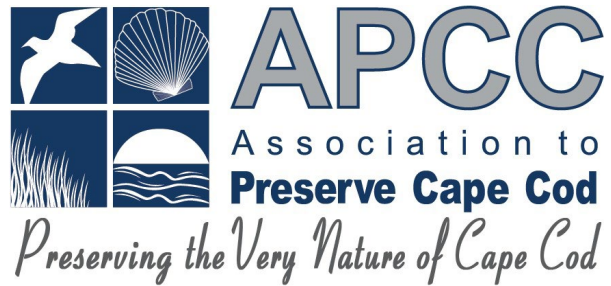


Welcome and thank you for being here today!

# Freshwater Initiative

## Cape Cod Ponds Monitoring Program

---



CAPE COD  
COMMISSION





# Project objectives

---

- Help Cape Cod communities to better protect and manage our ponds by collecting water quality data to characterize pond conditions
- Standardize data collection following quality control standards set by state and federal agencies.
- Inform pond protection and management strategies



# Project plan

---

- Monitor 50 ponds throughout all Cape Cod towns 7x a year between April and October for 3 years
- Monitoring includes:
  - water turbidity measurement
  - collection of water quality parameters using a sonde lowered into the water
  - collection of water samples for lab analyses of nutrients, chlorophyll, and alkalinity

# APCC Monitoring Team

Sophia Feuerhake



Volunteers ☺



John-Tyler Percy (JT)





What will a  
volunteer shift  
look like?

- One volunteer shift will last ~5.5 hours, from 7:30am-1pm
- We will monitor 2 ponds in one shift
- Monitoring will involve paddling to the deepest point with a canoe to collect data throughout the ponds water column

Our  
monitoring is  
weather  
dependent

—  
We will check in  
with you the night  
before monitoring

Safety is our main priority!

T-Mobile Wi-Fi 17:51 100%

### Detailed Forecast

**This Afternoon**  
A slight chance of showers. Mostly cloudy, with a high near 49. North wind around 17 mph. Chance of precipitation is 20%.

**Tonight**  
A slight chance of showers before 3am. Mostly cloudy, with a low around 45. North wind 10 to 13 mph. Chance of precipitation is 20%.

**Friday**  
Cloudy, then gradually becoming mostly sunny, with a high near 50. North wind 13 to 15 mph.

**Friday Night**  
Mostly clear, with a low around 44. West wind 6 to 9 mph.

**Saturday**  
Sunny, with a high near 61. Northwest wind 8 to 10 mph.

**Saturday Night**  
Partly cloudy, with a low around 50. West wind around 9 mph.

**Sunday**  
Mostly sunny, with a high near 63. West wind around 9 mph.

**Sunday Night**  
Partly cloudy, with a low around 51. West wind around 11 mph.

**Monday**  
Sunny, with a high near 63. West wind 8 to 10 mph becoming north in the afternoon.

**Monday Night**  
Partly cloudy, with a low around 49. South wind around 10 mph becoming northwest after midnight.

**Tuesday**  
Partly sunny, with a high near 63. West wind around 10 mph becoming east in the afternoon.

[View in Desktop Mode](#)

forecast.weather.gov

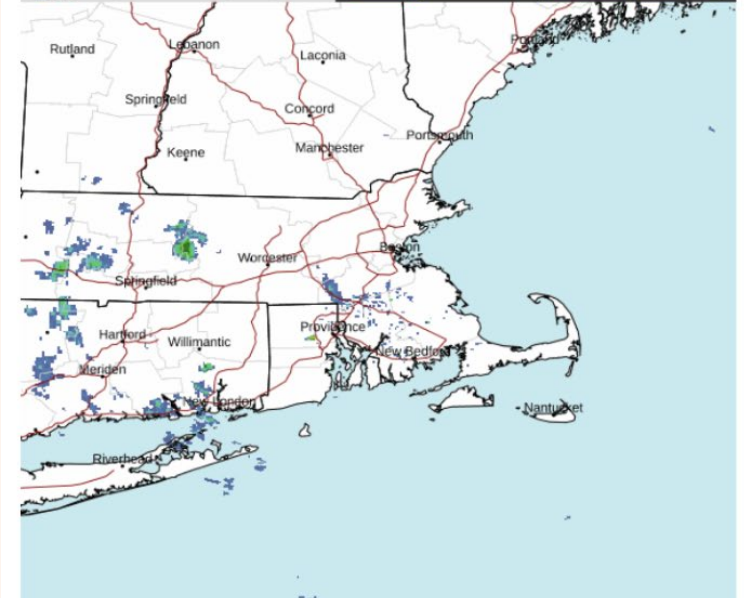
T-Mobile Wi-Fi 17:52 100%

NWS | Radar

Interactive radar is available on the [Enhanced KBOX Radar](#) page, which is now located on the main navigation using the down arrow button.

