



Volunteer Lake Assessment Program Individual Lake Reports

HOUSTON POND, CHESTER, NH

MORPHOMETRIC DATA

TROPHIC CLASSIFICATION

KNOWN EXOTIC SPECIES

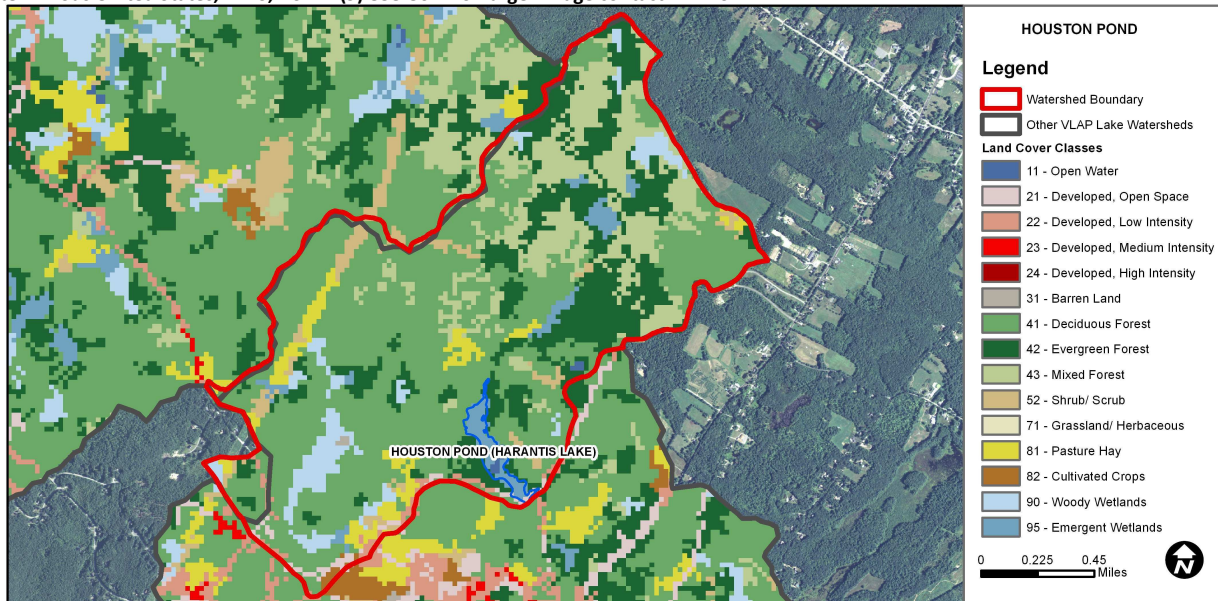
Watershed Area (Ac.):	1,453	Max. Depth (m):	2.6	Flushing Rate (yr ⁻¹):	32.5	Year	Trophic class	
Surface Area (Ac.):	20	Mean Depth (m):	1.2	P Retention Coef:	0.4	2000	EUTROPHIC	
Shore Length (m):	2,100	Volume (m ³):	94,000	Elevation (ft):	390			

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)	Good	Sampling data is better than the water quality standards or thresholds for this parameter.
	pH	Slightly Bad	Data periodically exceed water quality standards or thresholds for a given parameter by a small 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 saturation	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.
Primary Contact Recreation	Chlorophyll-a	Good	Sampling data is better than the water quality standards or thresholds for this parameter.
	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	Slightly Bad	Data periodically exceed water quality standards or thresholds for a given parameter by a small margin.

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.





VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS

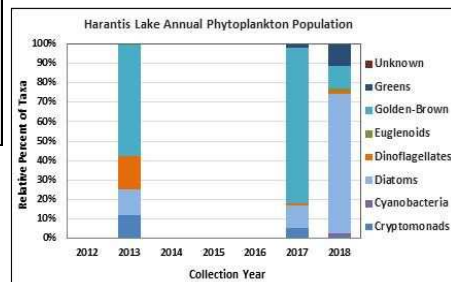
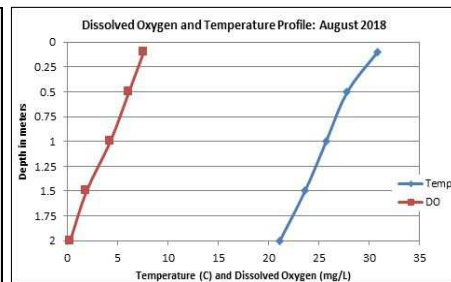
HARANTIS LAKE, CHESTER

2018 DATA SUMMARY

RECOMMENDED ACTIONS: The above average rainfall in early August resulted high water levels, decreased clarity, increased turbidity, and elevated phosphorus levels. This highlights the importance of managing stormwater runoff in the watershed, particularly in the North Inlet sub-watershed. Educate and work with watershed residents on ways to reduce stormwater runoff and erosion from their properties. DES' "NH Homeowner's Guide to Stormwater Management" is a great resource. Lake conductivity levels have increased, likely due to the application of winter road salt on roads, driveways and parking lots in the watershed, particularly within the North Cove sub-watershed. Focus efforts on reducing salt impacts in this sub-watershed. Encourage local road agents and private winter maintenance companies to obtain a NH Voluntary Salt Applicator License through UNH Technology Transfer Center's Green SnowPro Certification Program. Keep up the great work!

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

- ◆ **CHLOROPHYLL-A:** Chlorophyll level was slightly elevated in August, increased slightly from 2017, was much greater than the state median, and only slightly greater than the threshold for eutrophic lakes. Historical trend analysis indicates highly variable chlorophyll levels since monitoring began.
- ◆ **CONDUCTIVITY/CHLORIDE:** Epilimnetic (deep spot), Beaver Inlet, Outlet, and Gag Inlet conductivity and/or chloride levels were within a low to average range for NH lakes and were approximately equal to the state medians. However, historical trend analysis indicates significantly increasing (worsening) epilimnetic conductivity levels since monitoring began. North Cove conductivity and chloride levels were slightly elevated and greater than the state medians.
- ◆ **TOTAL PHOSPHORUS:** Epilimnetic phosphorus level was within an average range for the lake, increased slightly from 2017, was much greater than the state median, and was slightly greater than the threshold for eutrophic lakes. Beaver Inlet and Gag Inlet phosphorus levels were elevated following above average rainfall. North Cove phosphorus levels were extremely elevated and the turbidity was also elevated suggesting potential organic material in the sample.
- ◆ **TRANSPARENCY:** Transparency measured with (VS) and without (NVS) the viewscope was below average for the lake and the worst measured since monitoring began. This was likely due to the above average rainfall and stormwater runoff in early August. Historical trend analysis indicates highly variable transparency since monitoring began.
- ◆ **TURBIDITY:** Epilimnetic and Beaver Inlet turbidity levels were slightly elevated and above average for those stations. Outlet turbidity levels were within an average range for that station. Gag Inlet turbidity levels were low. North Cove turbidity levels were elevated.
- ◆ **pH:** Epilimnetic and tributary pH levels were slightly acidic and less than the desirable range 6.5-8.0 units. Historical trend analysis indicates relatively stable pH levels with moderate variability between years.



Station Name	Table 1. 2018 Average Water Quality Data for HARANTIS LAKE - CHESTER								
	Alk. mg/l	Chlor-a ug/l	Chloride mg/l	Cond. us/cm	Total P ug/l	Trans. m		Turb. ntu	pH
						NVS	VS		
Epilimnion	4.2	15.05	6	48.6	25	1.12	1.32	1.40	5.97
Beaver Inlet				36.0	31			1.78	6.06
Dam Outlet				55.5	17			1.16	6.25
Gag Inlet				22.7	31			0.86	5.05
North Cove			26	138.3	133			4.94	6.11

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.
Alkalinity: 4.5 mg/L
Chlorophyll-a: 4.39 mg/m³
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	Stable	Trend not significant; data highly variable.
pH (epilimnion)	Stable	Trend not significant; data moderately variable.	Transparency	Stable	Trend not significant; data highly variable.
			Phosphorus (epilimnion)	Stable	Trend not significant; data highly variable.

