



Volunteer Lake Assessment Program Individual Lake Reports

KEZAR LAKE, SUTTON, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	6,848	Max. Depth (m):	8.2	Flushing Rate (yr¹)	8.2	Year	Trophic class	KNOWN EXOTIC SPECIES
Surface Area (Ac.):	182	Mean Depth (m):	2.7	P Retention Coef:		1984	MESOTROPHIC	
Shore Length (m):	3,400	Volume (m³):	1,975,500	Elevation (ft):	906	2003	MESOTROPHIC	

TROPIC CLASSIFICATION
KNOWN EXOTIC SPECIES

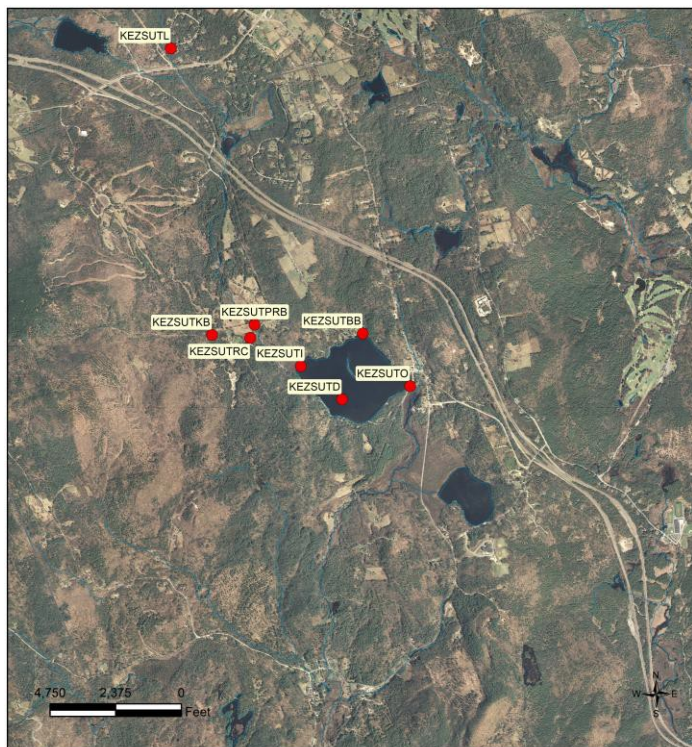
The Waterbody Report Card tables are generated from the DRAFT 2020 305(b) report on the status of N.H. waters, and are based on data collected from 2010-2019. Detailed waterbody assessment and report card information can be found at [NHDES' Water Quality Assessment Website](#).

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 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 satura	Slightly Bad	Data periodically exceed water quality standards or thresholds for a given parameter by a small margin.
	Chlorophyll-a	Good	Sampling data is 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	Very Good	All sampling data meet water quality standards or thresholds for this parameter.

BEACH PRIMARY CONTACT ASSESSMENT STATUS

KEZAR LAKE - WADLEIGH STATE PARK BEACH	Escherichia coli	Very Good	All sampling data meet water quality standards or thresholds for this parameter.
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VLAP SAMPLE STATION MAP: This map depicts the location of routine sampling stations discussed on page two of the report.



**KEZAR LAKE
SUTTON**
VOLUNTEER LAKE ASSESSMENT PROGRAM

STATIONID	STATION NAME
KEZSUTKB	KING HILL BROOK
KEZSUTD	DEEP SPOT
KEZSUTI	INLET
KEZSUTL	LYON BROOK AT TRUSSEL RIDGE
KEZSUTO	OUTLET
KEZSUTRC	ROWE CREEK
KEZSUTPRB	PENACOOK RD BRIDGE
KEZSUTBB	BIRCH BROOK

