



Volunteer Lake Assessment Program Individual Lake Reports

GOVERNORS LAKE, RAYMOND, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	680	Max. Depth (m):	3	Flushing Rate (yr ⁻¹)	3.4	Year	Trophic class	KNOWN EXOTIC SPECIES
Surface Area (Ac.):	52	Mean Depth (m):	1.9	P Retention Coef:	0.62	1989	MESOTROPHIC	
Shore Length (m):	2,400	Volume (m ³):	394,000	Elevation (ft):	267	2004	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)	Slightly Bad	Data exceed water quality standards or thresholds for this 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	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	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 this parameter by a small margin.
Primary Contact Recreation	Escherichia coli	Good	Sampling data commonly 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.

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



GOVERNORS LAKE RAYMOND

VOLUNTEER LAKE ASSESSMENT PROGRAM

STATIONID	STATION NAME
GOVRAID	DEEP SPOT
GOVRAI	INLET
GOVRAIO	OUTLET
GOVRAIT	TWIN BCH INLET
GOVRAIWT	WETLAND SIDE OF INLET
GOVRAIMB	MAIN BEACH
GOVRAIWB	WEST BEACH
GOVRAIYD	WELL
GOVRAIYB	EAST BEACH

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





Volunteer Lake Assessment Program Individual Lake Reports

Governors Lake, Raymond

2020 Data Summary

Recommended Actions: Great job monitoring in 2020! Lake phosphorus (nutrient) and chlorophyll levels continue to be higher than desirable for a mesotrophic lake. The elevated nutrient loading from wetland systems highlights the importance of minimizing nutrient loads from the watershed such as fertilizers, septic system impacts, stormwater runoff, and erosion. NHDES' "NH Homeowner's Guide to Stormwater Management" is a great resource. Educate boaters on lake-friendly boating practices in shallow areas. NHDES Fact Sheet WD-WMB-25 "Impacts of Motorized Craft on New Hampshire's Waterbodies" is a good resource. Work with local road agents to clean up sand/salt accumulation from roadside ditches, culverts and catch-basins in the spring and to divert stormwater runoff from entering the lake from roads. Consider converting sandy beach areas to perched beaches to reduce erosion of beach sand into the lake. Keep up the great work!

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

- ◆ **Chlorophyll-a:** Chlorophyll level was within a low range in June and then increased to a slightly elevated range in August. Average chlorophyll level decreased slightly from 2019 and was greater than the state median and the threshold for mesotrophic lakes. Historical trend analysis indicates relatively stable chlorophyll levels since monitoring began.
- ◆ **Conductivity/Chloride:** Epilimnetic (deep spot), Inlet, Outlet, and Twin Bch. Inlet conductivity levels were slightly elevated and greater than the state median. Epilimnetic chloride levels were also slightly elevated and greater than the state median. Historical trend analysis indicates significantly increasing (worsening) epilimnetic conductivity levels since monitoring began. Inlet and Twin Bch. Inlet chloride levels were within a low range for NH lakes in March and then increased to slightly elevated level in June and August indicating groundwater influence during drought conditions. Main Beach chloride level was slightly elevated in March and was higher than the March samples collected at the inlets indicating impacts from snow melt and spring runoff.
- ◆ **Color:** Apparent color measured in the epilimnion indicates the water was highly tea colored, or dark brown, in June and then lightened to within a moderately tea colored range in August.
- ◆ **Total Phosphorus:** Epilimnetic and Outlet phosphorus levels were moderate in June and increased to slightly elevated levels in August. Average epilimnetic phosphorus level increased slightly from 2019 and was greater than the state median and the threshold for mesotrophic lakes. Historical trend analysis indicates relatively stable epilimnetic phosphorus levels since monitoring began. Inlet phosphorus levels were greatly elevated in June and August and field data note low to stagnant flow conditions which could contribute to elevated nutrient levels. Twin Bch. Inlet phosphorus level was elevated in June and stagnant flow conditions were also noted.
- ◆ **Transparency:** Transparency measured without the viewscope (NVS) was within an average range for the lake in June and decreased slightly in August. Average NVS transparency increased (improved) slightly from 2019 and historical trend analysis indicates relatively stable NVS transparency since monitoring began. Viewscope (VS) transparency was much higher (better) than NVS transparency in June but decreased in August likely due to elevated algal growth.
- ◆ **Turbidity:** Epilimnetic and Outlet turbidity levels were low in June and slightly elevated in August when algal growth was elevated. Inlet turbidity levels were slightly elevated in June and elevated in August when lab data noted highly colored water with organic matter present. Twin Bch. Inlet turbidity level was slightly elevated in June and lab data noted lightly colored water.
- ◆ **pH:** Epilimnetic and Outlet pH levels were within the desirable range 6.5-8.0 units. Historical trend analysis indicates significantly increasing (improving) epilimnetic pH levels since monitoring began. Inlet and Twin Bch. Inlet pH levels were slightly acidic and potentially critical to aquatic life.

Station Name	Table 1. 2020 Average Water Quality Data for GOVERNORS LAKE - RAYMOND									
	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	9.6	6.20	36	85	122.6	20	1.74	2.10	1.26	6.95
Inlet			24		116.4	93			9.02	5.90
Main Beach			40							
Outlet					128.0	20			1.48	6.76
Twin Bch. Inlet			22		108.1	51			1.56	5.95

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	Stable	Trend not significant; data show low variability.
pH (epilimnion)	Improving	Data significantly increasing.	Transparency	Stable	Trend not significant; data moderately variable.
			Phosphorus (epilimnion)	Stable	Trend not significant; data show low variability.

