Volunteer Lake Assessment Program Individual Lake Reports

SKATUTAKEE, LAKE, HARRISVILLE, NH

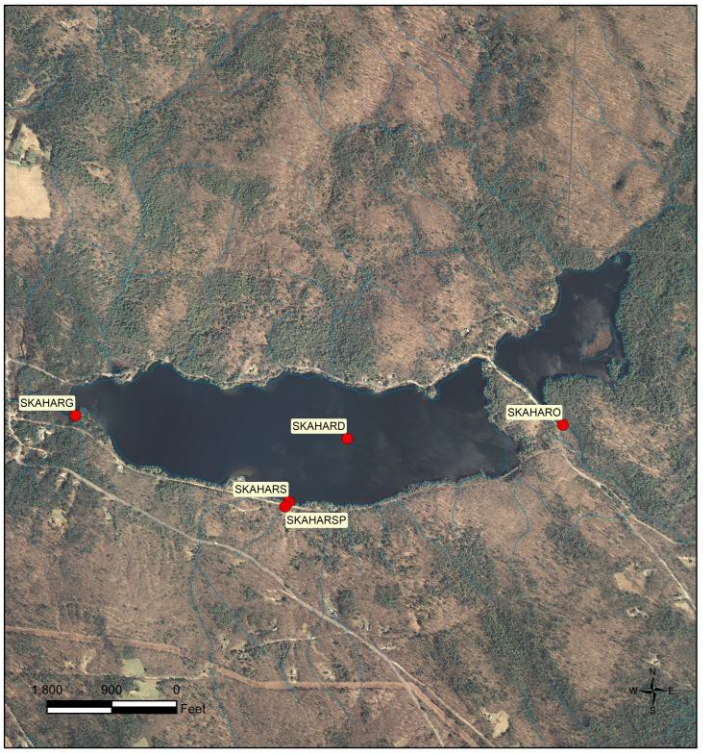
MORPHOMETRIC DATA | **TROPHIC CLASSIFICATION** | **KNOWN EXOTIC SPECIES**

Watershed Area (Ac.):	11,200	**Max. Depth (m):**	6.2	**Flushing Rate (yr^{1})**	8.3	**Year**	**Trophic class**	
Surface Area (Ac.):	261	**Mean Depth (m):**	2.9	**P Retention Coef:**	0.46	1988	MESOTROPHIC	
Shore Length (m):	6,100	**Volume (m^3):**	3,044,500	**Elevation (ft):**	1202	2006	MESOTROPHIC	

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)	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 this 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 satura	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 is better than the water quality standards or thresholds for this parameter.
Primary Contact Recreation	Escherichia coli	No Data	No data for this 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.



LAKE SKATUTAKEE
HARRISVILLE
VOLUNTEER LAKE ASSESSMENT PROGRAM

STATIONID	STATION NAME
SKAHARD	DEEP SPOT
SKAHARG	GOOSE BROOK
SKAHARO	OUTLET
SKAHARS	SPRING BROOK
SKAHARSP	SPRING

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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Skatutakee Lake, Harrisville
2020 Data Summary

Recommended Actions: Great job sampling in 2020! Lake quality is representative of mesotrophic, or average, conditions. The improving nutrient (phosphorus) levels are encouraging, however lake clarity (transparency) has significantly decreased (worsened) over time. This may be a result of the increased frequency and intensity of storm events and flushing of systems rich in dissolved organic matter that imparts a tea, or brown, color to the water. We will continue to measured the relationship between water color and clarity. Storm events have historically resulted in elevated turbidity and phosphorus levels within the lake and tributaries. Identify areas prone to stormwater runoff and prioritize implementation of stormwater management project. NHDES' "NH Homeowner's Guide to Stormwater Management" and Maine DEP's "Camp Road Maintenance Manual" area great resources. Encourage shoreline property owners to be certified LakeSmart through NHLAKES lake-friendly living program www.nhlakes.org/lakesmart/. Keep up the great work!

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

- **Chlorophyll-a:** Chlorophyll level was within a moderate range in July, increased slightly from 2019, and was slightly greater than the state median and the threshold for mesotrophic lakes. Historical trend analysis indicates stable chlorophyll levels since monitoring began.
- **Conductivity/Chloride:** Epilimnetic (upper water layer), Hypolimnetic (lower water layer), Goose Brook, and Outlet conductivity levels were low and slightly less than the state median. Epilimnetic chloride level was also low and approximately equal to the state median. Historical trend analysis indicates stable epilimnetic conductivity levels since monitoring began. Spring Brook conductivity and chloride levels were slightly elevated and greater than the state medians, however chloride levels are much less than the state chronic chloride standard.
- **Color:** Apparent color measured in the epilimnion indicates the water was lightly tea colored, or light brown.
- **Total Phosphorus:** Epilimnetic phosphorus level was within a low range in July, remained stable with 2019, was approximately equal to the state median, and was slightly less than the threshold for mesotrophic lakes. Historical trend analysis indicates significantly decreasing (improving) epilimnetic phosphorus levels since monitoring began. Hypolimnetic phosphorus level was slightly elevated and may indicate slow release of phosphorus from bottom sediments under anoxic (low dissolved oxygen) conditions. Goose Brook, Outlet and Spring Brook phosphorus levels were within a low range.
- **Transparency:** Transparency measured with (VS) and without (NVS) the viewscope was below average (worse) in July, decreased (worsened) slightly from 2019, and was less than the state median. Historical trend analysis indicates significantly decreasing (worsening) NVS transparency since monitoring began.
- **Turbidity:** Epilimnetic, Hypolimnetic, Goose Brook, Outlet, and Spring Brook turbidity levels were within low ranges for those stations.
- **pH:** Epilimnetic pH level was approximately equal to the low end of the desirable range 6.5-8.0 units, and historical trend analysis indicates stable epilmnetic pH levels since monitoring began. Hypolimnetic, Goose Brook, Outlet, and Spring Brook pH levels were slightly acidic and potentially critical to aquatic life.

Table 1. 2020 Average Water Quality Data for LAKE SKATUTAKEE - HARRISVILLE

Station Name	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	3	5.58	7	40	34.4	11	2.30	2.65	0.75	6.49
Hypolimnion					37.8	16			1.26	5.75
Goose Brook					25.0	10			0.29	5.46
Outlet					34.2	9			0.51	5.60
Spring Brook			27		100.3	9			0.21	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	Stable	Trend not significant; data show low variability.	Chlorophyll-a	Stable	Trend not significant; data show low variability.
pH (epilimnion)	Stable	Trend not significant; data show low variability.	Transparency	Worsening	Data significantly decreasing.
			Phosphorus (epilimnion)	Improving	Data significantly decreasing.