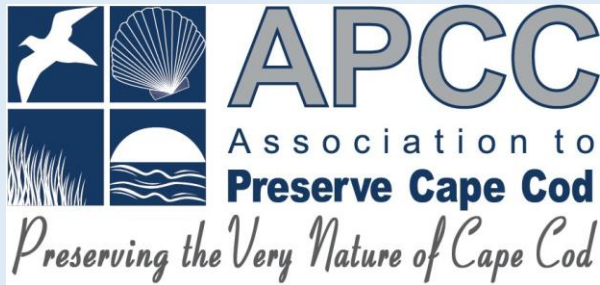


Cape Cod Ponds Network

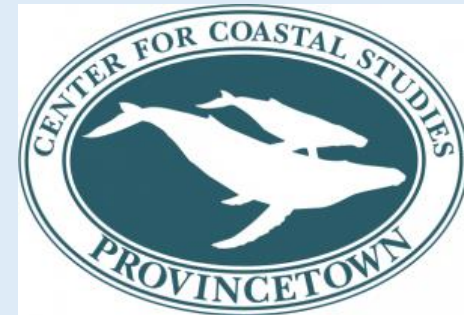
Monday, Jun 05, 2023 4:30 PM

FRESHWATER INITIATIVE

Cape Cod Regional Pond Monitoring Program



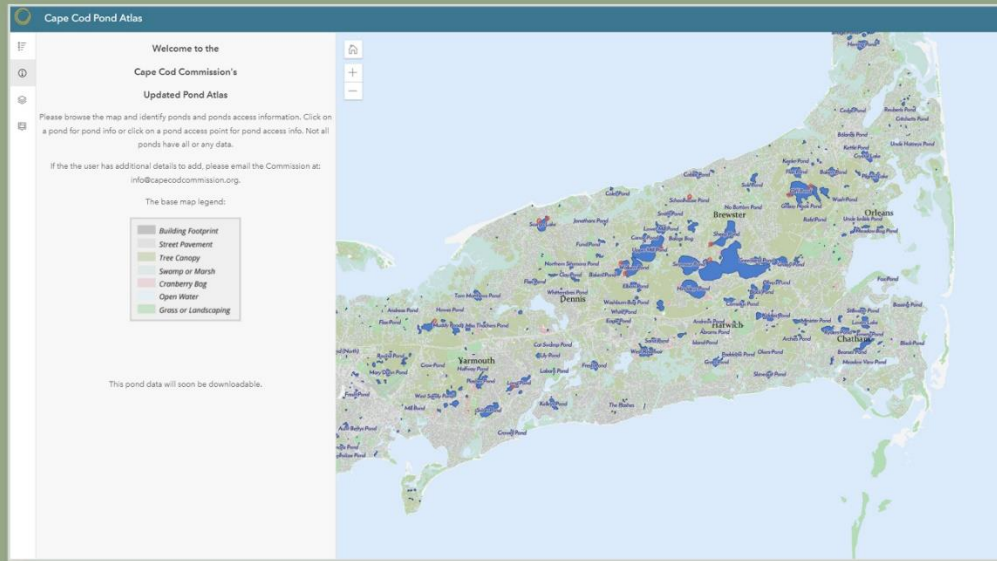
CAPE COD
COMMISSION





Program objectives

- Help Cape Cod communities to better protect and manage our ponds by collecting water quality data to characterize pond conditions, and to understand the effects of watershed development and other stressors.
- Standardize data collection following quality control standards set by state and federal agencies.
- Inform pond protection and management strategies.



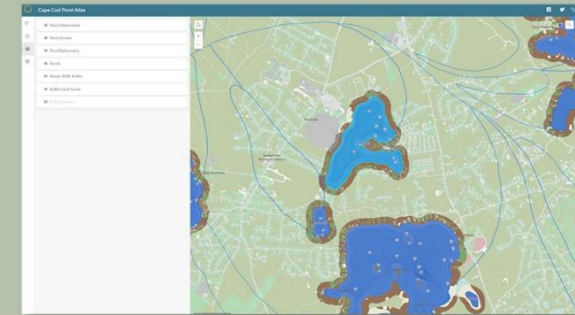
Cape Cod Pond Viewer

AN ATLAS COMPANION

The Pond Viewer serves as a companion to the Atlas and can be used to explore Cape Cod's ponds, ecology, and the challenges they face.