Pan High Res KBOX

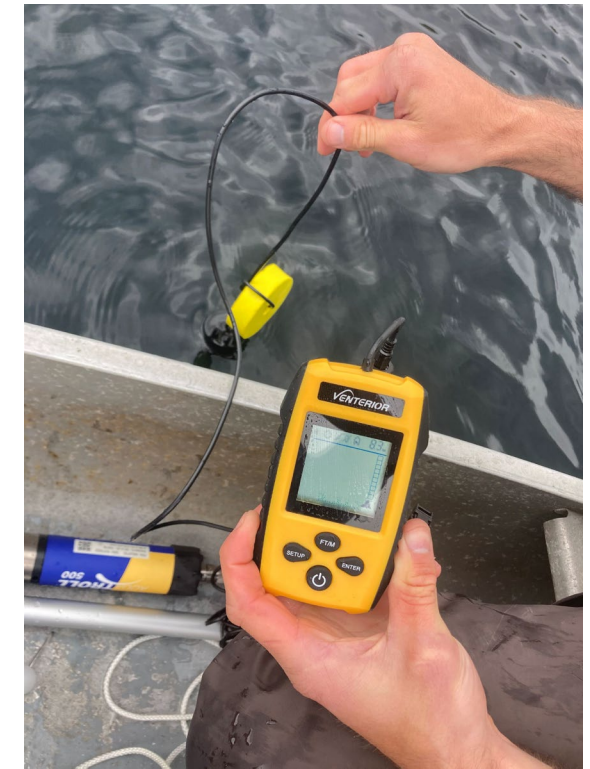
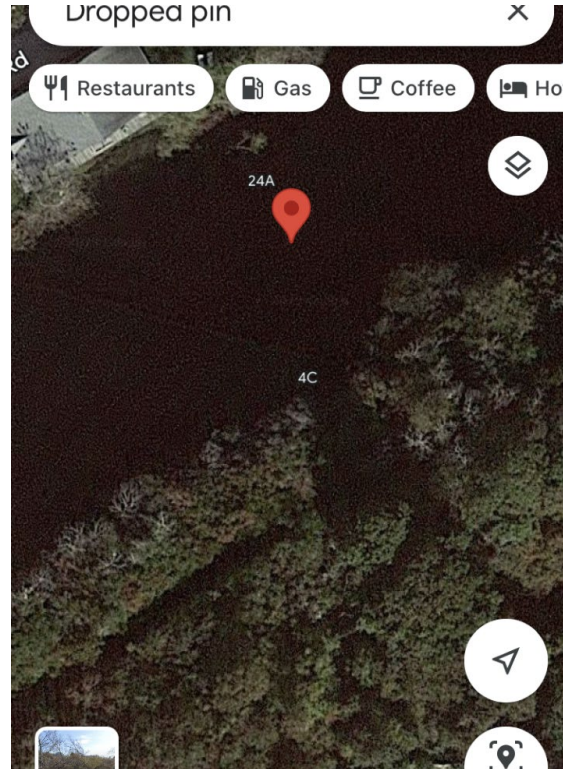
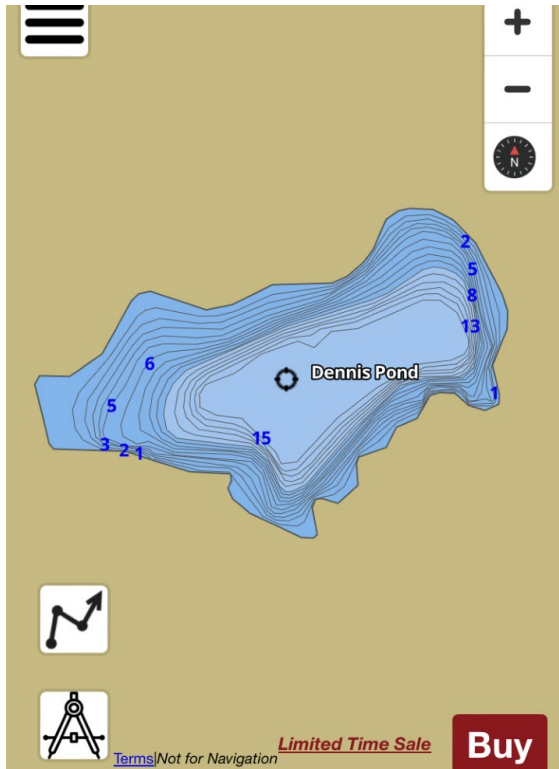
NATIONAL WEATHER SERVICE Tornado Severe Thunderstorm Flash Flood Special Marine



05/04/2023 21:41 UTC (17:41 EDT) KBOX

Auto Playback

AA radar.weather.gov



~7:30am

- We meet at the 1st pond of the day
- JT and I will have the canoe and all the gear ready to deploy
- Together, we will paddle out to the deepest point of the pond



