



## Volunteer Lake Assessment Program Individual Lake Reports

### HAWKINS POND, CENTER HARBOR, NH

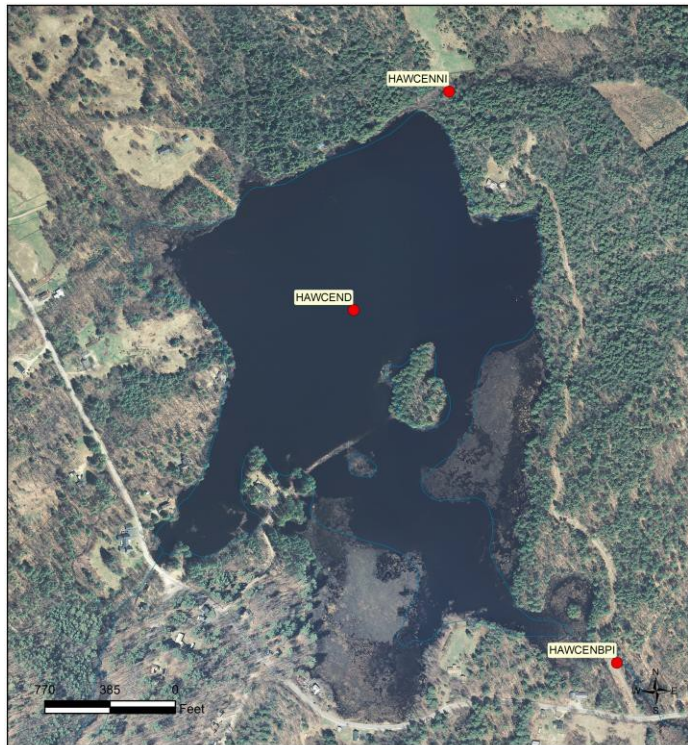
#### MORPHOMETRIC DATA

MORPHOMETRIC DATA				TROPIC CLASSIFICATION		KNOWN EXOTIC SPECIES		
Watershed Area (Ac.):	1,088	Max. Depth (m):	10	Flushing Rate (yr <sup>-1</sup> )	1.7	Year	Trophic class	
Surface Area (Ac.):	93	Mean Depth (m):	3.4	P Retention Coef:	0.63	1977	EUTROPHIC	
Shore Length (m):	2,900	Volume (m <sup>3</sup> ):	1,270,500	Elevation (ft):	601	1997	EUTROPHIC	

The Waterbody Report Card tables are generated from the DRAFT 2020 305(b) report on the status of N.H. waters, and are based on data collected from 2010-2019. Detailed waterbody assessment and report card information can be found at [NHDES' Water Quality Assessment Website](#).

Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Very Good	Sampling data is 50 percent better than the water quality standards or thresholds for this parameter.
	pH	Slightly Bad	Data periodically exceed water quality standards or thresholds for this parameter by a small margin.
	Oxygen, Dissolved	Bad	Data periodically exceed water quality standards or thresholds for this parameter by a large margin.
	Dissolved oxygen satura	Cautionary	Limited data for this parameter predicts exceedance of water quality standards or thresholds; however more data are necessary to fully assess the parameter.
	Chlorophyll-a	Very Good	Sampling data is 50 percent better than the water quality standards or thresholds for this parameter.
Primary Contact Recreation	Escherichia coli	Encouraging	Limited data for this parameter predicts water quality standards or thresholds are being met; however more data are necessary to fully assess the parameter.
	Chlorophyll-a	Good	Sampling data commonly meet water quality standards or thresholds for this parameter.

**VLAP SAMPLE STATION MAP:** This map depicts the location of routine sampling stations discussed on page two of the report.



**HAWKINS POND  
CENTER HARBOR  
VOLUNTEER LAKE ASSESSMENT PROGRAM**

STATIONID	STATION NAME
HAWCEND	DEEP SPOT
HAWCENBPI	BEAR POND INLET
HAWCENNI	NORTHEAST INLET

Source: The data layers are derived from NHDES data and are under constant revision. NHDES is not responsible for the use or interpretation of this information. Not intended for legal use. NHDES Watershed Management Bureau Date: 2/17/2021





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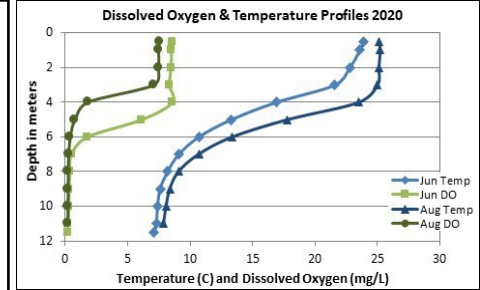
## Hawkins Pond, Center Harbor