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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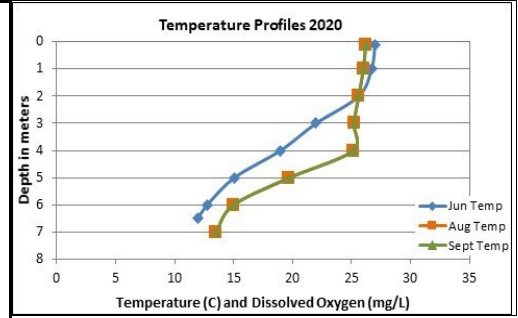
Kezar Lake, North Sutton

2020 Data Summary

Recommended Actions: Great job sampling in 2020! Lake nutrient (phosphorus) and chlorophyll levels appear to have stabilized below the thresholds for mesotrophic lakes in recent years and we hope to see this continue. The improving chlorophyll levels and water clarity (transparency) are encouraging and lake pH levels appear to be recovering from historical impacts of acid precipitation. A tropical storm in August and associated stormwater runoff following drought conditions led to a brief increase in phosphorus and turbidity levels and decreased pond clarity. This highlights the importance of managing stormwater runoff in the watershed. NHDES' "NH Homeowner's Guide to Stormwater Management" is a great resource. Encourage shoreline property owners to obtain LakeSmart certification 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 low in June, increased slightly in August, and then decreased in September. Average chlorophyll level decreased slightly from 2019 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.
- Conductivity/Chloride:** Epilimnetic (upper water layer), Hypolimnetic (lower water layer), Outlet, and Penacook Rd. Bridge conductivity and chloride levels remained elevated and greater than the state medians, however chloride levels did not exceed the state chronic chloride standard. Historical trend analysis indicates significantly increasing (worsening) epilimnetic conductivity levels since monitoring began. King Hill Brook conductivity and chloride levels were very low. Birch Brook and Lyon Bk. at Trussell conductivity and chloride levels remained greatly elevated.
- Color:** Apparent color measured in the epilimnion indicates the lake water was lightly tea colored, or light brown and remained stable from June to September.
- Total Phosphorus:** Epilimnetic phosphorus level fluctuated within a moderate range and was lowest in August. Average epilimnetic phosphorus level decreased slightly from 2019 and was approximately equal to the state median and the threshold for mesotrophic lakes. Historical trend analysis indicates relatively stable epilimnetic phosphorus levels since monitoring began. Hypolimnetic phosphorus level was slightly elevated in June and the turbidity was also slightly elevated and lab data noted low levels of organic matter in the sample. King Hill Brook, Birch Brook, Lyon Brook at Trussell, and Outlet phosphorus levels fluctuated within a moderate range and were higher following the tropical storm prior to the August sampling event. Penacook Rd. Bridge phosphorus levels were slightly elevated on each sampling event likely due to low flow conditions.
- Transparency:** Transparency measured with (VS) and without (NVS) the viewscope was high (good) in June, decreased (worsened) in August following the tropical storm, and the increased (improved) in September. Average NVS transparency decreased slightly from 2019 and was slightly less than the state median. Historical trend analysis indicates significantly increasing (improving) transparency since monitoring began.
- Turbidity:** Epilimnetic, Lyon Bk. at Trussell and Outlet turbidity levels were slightly elevated in August following the tropical storm. Hypolimnetic turbidity level was slightly elevated in June and low levels of organic matter were noted in the sample. Birch Brook and King Hill Brook turbidity levels were low. Penacook Rd. Bridge turbidity levels were elevated in June and September during low flow/stagnant conditions.
- pH:** Epilimnetic, Hypolimnetic and tributary pH levels were within the desirable range 6.5-8.0 units. Historical trend analysis indicates relatively 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 KEZAR LAKE - NORTH SUTTON									
	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	11.97	3.19	42	40	161.8	12	3.06	4.11	1.29	7.08
Hypolimnion			40		161.0	18			2.69	6.66
Birch Brook			122		378.0	16			1.21	6.91
King Hill Brook			3		28.6	13			0.80	6.59
Lyon Brook at Trussell			121		417.3	16			1.31	6.94
Outlet			45		159.7	16			1.30	7.29
Penacook Rd. Bridge			78		269.3	35			4.03	6.67

Historical Water Quality Trend Analysis

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

