Volunteer Lake Assessment Program Individual Lake Reports

COBBETTS POND, WINDHAM, NH

MORPHOMETRIC DATA | **TROPHIC CLASSIFICATION** | **KNOWN EXOTIC SPECIES**

Watershed Area (Ac.):	2,048	**Max. Depth (m):**	19.2	**Flushing Rate (yr^{1})**	0.4	**Year**	**Trophic class**	Variable Milfoil
Surface Area (Ac.):	345	**Mean Depth (m):**	5.2	**P Retention Coef:**	0.8	1986	MESOTROPHIC	
Shore Length (m):	7,400	**Volume (m^3):**	7,208,000	**Elevation (ft):**	177	2003	EUTROPHIC	

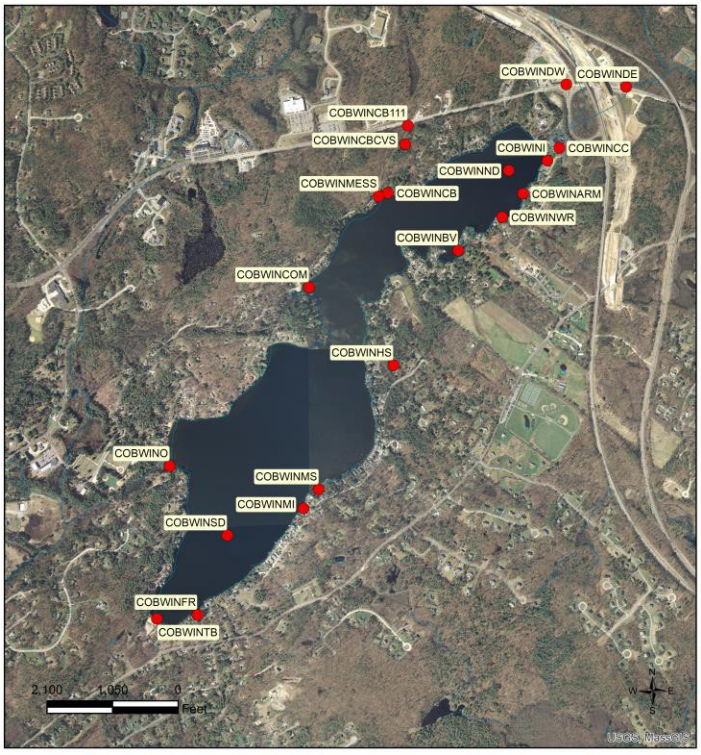
The Waterbody Report Card tables are generated from the DRAFT 2020 305(b) report on the status of N.H. waters, and are based on data collected from 2010-2019. Detailed waterbody assessment and report card information can be found at NHDES' Water Quality Assessment Website.

Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Slightly Bad	Data exceed water quality standards or thresholds for a given parameter by a small margin.
	pH	Slightly Bad	Data periodically exceed water quality standards or thresholds for a given parameter by a small margin.
	Oxygen, Dissolved	Good	Sampling data commonly meet water quality standards or thresholds for this parameter.
	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	Slightly Bad	Data exceed water quality standards or thresholds for a given parameter by a small margin.
Primary Contact Recreation	Escherichia coli	Good	Sampling data commonly meet water quality standards or thresholds for this parameter.
	Cyanobacteria hepatoto	Slightly Bad	Cyanobacteria bloom(s).
	Chlorophyll-a	Very Good	All sampling data meet water quality standards or thresholds for this parameter.

BEACH PRIMARY CONTACT ASSESSMENT STATUS

COBBETTS POND - DUNKAN BEACH	Escherichia coli	No Data	No data for this parameter.
COBBETTS POND - TOWN BEACH	Escherichia coli	Bad	Data periodically exceed water quality standards or thresholds for this parameter by a large margin.
COBBETTS POND - TOWN BEACH	Cyanobacteria	Slightly Bad	Cyanobacteria bloom(s).

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



COBBETTS POND
WINDHAM
VOLUNTEER LAKE ASSESSMENT PROGRAM

STATIONID	STATION NAME
COBWINCB	CONNIES BROOK
COBWINFR	FOSSA RD INLET
COBWINI	MAIN INLET CASTLETON BROOK
COBWINND	STATION 2
COBWINO	OUTLET
COBWINSD	STATION 1 DEEP SPOT
COBWINARM	ARMSTRONG
COBWINCOM	COMMUNITY BEACH
COBWINCB111	CONNIES BROOK AT 111
COBWINBV	BELLA VISTA
COBWINMS	MUELLER STREAM
COBWINTB	TOWN BEACH
COBWINMI	MONSON INLET
COBWINMESS	MESS
COBWINCC	CASTLETON CULVERT
COBWINDW	DINSMORE WEST
COBWINWR	WALKEY RD
COBWINHS	HORSESHOE RD
COBWINDE	DINSMORE EAST
COBWINCBCVS	CONNIES BROOK AT CVS

