



2023 VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS

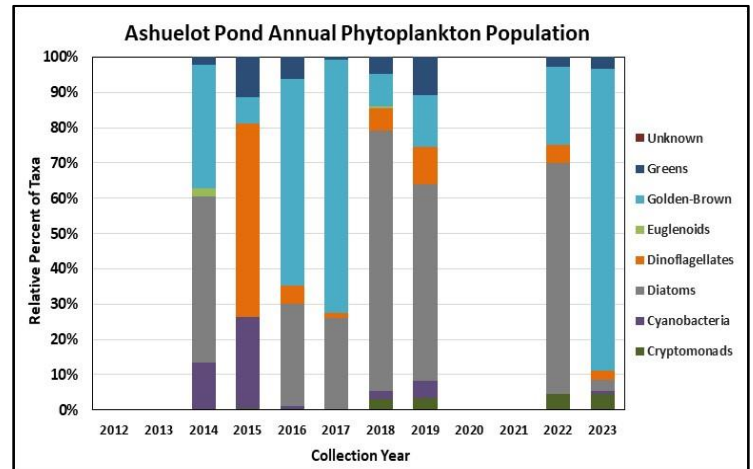
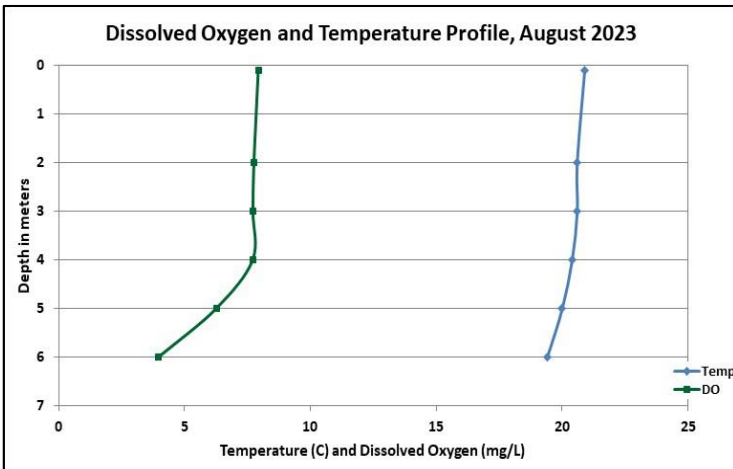
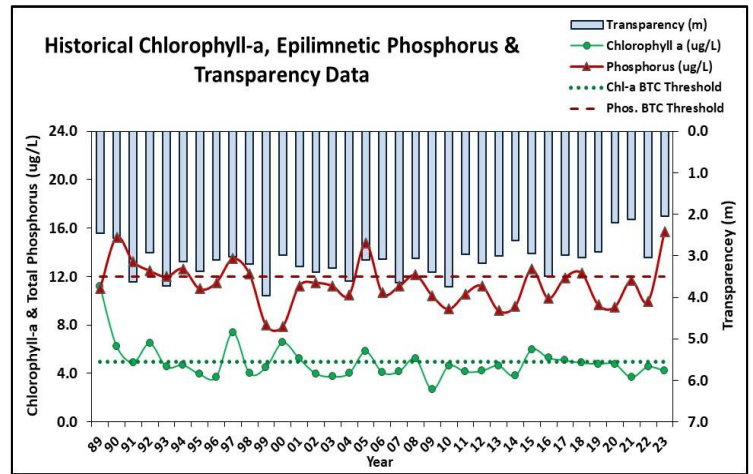
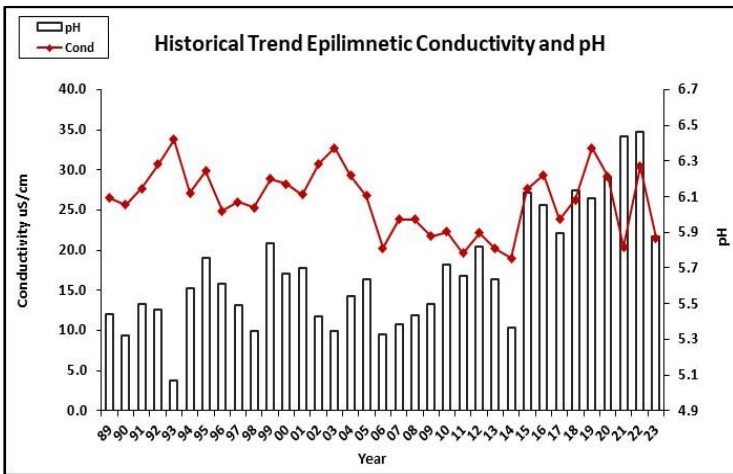
ASHUELOT POND, WASHINGTON

