



Volunteer Lake Assessment Program Individual Lake Reports

ARMINGTON LAKE, PIERMONT, NH

MORPHOMETRIC DATA

TROPHIC CLASSIFICATION

KNOWN EXOTIC SPECIES

Watershed Area (Ac.):	1,368	Max. Depth (m):	9.7	Flushing Rate (yr ¹):	1.7	Year:	Trophic class:	
Surface Area (Ac.):	142	Mean Depth (m):	3.7	P Retention Coef:	0.62	2005	OLIGOTROPHIC	
Shore Length (m):	4,500	Volume (m ³):	2,125,500	Elevation (ft):	1334	2007	OLIGOTROPHIC	

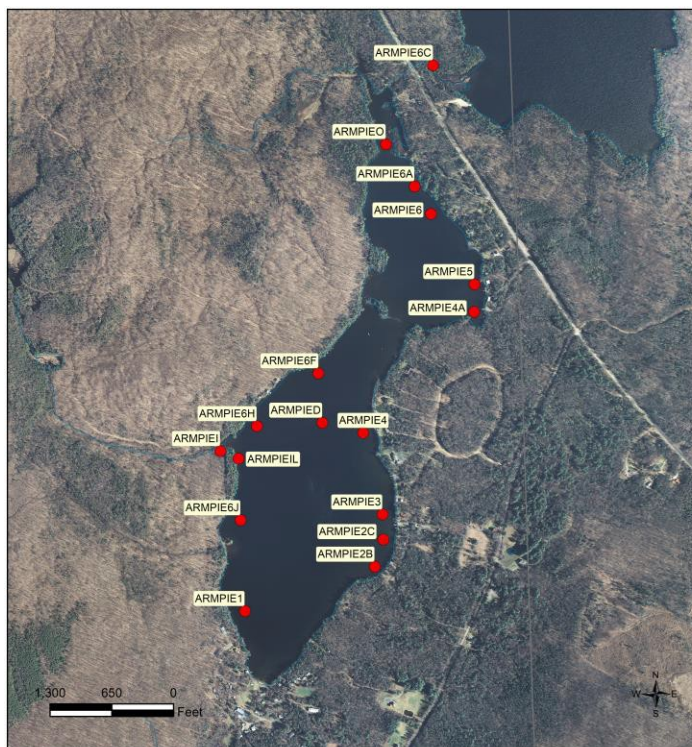
The Waterbody Report Card tables are generated from the DRAFT 2020 305(b) report on the status of N.H. waters, and are based on data collected from 2010-2019. Detailed waterbody assessment and report card information can be found at [NHDES' Water Quality Assessment Website](#).

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	Very Good	Sampling data is 50 percent better than the water quality standards or thresholds for this 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.

BEACH PRIMARY CONTACT ASSESSMENT STATUS

LAKE ARMINGTON - CAMP WALT WHITMAN BEACH	Escherichia coli	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.



**ARMINGTON LAKE
PIERMONT
VOLUNTEER LAKE ASSESSMENT PROGRAM**

STATIONID	STATION NAME
ARMPIED	DEEP SPOT
ARMPIEI	INLET
ARMPIEO	OUTLET
ARMPIE1	1
ARMPIE3	3
ARMPIE4	4
ARMPIE5	5
ARMPIE6	6
ARMPIE2B	SITE 2B
ARMPIE2C	SITE 2C
ARMPIE4A	SITE 4A
ARMPIE6A	SITE 6A
ARMPIE6C	SITE 6C
ARMPIE6F	SITE 6F
ARMPIE6H	SITE 6H
ARMPIE6J	SITE 6J
ARMPIEL	INLET LEFT

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

Armington Lake, Piermont

2020 Data Summary

Recommended Actions: Great job sampling in 2020! The improving water quality trends are a positive sign and we hope to see this continue. Drought conditions and lack of stormwater runoff helped to maintain low nutrient (phosphorus) levels and algal (chlorophyll) growth. However, lake transparency or clarity, has significantly decreased measured with and without the viewscope. The worsening clarity may be due to an increase in dissolved organic matter that imparts a “tea” or brown color to the water. Review of current and historical color data indicates water color has transitioned from clear conditions to lightly tea colored, light brown, conditions in recent years. Continue apparent color monitoring to better understand the relationship between lake color, turbidity and clarity. Keep up the great work!

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

- ◆ **Chlorophyll-a:** Chlorophyll level was low in June and remained stable in August. Average chlorophyll level decreased from 2019 and was much less than the state median and the threshold for oligotrophic lakes. Historical trend analysis indicates significantly decreasing (improving) chlorophyll levels since monitoring began.
- ◆ **Conductivity/Chloride:** Epilimnetic (upper water layer) and Hypolimnetic (lower water layer) conductivity levels were low, remained stable from June to August, and were less than the state median. Epilimnetic chloride levels were also low and less than the state median. Historical trend analysis indicates stable epilimnetic conductivity levels since monitoring began.
- ◆ **Color:** Apparent color measured in the epilimnion indicates the water was lightly tea colored, or light brown, in June and then decreased to within a clear range in August.
- ◆ **Total Phosphorus:** Epilimnetic phosphorus level was low in June and decreased in August. Average epilimnetic phosphorus level decreased slightly from 2019 and was much less than the state median and the threshold for oligotrophic lakes. Historical trend analysis indicates significantly decreasing (improving) epilimnetic phosphorus levels since monitoring began. We hope to see this continue! Hypolimnetic phosphorus levels were stable and low from June to August.
- ◆ **Transparency:** Transparency measured without the viewscope (NVS) was high (good) in June and increased (improved) in August likely due to water color becoming lighter. Average NVS transparency increased (improved) from 2019 and was higher (better) than the state median. However, historical trend analysis indicates significantly decreasing (worsening) transparency since monitoring began. Transparency measured with the viewscope (VS) was much higher (better) than NVS transparency and likely a better measure of actual conditions, however historical trend analysis also indicates significantly decreasing VS transparency since 2006.
- ◆ **Turbidity:** Epilimnetic and Hypolimnetic turbidity levels were stable and low from June to August.
- ◆ **pH:** Epilimnetic pH level was within the desirable range 6.5-8.0 units. Historical trend analysis indicates relatively stable epilimnetic pH levels since monitoring began. Hypolimnetic pH level was slightly acidic and less than desirable.

Station Name	Table 1. 2020 Average Water Quality Data for ARMINGTON LAKE - PIERMONT									
	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	4.1	1.10	3	15	23.0	4	5.32	6.32	0.33	6.79
Hypolimnion					20.6	6			0.42	6.17

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	Improving	Data significantly decreasing.
pH (epilimnion)	Stable	Trend not significant; data moderately variability.	Transparency	Worsening	Data significantly decreasing.
			Phosphorus (epilimnion)	Improving	Data significantly decreasing.