### 2020 Data Summary

**Recommended Actions:** Great job sampling in 2020! Pond nutrient (phosphorus) levels and algal growth (chlorophyll) are generally representative of mesotrophic, or average conditions. Continue monitoring efforts to establish a baseline data set to evaluate seasonal and annual variations in water quality and track water quality trends over time. The pond experiences a large zone of anoxia (lack of dissolved oxygen) that extends into the Metalimnion during summer months and influences nutrient levels, algal growth and pH. Drought conditions in 2020 and lack of flushing of wetland systems rich in dissolved organic matter that imparts a tea, or brown, color to the water resulted in lighter water color. The lighter color conditions combined with lower levels of algal growth resulted in low turbidity levels and high water clarity. Consult with the Fish and Game Department about installing stormwater controls at the boat launch to minimize stormwater runoff and erosion to the pond. Keep up the great work!

**Observations** (Refer to Table 1 and Historical Deep Spot Data Graphics)

- ◆ **Chlorophyll-a:** Chlorophyll level was within a low range in June and increased slightly in August but remained within a low range. Average chlorophyll level decreased from 2019 and was slightly less than the state median, and much less than the threshold for eutrophic lakes. Visual inspection of historical data indicates relatively stable chlorophyll levels since monitoring began.
- ◆ **Conductivity/Chloride:** Epilimnetic (upper water layer), Metalimnetic (middle water layer) and Hypolimnetic (lower water layer) conductivity levels were slightly elevated and greater than the state median. Epilimnetic chloride levels were also slightly elevated and greater than the state median yet much less than the state chronic chloride standard. Visual inspection of historical data indicates stable epilimnetic conductivity levels since monitoring began.
- ◆ **Color:** Apparent color measured in the epilimnion indicates the water was lightly to moderately tea colored or light brown.
- ◆ **Total Phosphorus:** Epilimnetic phosphorus level was within a low range in June and increased slightly in August but remained within a low range. Average epilimnetic phosphorus level decreased slightly from 2019, was slightly less than the state median, and was much less than the threshold for eutrophic lakes. Visual inspection of historical data indicates relatively stable epilimnetic phosphorus levels since monitoring began. Metalimnetic phosphorus level was low in June and increased to a moderate level in August. Hypolimnetic phosphorus level was elevated in June and increased in August due to the release of phosphorus from bottom sediments under anoxic (no dissolved oxygen) conditions.
- ◆ **Transparency:** Transparency measured with (VS) and without (NVS) the viewscope was high (good) in June and decreased slightly in August due to wave conditions. Average NVS transparency increased (improved) from 2019 and was higher (better) than the state median. Visual inspection of historical data indicates slightly increasing (improving) NVS transparency since monitoring began.
- ◆ **Turbidity:** Epilimnetic and Metalimnetic turbidity levels fluctuated within a low range and average turbidity levels were the lowest measured since monitoring began. Hypolimnetic turbidity level was slightly elevated in June and August due to the formation and accumulation of organic compounds under anoxic conditions.
- ◆ **pH:** Epilimnetic pH level was within the desirable range 6.5-8.0 units. Metalimnetic and Hypolimnetic pH levels were slightly acidic and potentially critical to aquatic life.



Station Name	Table 1. 2020 Average Water Quality Data for HAWKINS POND - CENTER HARBOR									
	Alk. (mg/L)	Chlor-a (ug/L)	Chloride (mg/L)	Color (pcu)	Cond. (us/cm)	Total P (ug/L)	Trans. (m)		Turb. (ntu)	pH
							NVS	VS		
Epilimnion	6.9	2.70	31	35	106.1	7	5.00	5.02	0.13	7.00
Metalimnion					99.8	12			0.38	6.14
Hypolimnion					109.4	64			3.66	6.05

**NH Median Values:** Median values for specific parameters generated from historic lake monitoring data.  
**Alkalinity:** 4.5 mg/L  
**Chlorophyll-a:** 4.39 ug/L  
**Conductivity:** 42.3 uS/cm  
**Chloride:** 5 mg/L  
**Total Phosphorus:** 11 ug/L  
**Transparency:** 3.3 m  
**pH:** 6.6

**NH Water Quality Standards:** Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.  
**Chloride:** > 230 mg/L (chronic)  
**E. coli:** > 88 cts/100 mL – public beach  
**E. coli:** > 406 cts/100 mL – surface waters  
**Turbidity:** > 10 NTU above natural level  
**pH:** between 6.5-8.0 (unless naturally occurring)

### Historical Water Quality Trend Analysis

Parameter	Trend	Explanation	Parameter	Trend	Explanation
Conductivity	N/A	Ten years of data necessary for analysis.	Chlorophyll-a	N/A	Ten years of data necessary for analysis.
pH (epilimnion)	N/A	Ten years of data necessary for analysis.	Transparency	N/A	Ten years of data necessary for analysis.
			Phosphorus (epilimnion)	N/A	Ten years of data necessary for analysis.