Recommended Actions: Great job sampling in 2023 and training new volunteers! Pond quality is generally representative of mesotrophic, or average, conditions. However, excessive summer rainfall and resulting stormwater runoff and high water levels resulted in elevated lake and tributary phosphorus levels, darker water color, and poor water clarity (transparency). This highlights the importance of minimizing nutrient loading within the watershed. Regular pumping and maintenance of [septic systems](#), [proper lawn care](#), and [stabilizing shorelines](#) are all ways to minimize sediment and nutrient loading to the pond. With the increased intensity of storm events, efforts to manage stormwater are more important than ever. Identify areas of stormwater runoff and visit NHDES' Soak Up the Rain [website](#) for ideas on how to infiltrate stormwater into the ground. The improving epilimnetic pH levels are a positive sign and indicative of the recovery of NH's surface waters from historical acid precipitation. Keep up the great work!

HISTORICAL WATER QUALITY TREND ANALYSIS

PARAMETER	TREND	PARAMETER	TREND
Conductivity	Stable	Chlorophyll-a	Improving
pH (epilimnion)	Improving	Transparency	Worsening
Phosphorus (hypolimnion)	Stable	Phosphorus (epilimnion)	Stable

HISTORICAL WATER QUALITY GRAPHICS





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

- ◆ **CHLOROPHYLL-A:** Chlorophyll level was slightly elevated in June, decreased to a low level in July, and increased slightly in August. Average chlorophyll level decreased slightly from 2022 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:** Deep spot and tributary conductivity levels fluctuated within a low range and were less than the state median. Average epilimnetic (upper water level) chloride level was also low and less than the state median. Historical trend analysis indicates relatively stable epilimnetic conductivity levels since monitoring began.
- ◆ **COLOR:** Apparent color measured in the epilimnion indicates the water was moderately tea colored in June and darkened to within a highly tea colored, or dark brown, range by August.
- ◆ **E. COLI:** Beach E. coli levels were low and much less than the state standard for public beaches on each sampling event.
- ◆ **TOTAL PHOSPHORUS:** Epilimnetic and Hypolimnetic phosphorus levels were elevated in June, increased in July, and decreased to a low level in August. Average epilimnetic phosphorus level increased sharply from 2022, was greater than the state median and the threshold for mesotrophic lakes, and was the highest measured since monitoring began. All Inlet phosphorus levels were elevated in June and decreased gradually as the summer progressed.
- ◆ **TRANSPARENCY:** Transparency measured with (VS) and without (NVS) the viewscope was below average (worse) in June likely due to wave conditions and elevated algal growth, decreased (worsened) in July due to significant rainfall, and increased (improved) in August but remained below average. Average NVS transparency decreased from 2022, was lower than the state median, and was the lowest (worst) measured since monitoring began. VS transparency was higher (better) than NVS transparency but also the lowest measured since monitoring began.
- ◆ **TURBIDITY:** Epilimnetic and Hypolimnetic turbidity levels were elevated in June following a storm event and when algal growth was elevated. Epilimnetic turbidity levels decreased through August, however Hypolimnetic turbidity level increased in July likely due to significant summer rainfall. All Inlet turbidity levels were slightly elevated in June and decreased as the summer progressed.
- ◆ **pH:** Deep spot and tributary pH levels were acidic and potentially critical to aquatic life. However, historical trend analysis indicates significantly increasing (improving) epilimnetic pH levels since monitoring began.

Table 1. 2023 Average Water Quality Data for ASHUELOT POND - WASHINGTON

Station Name	Alk. (mg/L)	Chlor-a (ug/L)	Chloride (mg/L)	Color (pcu)	Cond. (us/cm)	E. coli (mpn/100mL)	Total P (ug/L)	Trans. (m)		Turb. (ntu)	pH
								NVS	VS		
Epilimnion	1.2	4.23	2	79	21.5	-	16	2.04	2.62	1.17	5.87
Hypolimnion	-	-	-	-	22.2	-	15	-	-	1.59	5.71
Lae Beach Shallow	-	-	-	-	-	12	-	-	-	-	-
Marina Inlet	-	-	-	-	24.1	-	13	-	-	0.89	5.70
Millen Inlet	-	-	-	-	22.5	-	14	-	-	1.16	5.66
Outlet	-	-	-	-	21.3	-	12	-	-	1.08	5.75
River Inlet	-	-	-	-	23.1	-	12	-	-	0.90	5.70

NH Median Values

Median values 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. Water quality violation if thresholds exceeded.

Chloride: > 230 mg/L (chronic) **Turbidity:** > 10 NTU above natural
E. coli: > 88 cts/100 mL (beach)
E. coli: > 406 cts/100 mL (surface waters)
pH: between 6.5-8.0 (unless naturally occurring)