# Monitoring: Secchi reading

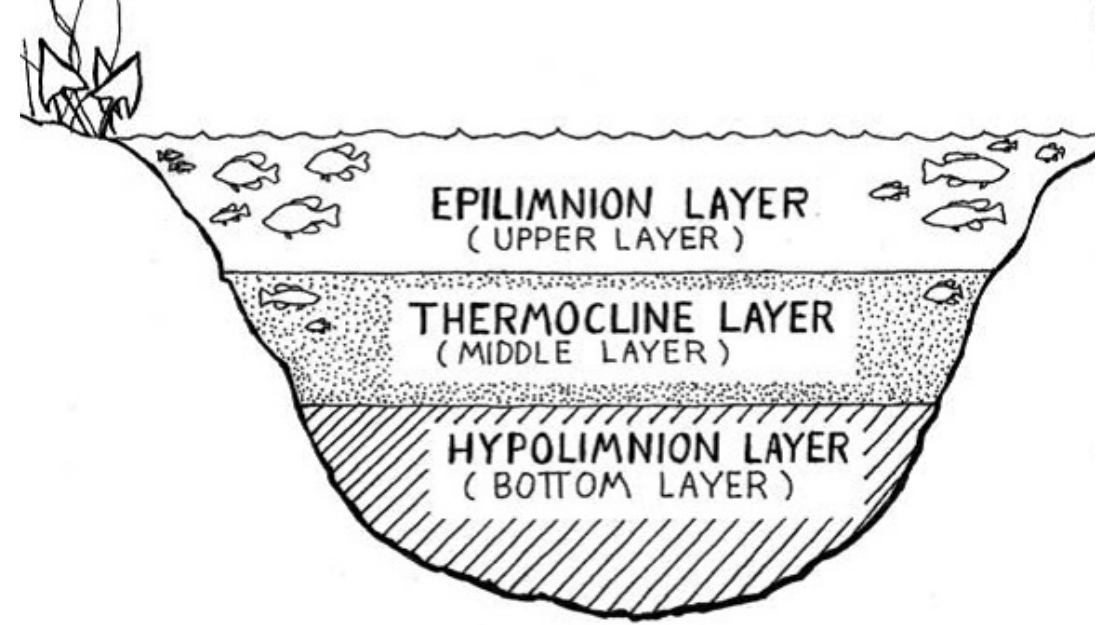
→ Measures water turbidity

---

- The disk is lowered into the water until it disappears out of sight
- The “AquaView” will help our reading stay consistent in varying light conditions
- The measurement is taken at water surface level



# 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 $\mu$ S/cm		

# Monitoring: Recording the data

Cape Cod Pond Monitoring Program Field Form Verified by \_\_\_\_\_ on \_\_\_/\_\_\_/\_\_\_

Pond and ID \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

Cloud Cover (circle one)	<del>&lt;20%</del> <del>20-50%</del> <del>&gt;50%</del> <u>100%</u> <del>light rain</del>	Fish finder (m)	<u>0MMHG</u>
Wind (circle one)	<del>calm</del> <del>slight breeze</del> <u>windy</u>	Secchi average (m)	<u>0MMHG</u>

Wave Intensity	Still	Calm	Average	Rough	Stormy
Water Odor	None	Faint	Medium	Strong	<u>Smells like:</u>
TURBIDITY	Clear	Slightly cloudy	Turbid	Opaque	Clumps
<u>Water Color</u>	Clear	Blue	Green	Brown	Other

GPS Location Lat: \_\_\_\_\_ Lon: \_\_\_\_\_

Check when GPS location is changed on In Situ app

Time 1<sup>st</sup> sample taken \_\_\_\_\_ CCS latest drop off time \_\_\_\_\_

Check when Chain of Custody sheet is filled out and photo is taken

**Lab Calibration (daily)**

T(°C) NIST: Sonde(SN: \_\_\_\_\_): \_\_\_\_\_

	Pre Cal	Post Cal	Post Field
ODO%			
ODO Gain	NA		NA
BARO (mmHg)		NA	
Check Depth Reading (m)			

Recorder \_\_\_\_\_ In Situ Operator \_\_\_\_\_

Deep Sample @ (m) \_\_\_\_\_

Secchi depth (m) Obs 1(\_\_\_\_) ): Obs 2(\_\_\_\_) ):

Did you **HIT BOTTOM** during in Situ profile? Y\*/N Secchi? Y/N

\* If Yes, EXPLAIN what you did (& if reading possibly affected by hitting, etc.)