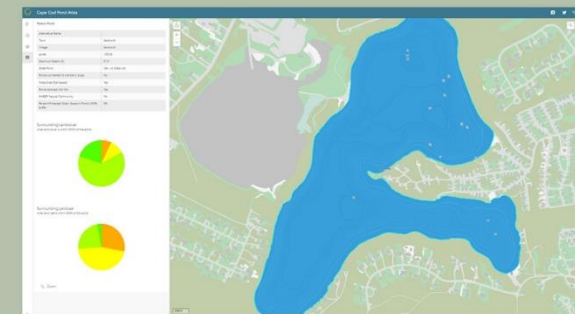
Users can identify ponds and pond access information using the map interface. Click on a pond to view pond characteristics or click on a pond access point for pond access details. Not all ponds have available data.

EXPLORE: cccom.link/pond-atlas



MAP LAYERS

Available map layers include access points, pond watershed delineations, bathymetry data, 300 ft. pond buffer area, and other pond and surrounding land use characteristics.



POND CHARACTERISTICS

Select a pond and open the Info Panel to view related characteristics including acreage, depth, and more. Users can also explore surrounding land cover and land use summaries within a 300 ft. pond buffer area.

Cape Cod Pond Viewer

Land Cover Types



Cape Cod Pond Viewer

Pond Characteristics

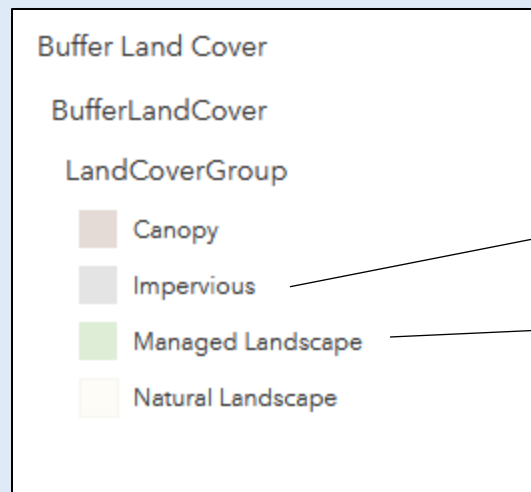
Sand Pond

| | |
|--|---------------------|
| Alternative Name | |
| CCC-GIS-ID | HA-525 |
| Town | Harwich |
| Village | Harwich |
| Acres | 23.39 |
| Maximum Depth (ft) | 25.0 |
| Great Pond | Yes - on State List |
| Ponds connected to cranberry bogs | Yes |
| Watershed Delineated | No |
| Ponds stocked with fish | No |
| NHESP Natural Community | No |
| Percent Protected Open Space in Pond's 300ft. buffer | 22% |



