



WELCOME!



What is Going On???

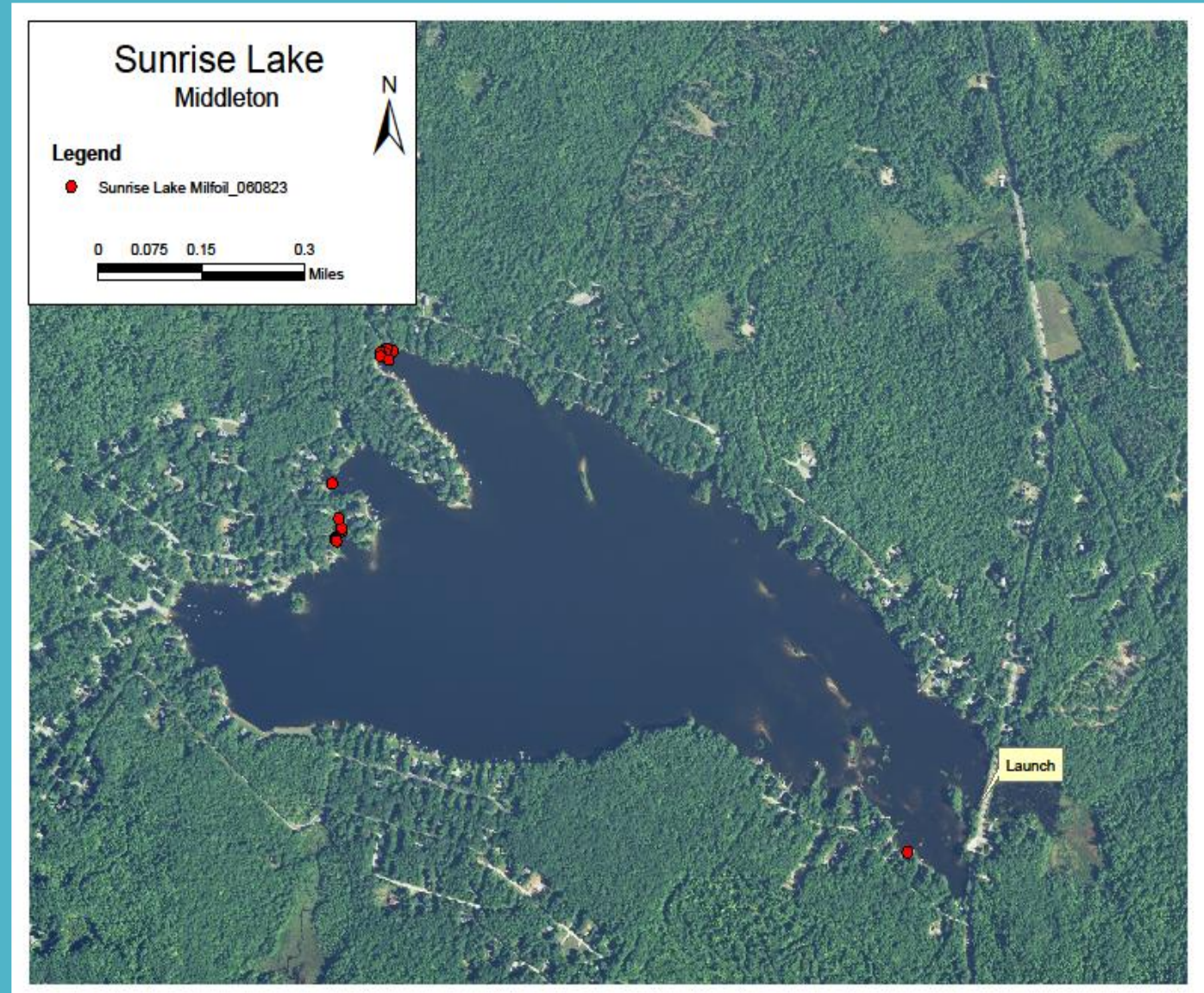
Public Awareness Meeting, July 29, 2023

Agenda

- **Introductions - John Mullen**
- **Invasive Species Update - Randy Barnes**
- **VLAP-Water Testing Update - John Mullen**
- **Featured Speaker – Nisa Marks**, Watershed Coordinator, Rivers and Lakes Management and Protection Programs, NH DES
- **Q & A**