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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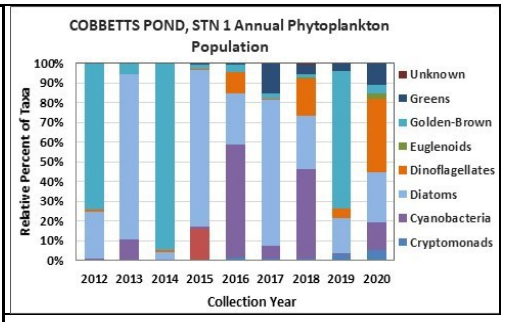
Cobbetts Pond, Stn. 1, Windham
2020 Data Summary

Recommended Actions: Great job sampling in 2020! Algal (chlorophyll) growth remained within a low range and representative of oligotrophic conditions, however phosphorus levels remain elevated and above the threshold for oligotrophic lakes. Review of phytoplankton population reveals a potential shift from dominance of Golden-Brown and Diatom algae to Cyanobacteria and Dinoflagellates. This may be influenced by the presence of Asian Clams which are filter feeders and may not filter larger sized Cyanobacteria cells as well as increases in salt concentrations that tend to favor Dinoflagellates that are common marine species. Watch for any surface scums or blooms of Cyanobacteria and report to NHDES Harmful Algal Bloom Program. Continue efforts to manage stormwater runoff, nutrient and chloride loading to the pond. Continue enhanced monitoring for conductivity and chloride to assess effectiveness of the low salt zone as well as to help pinpoint other problematic sites. Consider development of a management plan addressing chloride as a significant pollutant in the watershed as this could help identify and quantify different sources contributing to the load such as septic systems and water softeners. Keep up the great work!

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

- **Chlorophyll-a:** Chlorophyll level was low in June and remained stable in August. Average chlorophyll level decreased from 2019 and was less than the state median and the threshold for oligotrophic lakes. Historical trend analysis indicates relatively stable chlorophyll levels since monitoring began.
- **Conductivity/Chloride:** Deep spot and tributary conductivity and chloride levels remained elevated and much greater than the state medians. Deep spot chloride levels decreased slightly from 2019 and were uniform throughout the water column. Historical trend analysis indicates significantly increasing (worsening) epilimnetic (upper water layer) conducitivity levels since monitoring began and particularly since 2015. Chloride levels at Fossa Rd. Inlet approached the state chronic chloride standard in June. Historical
- **Color:** Apparent color measured in the epilimnion indicates the water was lightly tea colored, or light brown, and was darkest in June.
- **Total Phosphorus:** Epilimnetic (upper water layer) phosphorus levels were moderate in June and remained stable in August. Average epilimnetic phosphorus increased slightly from 2019 and was greater than the state median and the threshold for oligotrophic lakes. Historical trend analysis indicates significantly increasing (worsening) epilimnetic phosphorus levels since monitoring began. Metalimnetic (middle water layer) phosphorus levels fluctuated within a moderate range. Hypolimnetic (lower water layer), Fossa Rd. Inlet, Horseshoe Rd., and Town Beach phosphorus levels were elevated in June and decreased to a moderate range in August. Outlet phosphorus levels were elevated in June and August. Mueller Stream phosphorus levels were very low in June.
- **Transparency:** Transparency measured with (VS) and without (NVS) the viewscope was below average (worse) in June when water color was darker and then increased (improved) by two meters in August when water color was in the clear range. Average NVS transparency remained stable with 2019 and was approximately equal to the state median. Historical trend analysis indicates significantly decreasing (worsening) transparency since monitoring began.
- **Turbidity:** Deep spot turbidity levels were slightly higher in June but remained within a normal range for NH lakes. Fossa Rd. Inlet and Town Beach turbidity levels were greatly elevated in June and decreased to slightly elevated levels in August. Low flow conditions likely resulted in sediment and/or organic matter in samples. Horseshoe Rd., Mueller Stream and Outlet turbidity levels were within a low range.
- **pH:** Deep spot and tributary pH levels were within the desirable range 6.5-8.0 units. Historical trend analysis indicates stable epilimnetic pH levels since monitoring began.



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)

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

Station Name	Table 1. 2020 Average Water Quality Data for COBBETTS POND, STN. 1									
	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	34.8	2.62	97	35	398.0	13	3.25	3.70	0.86	7.52
Metalimnion			95		378.0	13			0.84	7.20
Hypolimnion			95		375.5	26			0.74	6.87
Fossa Rd. Inlet			166		602.0	27			7.62	7.30
Horseshoe Rd.			51		227.5	24			0.49	7.02
Mueller Stream			139		482.0	10			0.67	7.38
Outlet			89		363.5	29			1.07	6.89
Town Beach					322.0	26			4.28	7.21

Historical Water Quality Trend Analysis

Parameter	Trend	Explanation	Parameter	Trend	Explanation
Conductivity	Worsening	Data significantly increasing.	Chlorophyll-a	Stable	Trend not significant; data moderately variable.
pH (epilimnion)	Stable	Trend not significant; data show low variability.	Transparency	Worsening	Data significantly decreasing.
			Phosphorus (epilimnion)	Worsening	Data significantly increasing.