Cape Cod Regional Pond Monitoring

Estimating level of pond development

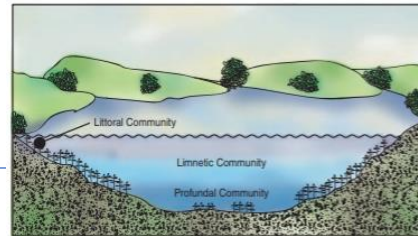




Pond Monitoring Program – Pond Selection

Ponds on Cape Cod

~890 ponds



Pond Characteristics



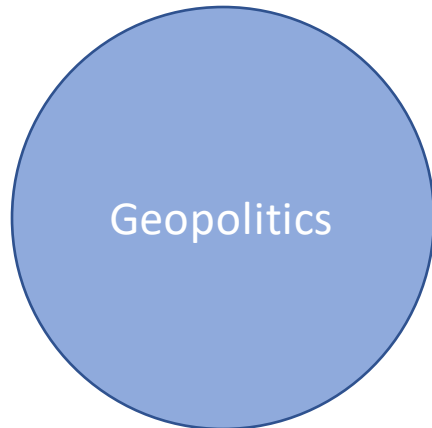
Watershed Characteristics



Existing Monitoring



Past & Present Use



Geopolitics

50 ponds

Ponds in Monitoring Program

Pond Characteristics – Program Builder

| CCC-GIS-ID | Name | Town | Acres | Depth | Depth Class | Development Class | Herring Run |
|---------------|--------------------------|------------|-------|-------------|-------------|-------------------|-------------|
| BA-565 | Hathaway Pond (N | Barnstable | 21.84 | 57 deep | | Very Low | 0 |
| BA-737 | Long Pond | Barnstable | 54.32 | 23 deep | | Very High | 0 |
| BA-759 | Lovells Pond | Barnstable | 55.67 | 37 deep | | Medium | 0 |
| BA-795 | Lake Elizabeth | Barnstable | 7.147 | 4 shallow | | High | Yes |
| BA-797 | Micah Pond | Barnstable | 15.95 | 41 deep | | Very Low | 0 |
| BO-212 | Queen Sewell Pond | Bourne | 17.97 | 28 deep | | High | 0 |
| BO-556 | Flax Pond | Bourne | 22.78 | 6 shallow | | High | 0 |
| BO-644 | Red Brook Pond | Bourne | 17.47 | 10 shallow | | Medium | Yes |
| BR-1028 | Cliff Pond | Brewster | 205.2 | 95 deep | | Very Low | 0 |
| BA-510 | Garretts Pond | Barnstable | 29.04 | 28 deep | | Medium | 0 |
| BR-279 | Long Pond | Brewster | 742.9 | 70 deep | | Medium | Yes |
| BR-321 | Slough Pond | Brewster | 32.37 | 30 deep | | Medium | 0 |
| CH-458 | Goose Pond | Chatham | 40.88 | 52 deep | | Very Low | 0 |
| CH-516 | White Pond | Chatham | 42.98 | 59 deep | | Medium | 0 |
| DE-201 | Coles Pond | Dennis | 11.37 | 5.2 shallow | | Very Low | No |
| DE-236 | Scargo Lake | Dennis | 60.95 | 48 deep | | High | Yes |

Barnstable Levels of Development



| <i>Low</i> | | |
|---------------|------------------------------|-------------|
| BA-565 | Hathaway Pond (North) | deep |
| BA-596 | Lamson Pond | shallow |
| BA-608 | Little Israel Pond | #N/A |
| BA-723 | Dunns Pond | #N/A |
| BA-797 | Micah Pond | deep |
| BA-594 | Hathaway Pond (South) | shallow |
| BA-719 | Lumbert Pond | shallow |
| BA-807 | Joshua Pond | deep |

| <i>Medium</i> | | |
|---------------|---------------------|-------------|
| BA-510 | Garretts Pond | deep |
| BA-584 | Mystic Lake | deep |
| BA-626 | Shallow Pond | shallow |
| BA-668 | Hamblin Pond | deep |
| BA-691 | Round Pond | deep |
| BA-694 | Muddy Pond | deep |
| BA-759 | Lovells Pond | deep |
| BA-843 | | #N/A |

| <i>High</i> | | |
|---------------|-----------------------|----------------|
| BA-664 | Shubael Pond | deep |
| BA-748 | Fawcetts Pond | #N/A |
| BA-795 | Lake Elizabeth | shallow |
| BA-874 | Neck Pond | #N/A |
| BA-875 | Parker Pond | #N/A |
| BA-878 | Crystal Lake | #N/A |
| BA-605 | Wequaquet Lake | deep |
| BA-737 | Long Pond | deep |



Pond Water Quality Monitoring Program – Selected Ponds

Ponds by Town

| | |
|--------------|---|
| Barnstable | 7 |
| Bourne | 3 |
| Brewster | 3 |
| Chatham | 2 |
| Dennis | 3 |
| Eastham | 3 |
| Falmouth | 5 |
| Harwich | 4 |
| Mashpee | 3 |
| Orleans | 3 |
| Provincetown | 2 |
| Sandwich | 4 |
| Truro | 2 |
| Wellfleet | 3 |
| Yarmouth | 3 |

