MORPHOMETRIC DATA

TROPHIC CLASSIFICATION   **KNOWN EXOTIC SPECIES**

Watershed Area (Ac.):	16,000	Max. Depth (m):	7	Flushing Rate (yr¹)	16.2	Year	Trophic class	
Surface Area (Ac.):	299	Mean Depth (m):	1.8	P Retention Coef:	0.43	1986	MESOTROPHIC	
Shore Length (m):	8,400	Volume (m³):	2,229,500	Elevation (ft):	1445	2004	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	Bad	Data periodically exceed water quality standards or thresholds for a given parameter by a large 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	Good	Sampling data is 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.

VLAP SAMPLE STATION MAP: This map depicts the location of routine sampling stations discussed on page two of the report.
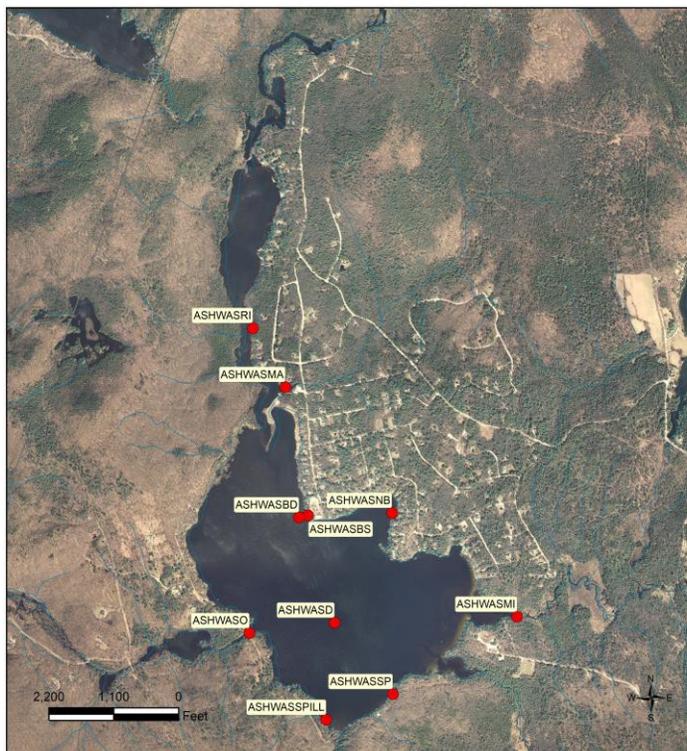
ASHUELOT POND
WASHINGTON
VOLUNTEER LAKE ASSESSMENT PROGRAM

STATIONID	STATION NAME
ASHWASNB	NB CROWLEY COVE
ASHWASD	DEEP SPOT
ASHWASMA	MARINA INLET
ASHWASMI	MILLEN INLET
ASHWASO	OUTLET
ASHWASRI	RIVER INLET
ASHWASBS	LAE BEACH SHALLOW
ASHWASBD	LAE BEACH DEEP
ASHWASSP	SOUTH POINT
ASHWASSPILL	2ND SPILLWAY

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

Recommended Actions: Great job sampling in 2020! Pond quality is generally representative of mesotrophic, or average, conditions. The improving phosphorus and pH levels are encouraging and we hope to see that continue. Low water levels combined with increased boating activity, wind and wave action could have contributed to erosion of shoreline and bottom sediments which resulted in higher turbidity and lower clarity (transparency) in 2020. Educate lake residents on proper boating practices, particularly near the shoreline as boat wakes can erode and de-stabilize the shoreline and lake bottom. Keep an eye on pond conductivity levels. After a period a decline and improving conditions, conductivity levels have remained within a higher range since 2015. Encourage local road agents to obtain Voluntary NH Salt Applicator license through UNH Technology Transfer Center's Green SnowPro certification program. Evaluate the use of winter de-icing materials and dust suppressants within the watershed and their relation to conductivity levels. Keep up the great work!

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

⬧ **Chlorophyll-a:** Chlorophyll was not measured in July. August chlorophyll level was within a low range, remained stable with 2019, and was approximately equal to the state median and the threshold for mesotrophic lakes. Historical trend analysis indicates relatively stable chlorophyll levels since monitoring began.

⬧ **Conductivity/Chloride:** Epilimnetic (upper water layer), Hypolimnetic (lower water layer), Millen Inlet, and River Inlet conductivity and/or chloride levels were within a low range and were less than or approximately equal to the state medians. Historical trend analysis indicates relatively stable epilimnetic conductivity levels since monitoring began. Marina Inlet conductivity levels were slightly elevated in July during stagnant conditions and then decreased to a low range in August.

⬧ **Color:** Apparent color measured in the epilimnion indicates the water was moderately tea colored, or brown, and remained stable from July to August.

⬧ **Total Phosphorus:** Epilimnetic phosphorus level was low in June and remained stable in August. Average epilimnetic phosphorus level remained stable with 2019 and was slightly less than the state median and the threshold for mesotrophic lakes. Historical trend analysis indicates significantly decreasing (improving) epilimnetic phosphorus levels sine monitoring began. Hypolimnetic phosphorus level was low in July and increased to a slightly elevated level in August and lab data noted organic matter in the sample. Marina Inlet phosphorus level was elevated in July during stagnant conditions and lab data note highly colored water with high levels of organic matter. Millen and River Inlet phosphorus levels fluctuated within a low to moderate range.

⬧ **Transparency:** Transparency measured without the viewscope (NVS) was low (below average) in July and then increased (improved) slightly in August but remained below average (worse) for the pond. Average transparency decreased (worsened) from 2019 and was lower than the state median. Field data noted small waves on each sampling event, low water levels and higher turbidity levels throughout the pond may have contributed to the decreased in water clarity. Historical trend analysis indicates relatively stable transparency since monitoring began.

⬧ **Turbidity:** Epilimnetic, Hypolimnetic, Millen Inlet, and River Inlet turbidity levels fluctuated within a slightly elevated range from July to August. Marina Inlet turbidity level was elevated in July and lab data noted high levels of organic matter in the sample.

⬧ **pH:** Epilimnetic, Hypolimnetic, Marina Inlet, Millen Inlet, and River Inlet pH levels were slightly less than desirable range 6.5-8.0 units. Historical trend analysis indicates significantly increasing (improving) epilimnetic pH levels since monitoring began. We hope to see this continue!

Station Name	Table 1. 2020 Average Water Quality Data for ASHUELOT POND - WASHINGTON								
	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		
Epilimnion	1.4	4.79	6	55	29.9	10	2.20	1.56	6.21
Hypolimnion					28.7	12		1.60	6.14
Marina Inlet					48.8	26		3.06	6.14
Millen Inlet					28.0	10		1.28	6.24
River Inlet			5		32.8	13		1.54	6.20

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

Historical Trend Epilimnetic Conductivty and pH

Historical Chlorophyll-a, Epilimnetic Phosphorus & Transparency Data