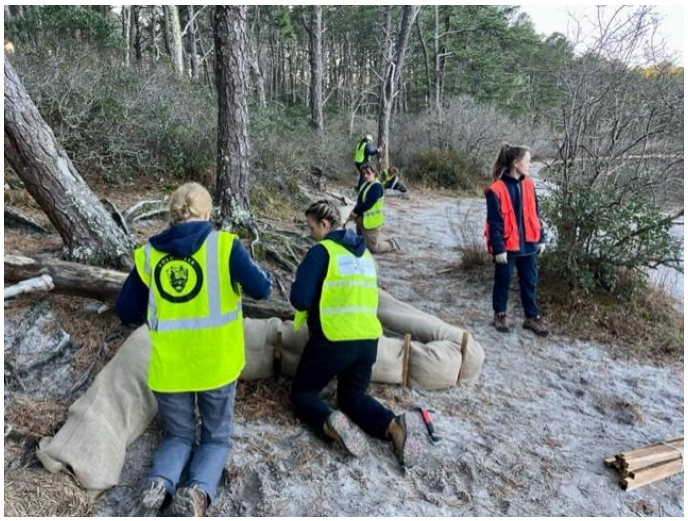
Follow-up:

- Monitor condition of pond

(Above) Native Flora Being Planted

(Below) Wattle Being Constructed

Great Pond Wellfleet



Work completed:

- Planted 8 Bayberry, 3 Buttonbush at beach area
- Replaced split rails on town side (east)

Follow-up:

- Monitor condition of pond

Great Pond Truro

Work completed:

- Planted 3 Bayberry, 5 inkberry at main area

Follow-up:

- Monitor condition of pond; install more wattle to contain erosion in spring

Snow Pond

Work completed:

- Planted 4 Inkberry last fishing spot on slope

Follow-up:

- Monitor condition of pond

Ryder Pond

Work completed:

<u>Water quality team planting by December 1:</u>

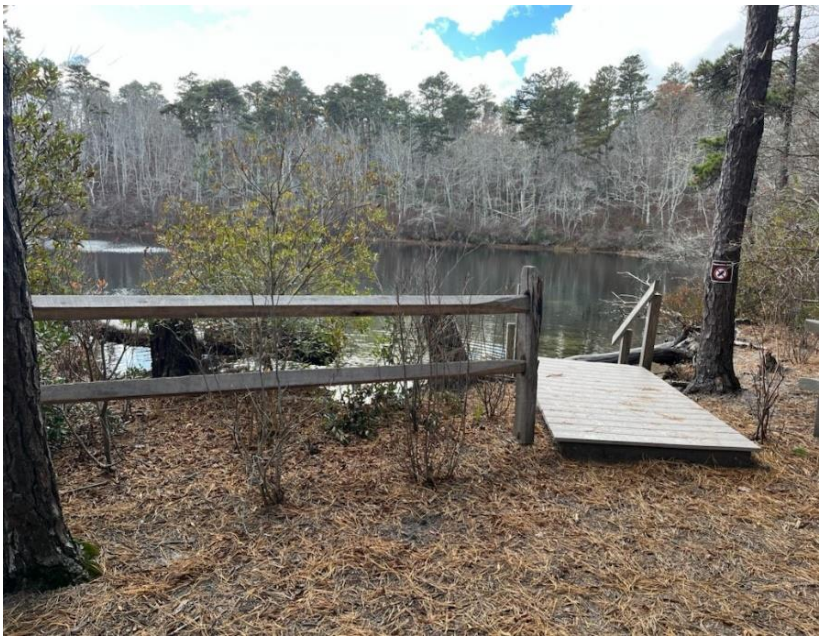
- Planted 3 Pepperbush at new trail to east at beach