Size

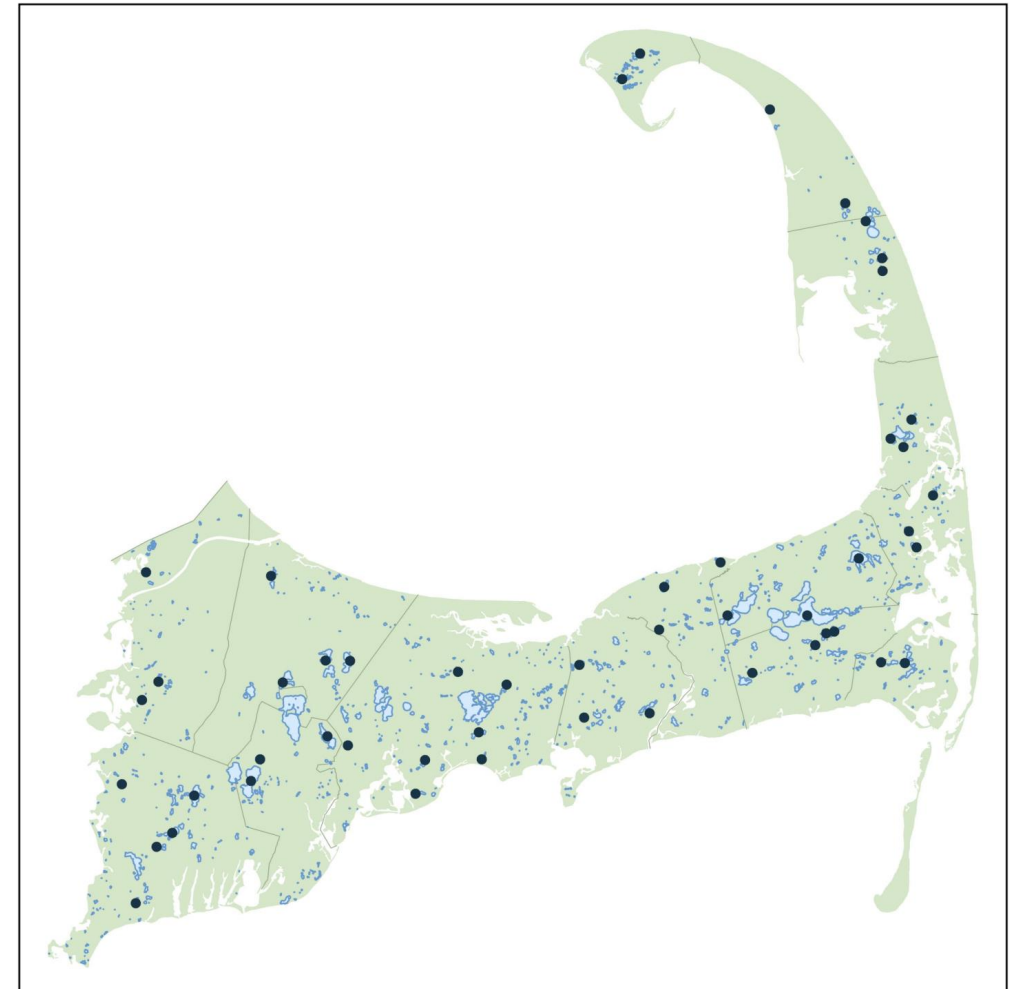
| | |
|----------|----|
| <5 ac | 4 |
| 5-10 ac | 4 |
| 10-25 ac | 16 |
| 25-50 ac | 14 |
| >50 ac | 12 |

Depth

| | |
|----------|----|
| 0-6 ft | 8 |
| 6-12 ft | 4 |
| 12-18 ft | 3 |
| 18-24 ft | 3 |
| 24-50 ft | 17 |
| >50 ft | 10 |