Plant, wildlife, human activity:

Comments:

In Situ uploaded by \_\_\_\_\_ on \_\_\_/\_\_\_/\_\_\_ Entered in database by \_\_\_\_\_ on \_\_\_/\_\_\_/\_\_\_ Sent to Samantha by \_\_\_\_\_ on \_\_\_/\_\_\_/\_\_\_

Cape Cod Pond Monitoring Program Field Form Verified by \_\_\_\_\_ on \_\_\_/\_\_\_/\_\_\_

Depth (m)	Temp (C)	<del>Secchi</del> (µs/cm)	%ODO (%Sat)	ODO (mg/L)	pH (pH)	ORP (mV)	Salinity (PSU)	Depth logged (x)
Air		Strike through boxes for missing measurement. Check off meters as they are logged with In Situ instrument.						
0.5								
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
1m a.b.*								
50cm a.b.*								

\*above bottom - ~~30~~

In Situ uploaded by \_\_\_\_\_ on \_\_\_/\_\_\_/\_\_\_ Entered in database by \_\_\_\_\_ on \_\_\_/\_\_\_/\_\_\_ Sent to Samantha by \_\_\_\_\_ on \_\_\_/\_\_\_/\_\_\_



## Monitoring:

Collecting water samples at different depths using the Van Dorn sampler

---

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

# Now we are off to our second pond!

---





## **We will bring:**

- Life vests
- All monitoring gear
- A canoe and paddles

## **You will need:**

- Muck boots
- A hat/sunscreen
- Weather appropriate clothing
- Transportation between ponds
- Water/snacks

## APCC Pond Monitor Volunteer – Onboarding

- ✓ **1. Fill out Volunteer Pond Monitor application** form on our website here:  
*<https://apcc.org/our-work/science/community-science/pond-monitoring-volunteer/>*
- ✓ **2. Attend Pond Monitor Orientation ZOOM** (or watch video recording).
- 3. Sign up for Pond Monitor shifts** on our Sign-Up Genius form here:  
*<https://www.signupgenius.com/go/10C084DACA92EA4F9C43-pond>*
- 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!



Association to Preserve Cape Cod

# Pond Monitor Volunteer Sign Up

**DM** Dee Marsh

Contact

Already signed up?

[Change my sign up](#)

Please review the available slots below and click on the button to sign up. If you have any questions please reach out to Sophia Feuerhake at [sophiamfeuerhake@gmail.com](mailto:sophiamfeuerhake@gmail.com) or Lynn Francis at [lfrancis@apcc.org](mailto:lfrancis@apcc.org) - Thank you!

Share


Dates shown as mm/dd/yyyy EDT



Date	Location	Pond Monitor Volunteer Shift
06/01/2023 7:30am- 1:00pm Thursday	Dennis	<b>Pond Monitor Volunteer</b> <a href="#">1 slot available</a>

[Sign Up](#)



<b>06/05/2023</b> 7:30am-1:00pm Monday	Bourne	<b>Pond Monitor Volunteer</b> 1 slot available <a href="#">Sign Up</a>
	Harwich	<b>Pond Monitor Volunteer</b> 1 slot available <a href="#">Sign Up</a>
<b>06/06/2023</b> 7:30am-1:00pm Tuesday	Eastham	<b>Pond Monitor Volunteer</b> All slots filled Full Dee Marsh 
	Provincetown	<b>Pond Monitor Volunteer</b> 1 slot available <a href="#">Sign Up</a>
<b>06/07/2023</b> 7:30am-1:00pm Wednesday	Sandwich	<b>Pond Monitor Volunteer</b> 1 slot available <a href="#">Sign Up</a>
	Wellfleet	<b>Pond Monitor Volunteer</b> 1 slot available <a href="#">Sign Up</a>

# Thank you, Dee!

Your Sign Up is Updated!

The revisions you submitted for **Pond Monitor Volunteer Sign Up** are listed below.



## **Pond Monitor Volunteer**

**06/01/2023 (Thu.) 7:30am - 1:00pm EDT**

Location: Falmouth

My Comment: I live on swan pond

---

[View Sign Up](#)

# Contact list

Sophia Feuerhake  
*Senior Water Quality Technician*  
[sfeuerhake@apcc.org](mailto:sfeuerhake@apcc.org)  
617-412-7092

JT Percy  
*Water Quality Technician*  
[jpercy@apcc.org](mailto:jpercy@apcc.org)  
860-466-0652

Lynn Francis  
*Pond and Cyanobacteria Operations and Logistics Coordinator*  
[lfrancis@apcc.org](mailto:lfrancis@apcc.org)  
774-238-0122

Julie Hambrook Berkman, Ph.D.  
*Pond and Cyanobacteria Program Manager*  
[jhambrook@apcc.org](mailto:jhambrook@apcc.org)



Thank you so much for being here!

We are very excited to get to know you and to learn all about our beautiful Cape Cod ponds together 😊

# References

- Pond stratification image slide 11:  
<https://fw.ky.gov/Fish/Pages/Farm-Pond-Management-Water-Quality.aspx>