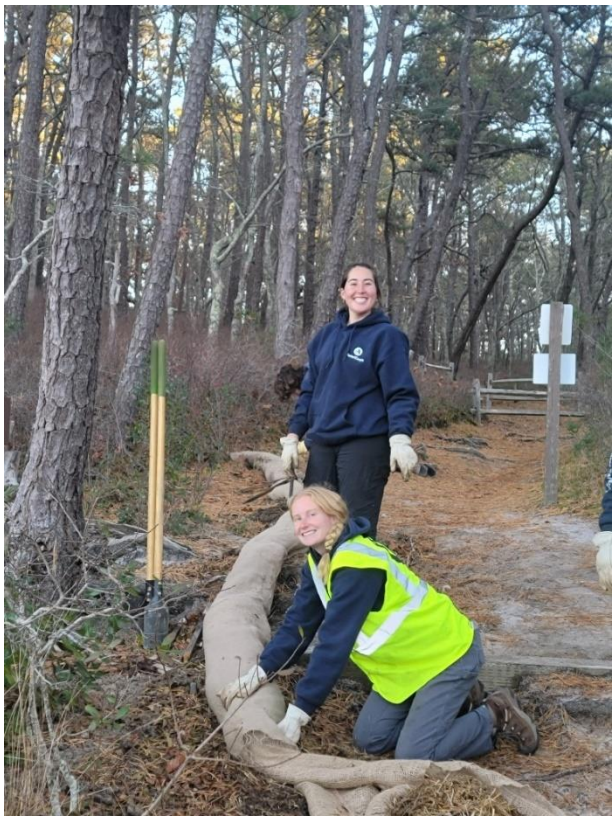
Follow-up:

- Monitor condition of culvert and pond

(Left) Spectacle Pond - Stairs

(Right) Duck Pond – Wattle Installation





Spring Pond Workday (05.10.2024) Spectacle, Sluiceway, Higgins, Duck, Ryder, Gull, Long, Snow, Great Truro, Slough, Horseleech

Spectacle Pond

Work completed:

- Installed Cyanobacteria and Algal Bloom Sign
- Repaired 1 split rail at parking lot
- Stair replacement
- Cut tree at bottom of stairs
- Removed restoration sign from tree

Follow-up:

- Monitor condition of pond

Sluiceway

Work completed:

- Installed Cyanobacteria and Algal Bloom Sign
- Repaired 2 Sections of fence on main road
- Installed 1 replacement rail for fence
- Replaced snow fence at pond (where hole was made) – 10-foot section

Follow-up:

- Monitor condition of pond

Higgins Pond

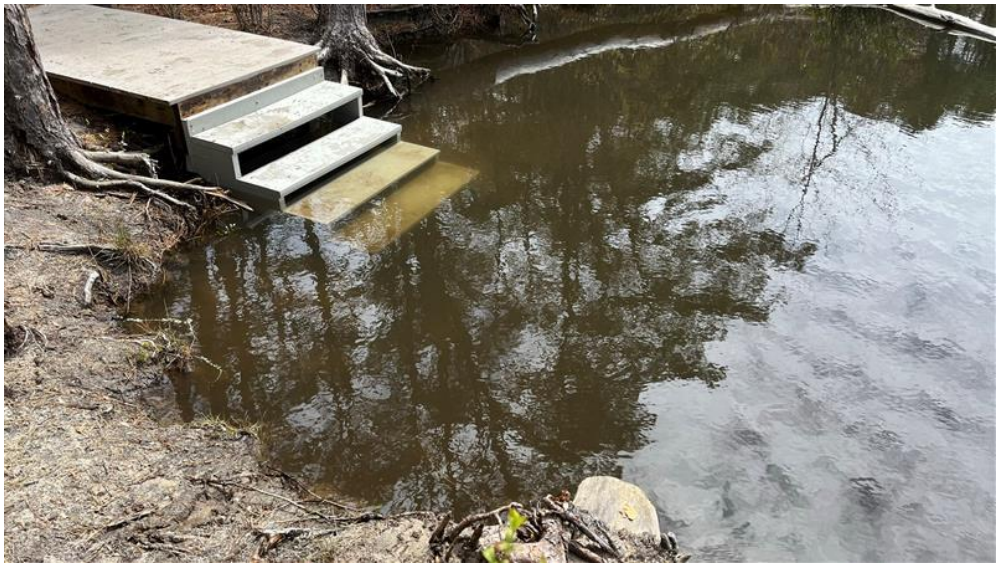
Work completed:

- Installed Cyanobacteria and Algal Bloom Sign
- Reinstalled Signpost at Herring Pond access
- Fixed one broken rail

Follow-up:

- Monitor condition of pond

(Below) Spectacle – New Stairs



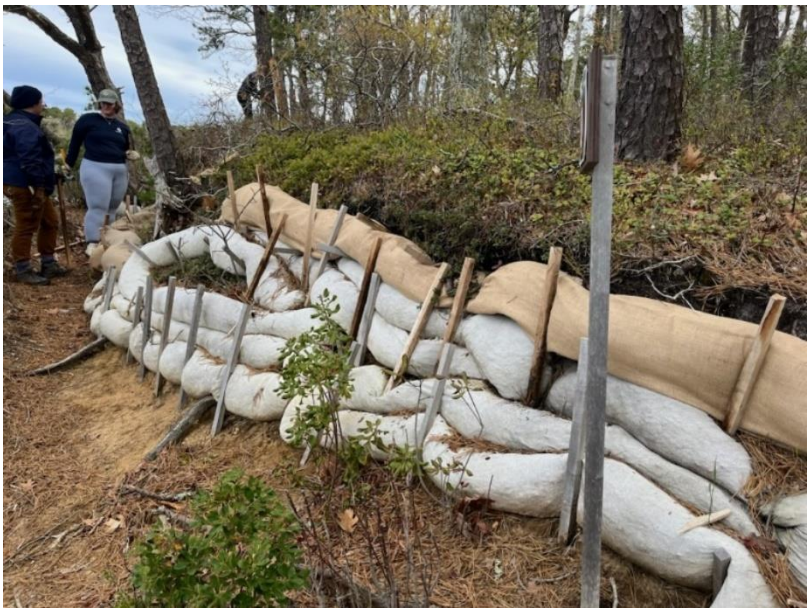
Duck Pond

Work completed:

- Installed Cyanobacteria and Algal Bloom Sign

Follow-up:

- Monitor condition of pond



Ryder Pond

Work completed:

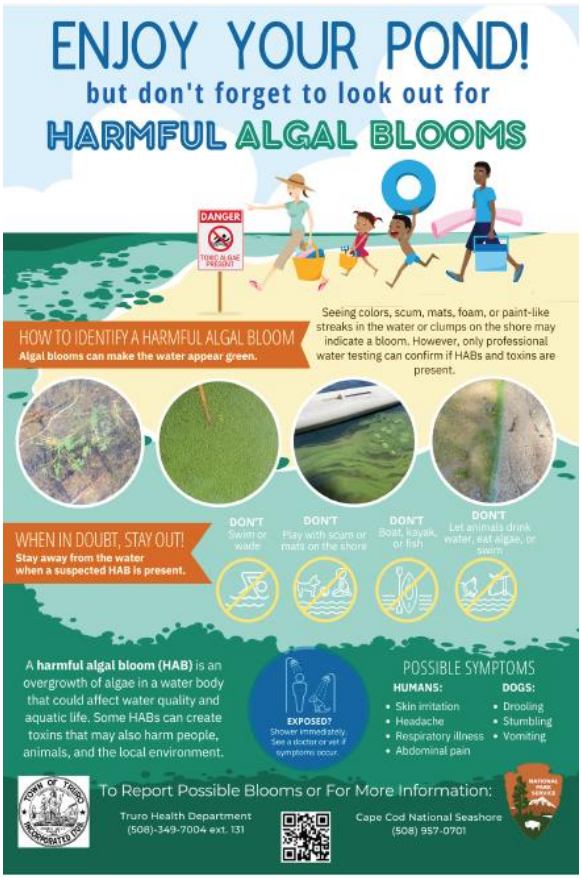
- Installed Cyanobacteria and Algal Bloom Sign
- at beach (replaces Covid sign)
- Replaced 1 post, 5 rails at parking area
- Removed fence on road at parking lot

Follow-up:

- Monitor condition of pond

(Above) Wattle Wall

(Below) New Cyanobacteria/Algal Bloom Signs



Gull Pond

Work completed:

- Installed Cyanobacteria and Algal Bloom Sign
- Replaced 6 split rails and 2 fence posts

Follow Up:

- Monitor condition of pond

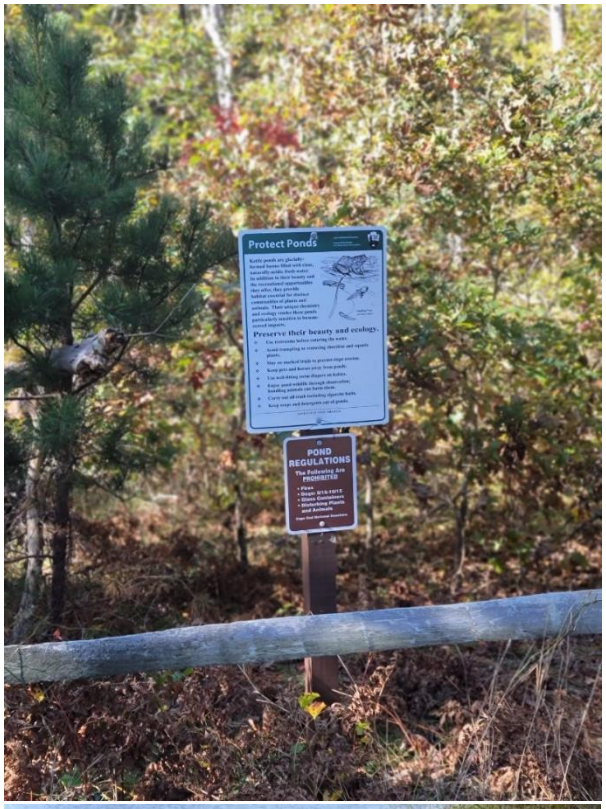
Long Pond

Work completed:

- Installed Cyanobacteria and Algal Bloom Sign
- Replaced 3 Split rails
- Installed 30ft snow fencing
- Installed 50ft snow fence along path at slope

Follow-up:

- Monitor condition of pond



(Above) "Protect Ponds" Sign

(Below) Great Pond Truro

Snow Pond

Work completed:

- Installed Cyanobacteria and Algal Bloom Sign (Removed covid signs)
- Installed New Pond Regulations Sign
- Installed 4ft step at pond edge (Roads and Trails)
- Cleaned water bars on trail and leading to beach – use sand to backfill at pond edge step
- Installed 5ft doubled wattle wall w/burlap at fishing spot

Follow-up:

- Monitor conditions of pond

Great Pond Truro

Work completed:

- Installed Cyanobacteria and Algal Bloom Sign
- Installed 25ft Double wattle w/burlap midway to fish beach
- Installed Restoration sign and installed a new fence section to close fishing beach area
- Installed 15ft wattle at fish beach on top of existing wattle
- Replaced 2 Posts 2 Rails – at top of trail down to fish beach to close trail

Follow-up:

- Monitor conditions of pond

Slough Pond

Work completed:

- Installed Cyanobacteria and Algal Bloom Sign
- Replaced 1 post and 1 rail at Triangle Parking Lot
- Installed 2-5ft wattle at beach to protect tree roots
- Installed 10ft wattle w/burlap at pond ½ down – where slope is eroding

Follow-up:

- Monitor condition of pond

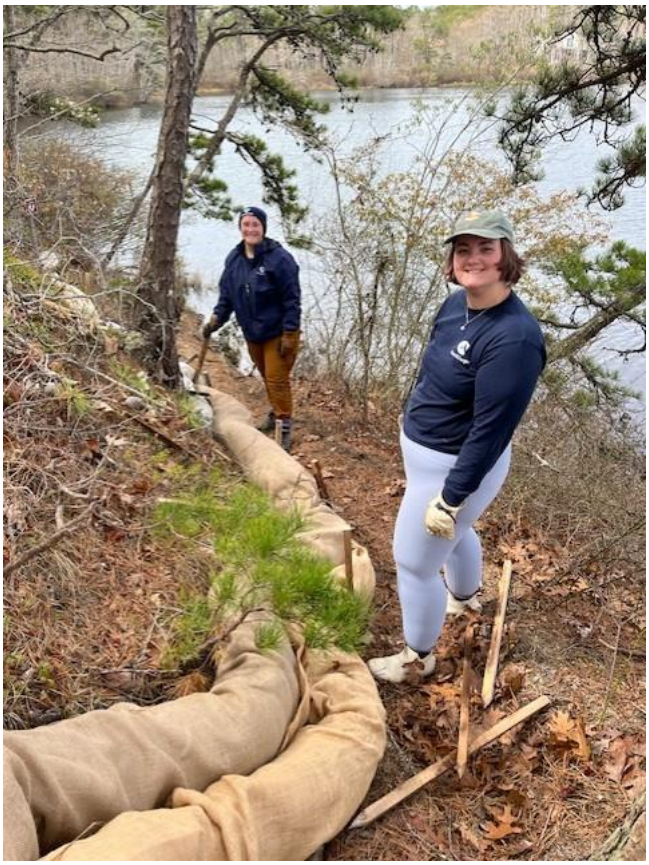
Horseleech Pond

Work completed:

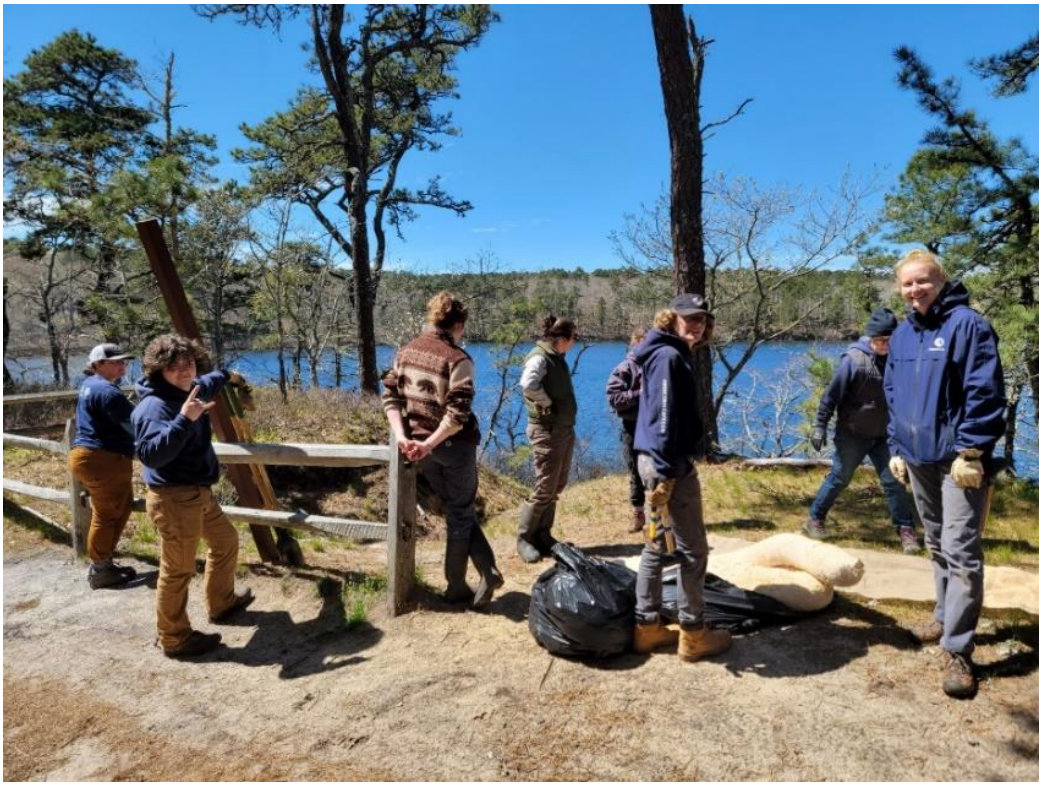
- Installed Cyanobacteria and Algal Bloom Sign
- Installed 25ft metal fence at pond edge west side of main path
- Installed 20ft metal fence at east side of main path

Follow-up:

- Monitor condition of pond



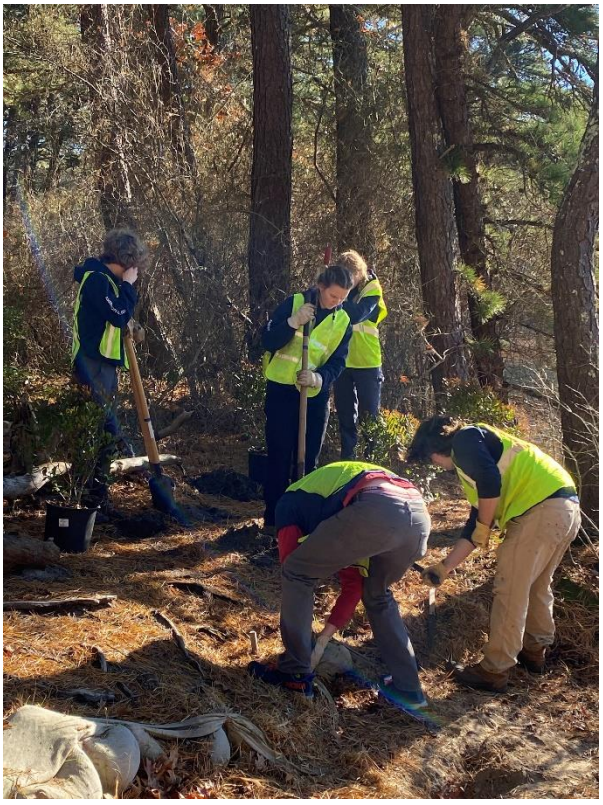
(Above and Below) Slough Pond

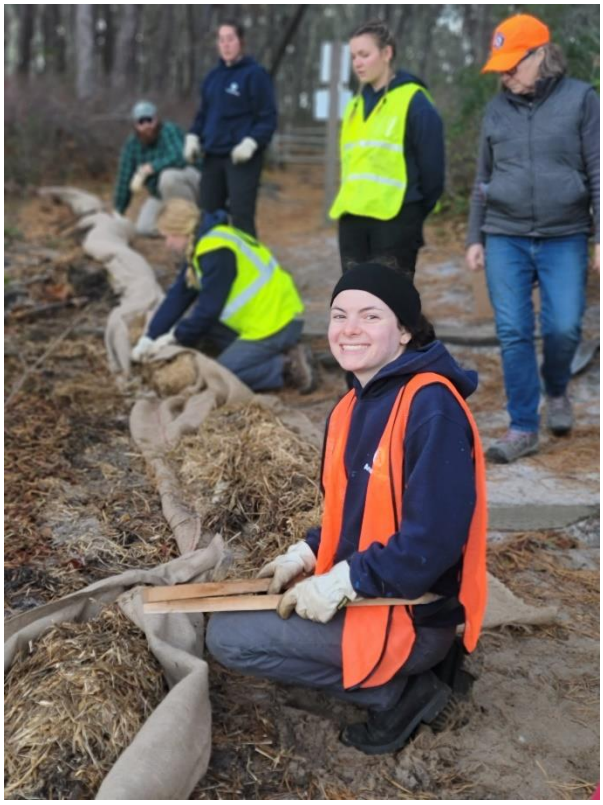


Key Findings

The Ponds Team has been working to restore the Kettle Ponds to their natural beauty and ecosystem; in the past six years of effort, here is what was learned –

- There must be routine monitoring and surveying done to insure – the safety, health, and quality of the water and land surrounding the ponds. If this were to stop, then the public and ecosystem would be at risk.
- Having Barnstable County AmeriCorps Cape Cod as a resource is crucial for the project(s)
- Keeping strong partnerships between CCNS Ponds Group, Wellfleet Health & Conservation, Wellfleet Beach Department, and Wellfleet Department of Public Works is important because it engages different parties and unites them under a common goal.
- An increase of pond usage leads to – illegal parking, erosion, broken infrastructure, and widening social trails.
- Since there is a decline in activity in the fall, it would be the best time to engage volunteers and Friends of the National Seashore for projects.
- The spring is focused on fixing infrastructure such as – fencing, wattle, stairs, and installing new signage.
- Taking care of the shorelines is an ongoing project, which requires a collaborative effort between CCNS and Towns of Wellfleet & Truro.





Pond Workgroup Members:

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Lauren McKean, CCNS Park Planner
Sophia Fox, PhD, CCNS Aquatic Ecologist
Steve Smith, PhD, CCNS Plant Ecologist
Andy Ives, CCNS Roads, Trails and Grounds (RTG) Maintenance Supervisor

In Cooperation With:

Barnstable County AmeriCorps Cape Cod Year 25 members
American Conservation Experience
CCNS RTG Maintenance
Wellfleet Department of Public Works
Wellfleet Beach Department