Development Level

| | |
|-----------|----|
| Very low | 14 |
| Low | 6 |
| Medium | 14 |
| High | 12 |
| Very High | 2 |



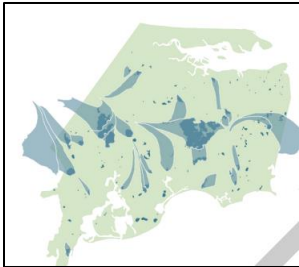


POND MONITORING PROGRAM

Pond Water Quality Monitoring Program – Selected Ponds

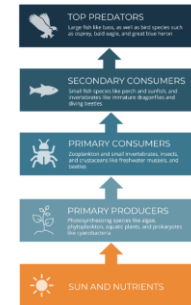


50 ponds



38 ponds with delineated watersheds

32 ponds with biological data



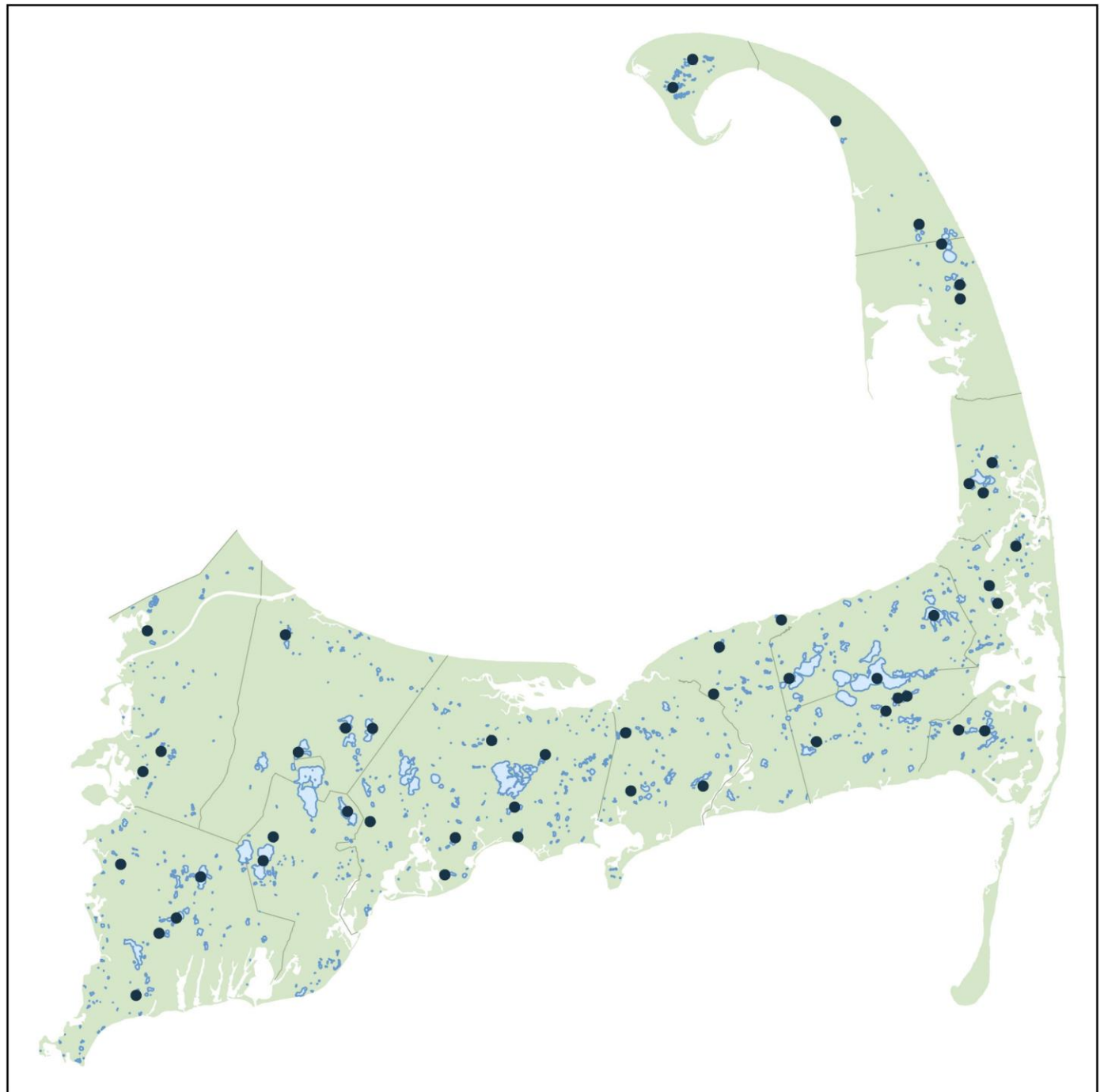
13 ponds with herring runs



6 ponds with rehabilitation projects

11 ponds with surface connections

Cape Cod Regional Pond Monitoring Locations





Pond Water Quality Monitoring Program – How it works

Pond Sampling

- Monthly April – October
- 2-4 samples per pond – collected from deepest point
- Field Parameters
 - DO, Temp, pH, Conductivity, Secchi
- Lab Parameters – in 3 bottles
 - TN, TP, Chl-a, alkalinity, and dissolved nutrients