Invasive Species - Milfoil

- NH Department of Environmental Services approved grants in 2023 for 50% of the cost for exotic aquatic plant control
- Sunrise Lake was approved for 6 days of diver plant removal and disposal. The map on the right shows the results of the Biologists survey for milfoil in June 2023.
- Total approved cost for the 6 days is \$2,538
- Town of Middleton is responsible for \$1,269
- 2022 costs to the town was \$1,162.50, which was covered by the Milfoil Capital Reserve fund and local donations. Thus, no taxpayer funds have been utilized in 2020, 2021, 2022 and now 2023.



Invasive Species - Milfoil

- TSE Dive Services was awarded the contract by NH DES to conduct hand harvesting
- First dive July 11 yielded 22.3 gallons. The session was cut short by an electrical storm forcing the divers off the water.
- Second dive on July 23, the divers extracted 29 gallons. All of the target points were addressed and the team found MANY new plant colonies.
- Planning for the 3rd dive is scheduled for July 29, weather permitting.
- Remaining dives days to be scheduled for August/September.
- Last year, we saw an increase from previous years harvest since the herbicide treatment in 2019. The total in 2022 was 61 gallons.
- All residents are encouraged to be diligent in monitoring the invasive plant and to report any findings or questions either to the Middleton Conservations Commission's Exotic Aquatic Species Coordinator or NH DES.



Volunteer Lake Assessment Program - Water Testing

- Water Testing Since 1997
- Ten test sites are visited once a year.
- Results Published Early the Following Year.
- Sunrise Lake's Water Quality has diminished.
- 2018 NH Watershed Report Card Grade:

POOR!

SUNRISE LAKE MIDDLETON

VOLUNTEER LAKE ASSESSMENT PROGRAM



STATIONID	STATION NAME
SUNMIDBC	BARTLETTS COVE
SUNMIDD	DEEP SPOT
SUNMIDH	HAMPSHIRE BROOK
SUNMIDHS	HAMPSHIRE SHORES
SUNMIDJB	JOHNS BEACH
SUNMIDMB	MAIN BEACH
SUNMIDNB	NICOLA BEACH
SUNMIDT	TANGLEWOOD BROOK
SUNMIDNB1	NICOLA BEACH 1
SUNMIDHSBL	HAMPSHIRE SHORES BOAT LAUNCH
SUNMIDTB	TOWN BEACH
SUNMIDPC	PINKHAM COVE

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: 3/28/2022



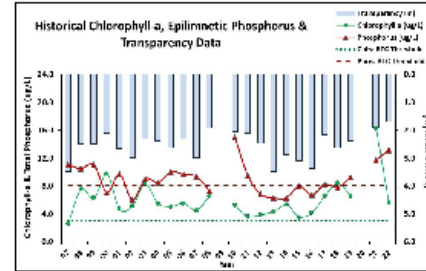
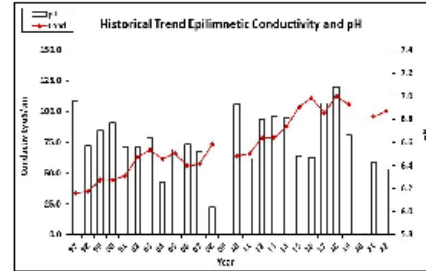


VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS SUNRISE LAKE, MIDDLETON 2022 DATA SUMMARY

