



Volunteer Lake Assessment Program Individual Lake Reports

CHAPMAN POND, SULLIVAN, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	704	Max. Depth (m):	5.2	Flushing Rate (yr ¹)	8.9
Surface Area (Ac.):	20	Mean Depth (m):	2.2	P Retention Coef:	0.48
Shore Length (m):	1,300	Volume (m ³):	177,500	Elevation (ft):	1330

TROPHIC CLASSIFICATION

Year	Trophic class
1986	MESOTROPHIC

KNOWN EXOTIC SPECIES

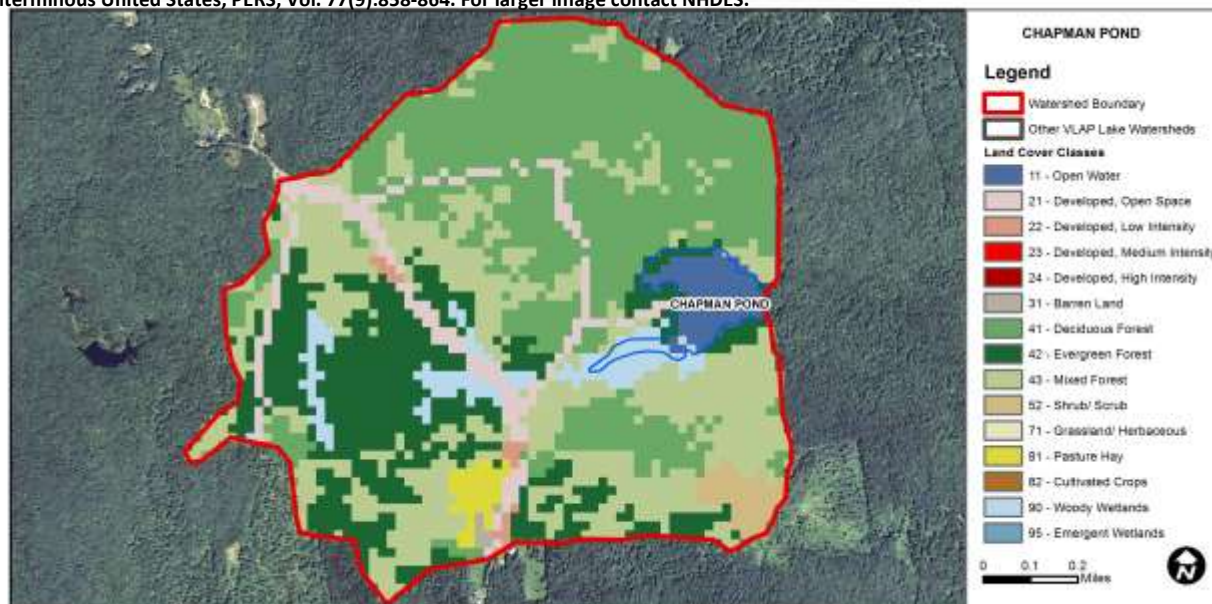
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The Waterbody Report Card tables are generated from the DRAFT 2018 305(b) report on the status of N.H. waters, and are based on data collected from 2008-2017. Detailed waterbody assessment and report card information can be found at www.des.nh.gov/organization/divisions/water/wmb/swqa/index.htm

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

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.



Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	2.9	Barren Land	0.23	Grassland/Herbaceous	0
Developed-Open Space	5.86	Deciduous Forest	34.99	Pasture Hay	1.29
Developed-Low Intensity	0.61	Evergreen Forest	19.52	Cultivated Crops	0
Developed-Medium Intensity	0	Mixed Forest	28.45	Woody Wetlands	4.29
Developed-High Intensity	0	Shrub-Scrub	1.71	Emergent Wetlands	0



VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS

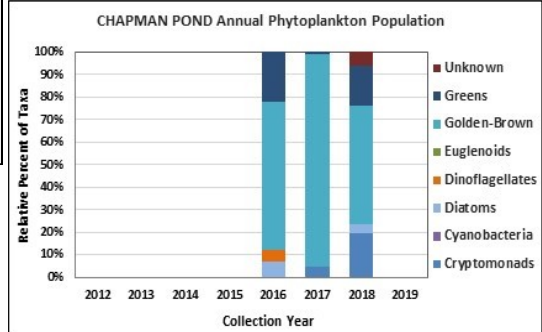
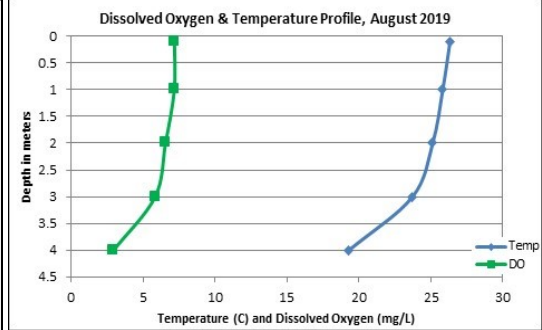
CHAPMAN POND, SULLIVAN

2019 DATA SUMMARY

RECOMMENDED ACTIONS: Pond algal growth has improved and remained less than the threshold for mesotrophic lakes since 2014, and nutrient levels have also generally remained less than the threshold since 2015 and have improved in the hypolimnion. This has likely led to the improved water clarity (transparency) in recent years, which is a positive sign. Pond pH levels have also improved indicating slow recovery from the historical impacts of acid rain in the Northeast. Stormwater runoff and sediment erosion from dirt/gravel roads and the boat launch should continually be monitored and best management practices to reduce or prevent stormwater runoff should be implemented. The Maine Dept. of Environmental Protection's "Camp Road Maintenance Manual" is a good resource. Work with the N.H. Fish and Game Department to reduce stormwater runoff from the boat launch. Keep up the great work!

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

- ◆ **CHLOROPHYLL-A:** Chlorophyll level was low in August, remained stable with 2018, and was less than the state median and the threshold for mesotrophic lakes. Historical trend analysis indicates significantly decreasing (improving) chlorophyll levels since monitoring began. We hope to see this continue!
- ◆ **CONDUCTIVITY/CHLORIDE:** Epilimnetic (upper water layer), Hypolimnetic (lower water layer), Cove, and Outlet conductivity and/or chloride levels were slightly greater than the state medians yet much less than a level of concern. However, historical trend analysis indicates significantly increasing (worsening) conductivity levels since monitoring began.
- ◆ **COLOR:** Apparent color measured in the epilimnion indicates the pond water is moderately tea colored, or brown.
- ◆ **E. COLI:** Cove E. coli levels were very low and much less than the state standards for public beaches and surface waters.
- ◆ **TOTAL PHOSPHORUS:** Epilimnetic phosphorus level was within a low range in August, decreased greatly from 2018, was much less than the state median and the threshold for mesotrophic lakes, and was the lowest measured since monitoring began. Historical trend analysis indicates relatively stable epilimnetic phosphorus levels since monitoring began. Hypolimnetic and Cove phosphorus levels were within a moderate range for NH lakes. Historical trend analysis indicates significantly decreasing (improving) hypolimnetic phosphorus levels since monitoring began. Outlet phosphorus level was low.
- ◆ **TRANSPARENCY:** Transparency measured with (VS) and without (NVS) the viewscope was high (good) in August, remained stable with 2018, and was slightly higher (better) than the state median. Historical trend analysis indicates highly variable NVS transparency since monitoring began.
- ◆ **TURBIDITY:** Epilimnetic, Hypolimnetic, Cove, and Outlet turbidity levels were within a low range in August.
- ◆ **pH:** Epilimnetic, Hypolimnetic, Cove, and Outlet pH levels were slightly acidic and less than the desirable range 6.5-8.0 units. However, historical trend analysis indicates significantly increasing (improving) epilimnetic pH levels since monitoring began. We hope to see this continue!



Station Name	Alk. mg/l	Chlor-a ug/l	Chloride mg/l	Color pcu	Cond. us/cm	E. coli mpn/100ml	Total P mg/l	Trans. m		Turb. ntu	pH
								NVS	VS		
Epilimnion	1.5	3.45	13	40	55.6		6	3.50	3.70	0.40	6.05
Hypolimnion					55.8		13			0.80	5.70
Cove					62.8	3	11			0.92	5.43
Outlet					54.4		5			0.28	5.94

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	Worsening	Data significantly increasing.	Chlorophyll-a	Improving	Data significantly decreasing.
pH (epilimnion)	Improving	Data significantly increasing.	Transparency	Stable	Trend not significant; data highly variable.
			Phosphorus (epilimnion)	Stable	Trend not significant; data moderately variable.