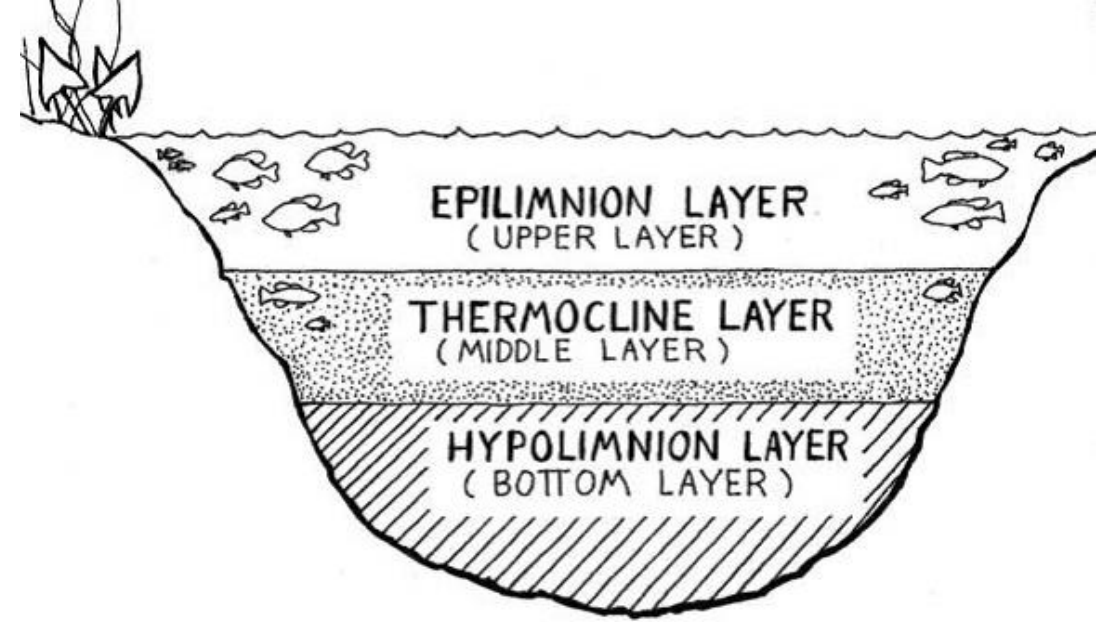
TN, TP



Alkalinity

Chlorophyll-a,
Phaeophytin,
Nitrate/nitrite,
Ammonium, and
Orthophosphate

Monitoring: Collecting water quality data using In Situ sonde



Aqua TROLL 500 Vented - SN 1017840

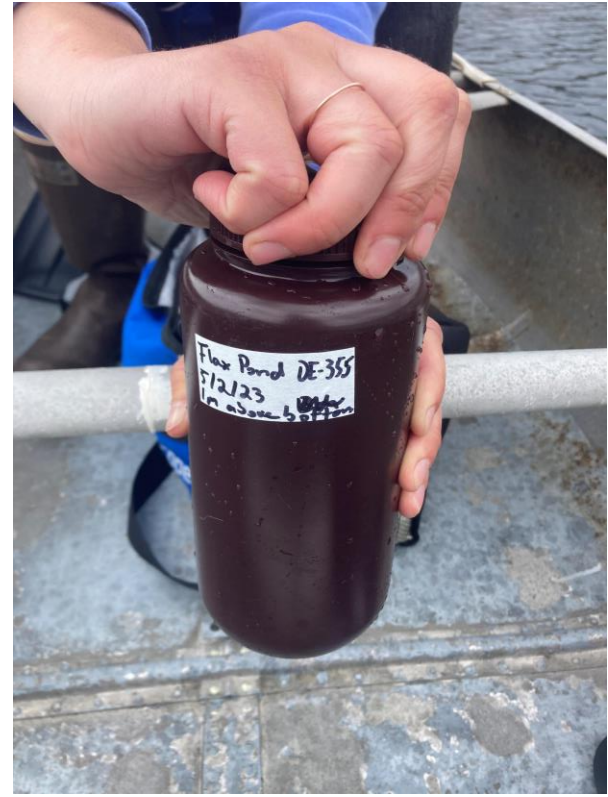
Device Location GPS:

Your device's GPS location will...

[Change Location >](#)

Refresh Rate: 2 sec

| | | | | |
|-------------------------------------|-------------------------|-------------------|--|--|
| <input checked="" type="checkbox"/> | RDO Concentration | 9.82 mg/L | | |
| <input checked="" type="checkbox"/> | RDO Saturation | 105.98 %Sat | | |
| <input checked="" type="checkbox"/> | Oxygen Partial Pressure | 151.03 Torr | | |
| <input checked="" type="checkbox"/> | pH | 7.41 pH | | |
| <input checked="" type="checkbox"/> | pH mV | -24.0 mV | | |
| <input checked="" type="checkbox"/> | ORP | 202.9 mV | | |
| <input checked="" type="checkbox"/> | Actual Conductivity | 314.06 μ S/cm | | |



Monitoring:

Collecting water samples at different depths using the Van Dorn sampler

Once the 1st water sample is collected, we have 6 hours to drop the samples off at the Center for Coastal Studies

APCC Monitoring Team

Sophia Feuerhake



Volunteers ☺



John-Tyler Percy (JT)



APCC Pond Monitor Volunteer – Onboarding

1. Fill out Volunteer Pond Monitor application form on our website here:

<https://apcc.org/pond-monitoring/>

2. You'll receive a Pond Monitor Orientation Video, Volunteer Handbook, and link to:

3. SignUpGenius for Pond Monitor shifts by date and town.

4. Mark your calendar with all monitoring shifts and check your email for reminders.

5. Connect with APCC staff lead technician. After signing up for monitoring shifts, you will receive a phone call from our APCC staff to coordinate.

Be safe and have FUN!



Pond Water Quality Monitoring Program – Selected Ponds

Ponds by Town

Barnstable

Garretts Pond
Hathaway Pond
Long Pond
Lovells Pond
Lake Elizabeth
Micah Pond
Parker Pond