RECOMMENDED ACTIONS: Great job sampling in 2022! Lake quality is generally representative of oligotrophic, or high quality, conditions, however chlorophyll levels tend to fluctuate above the threshold for oligotrophic lakes. Phosphorus levels remained within an elevated range for the lake in 2022. The increased frequency and intensity of storm events combined with increasing occurrence of drought conditions can result in transport and retention of nutrients in the lake. This highlights the importance of managing phosphorus (nutrient) loads within the watershed through [stormwater management](#), [septic system management](#), [fertilizer use](#), [shoreline stabilization](#), [erosion controls at beach areas](#), and [education of property owners](#). Great job developing a watershed management plan to identify and quantify nutrient sources and loads and make recommendations on ways to reduce loading. Increase sampling frequency to once per month, typically June, July and August, to better assess seasonal and annual variations in water quality. Keep up the great work!

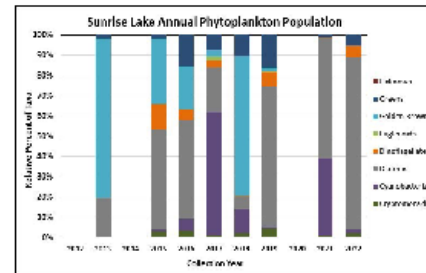
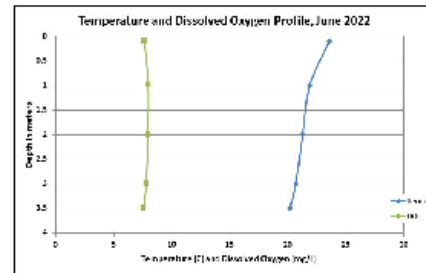
HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Parameter	Trend
Conductivity	Worsening	Chlorophyll-a	Stable
pH (epilimnion)	Stable	Transparency	Stable
		Phosphorus (epilimnion)	Stable



DISSOLVED OXYGEN AND PHYTOPLANKTON

(Note: Information may not be collected annually)



Ten Year Phosphorus Load Comparison

Station Name	TP 2013 (ug/L)	TP 2014 (ug/L)	TP 2015 (ug/L)	TP 2016 (ug/L)	TP 2017 (ug/L)	TP 2018 (ug/L)	TP 2019 (ug/L)	TP 2020 (ug/L)	TP 2021 (ug/L)	TP 2022 (ug/L)	TP 2023 (ug/L) ¹	TREND	TP 2023 (ug/L) ²	TREND
Bartletts Cove- Lakeshore Drive	5.00		8.00	12.00			9.00		9.00	13.00	11.30	>		
Epilimnion Deep Spot-Off Dam 12-14'	6.00	6.00	8.00	7.00	8.00	8.00			12.00	13.00	12.60	>		
Hypolimnion Deep Spot-Off Dam 12-14'	8.00	7.00	8.00	8.00	9.00	9.00								
Hampshire Brook- Pinkham Road			6.00						10.00	13.00	8.50	>		
Hampshire Shores Boat Launch	6.00		7.00											
Hampshire Shores Beach-Shore Drive														
Main Beach-LLA Lakeshore Drive										11.00	12.30	<		
Pinkham Cove- Pinkham Road		7.00	6.00		13.00	7.00	9.00		10.00	15.00	12.70	>		
Tanglewood Brook- Lakeshore Drive		18.00	8.00	9.00	15.00	7.00	8.00			22.00	16.40	>		
John's Beach-Rte. 153	9.00													
Town Beach-Rte. 153	12.00			33.00							12.20			

¹Jun 6th ²Aug 17th

Cyanobacteria Blooms on Sunrise Lake



Cyano Bloom August 2014



Cyano Bloom August 2014



Cyano Bloom August 2019



Cyan Bloom June 2023



Cyano Bloom July 2023



Cyano Bloom July 2023

THANK YOU



**Please Welcome Nisa Marks, Watershed
Coordinator, Rivers and Lakes Management and
Protection Program, NH DES**