Bourne

Flax Pond
Queen Sewell Pond
Red Brook Pond

Brewster

Cliff Pond
Long Pond
Slough Pond

Chatham

Goose Pond
Barclay Pond

Dennis

Coles Pond
Flax Pond
Scargo Lake

Eastham

Bridge Pond
Herring Pond
Ministers Pond

Falmouth

Coonamesset Pond
Jenkins Pond
Mares Pond
Shivericks Pond
Wing Pond

Harwich

Cornelius Pond
Hawksnest Pond
Sand Lake
Walkers Pond

Mashpee

Johns Pond
Moody Pond
Santuit Pond

Orleans

Crystal Lake
Pilgrim Lake

Provincetown

Reubens Pond
Blackwater Pond
Clapps Pond

Sandwich

Lawrence Pond
Peters Pond
Shawme Lake
Spectacle Pond

Truro

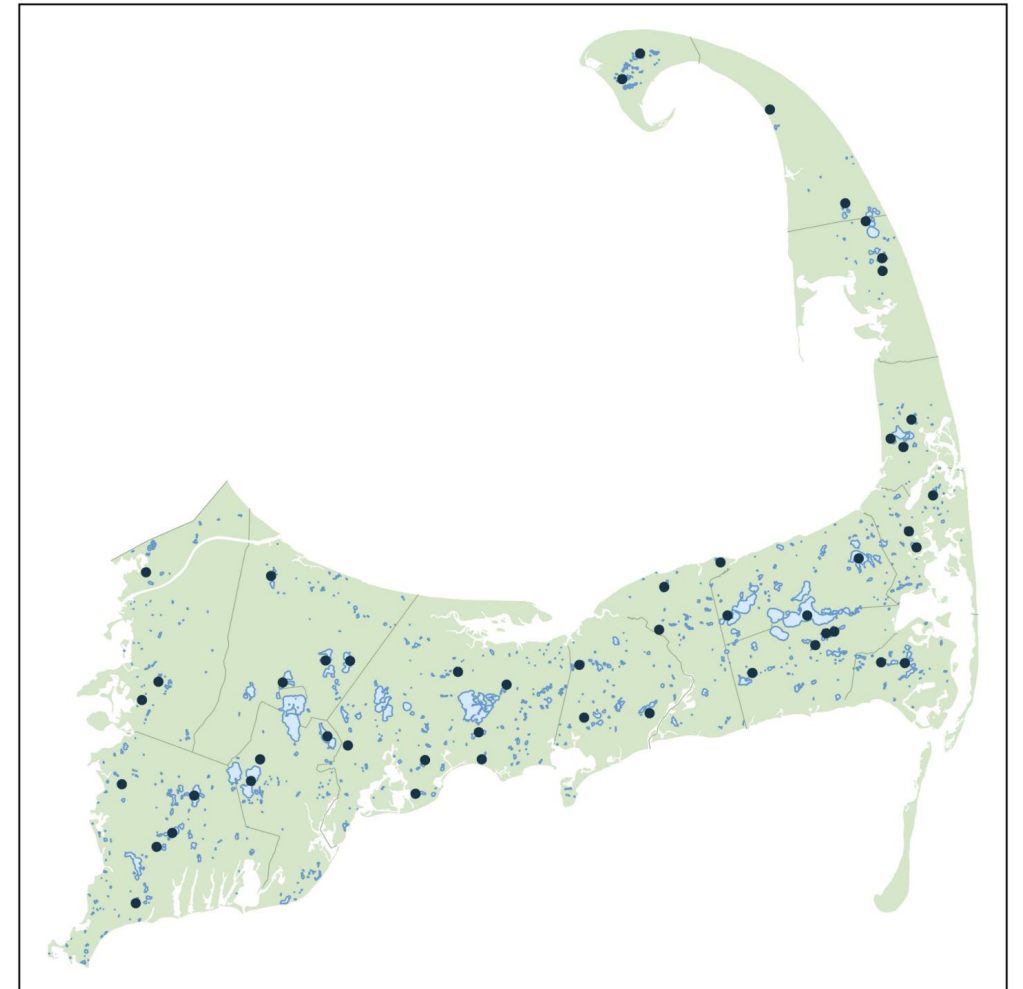
Village Pond
Great Pond

Wellfleet

Duck Pond
Great Pond
Herring Pond

Yarmouth

Dennis Pond
James Pond
West Sandy Pond



Contact Information

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Project Director – Pond and Cyanobacteria Monitoring Programs
Association to Preserve Cape Cod

jhambrook@apcc.org

For Information on Volunteering to Monitor Ponds:

Lynn Francis

Pond and Cyanobacteria Operations and Logistics
Association to Preserve Cape Cod

lfrancis@apcc.org



**Thank you for your interest
in Cape Cod Ponds!**