

WELCOME!









What is Going On?? Public Awareness Meeting, July 29, 2023

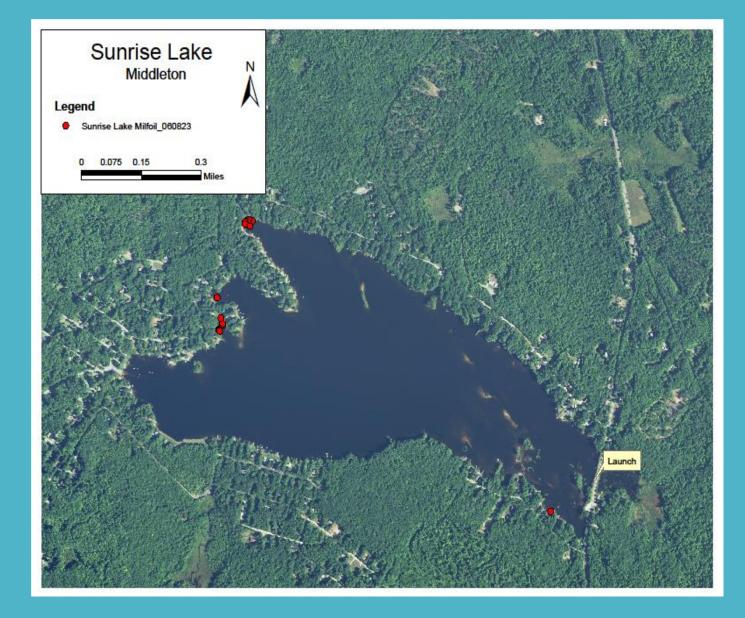
JULY 29. 2023, WHAT IS GOING ON

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.



<u>Volunteer Lake Assessment</u> <u>Program - Water Testing</u>

- > 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:





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 BO	AT 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: 3/29/2022



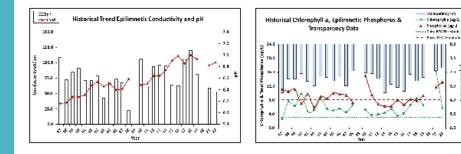
NHDES VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS SUNRISE LAKE, MIDDLETON 2022 DATA SUMMARY

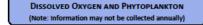
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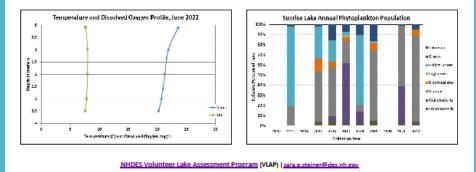
RECOMMENDED ACTIONS: Great job sampling in 2022! Lake quality is generally representative of oligotrophic, or high quality, conditions, however chlorophyll levels tend to fluctuate above the threshold for oligotrophic lakes. Phosphorus levels remained within an elevated range for the lake in 2022. The increased frequency and intensity of storm events combined with increasing occurrence of drought conditions can result in transport and retainment of nutrients in the lake. This highlights the importance of managing phosphorus (nutrient) loads within the watershed through <u>stormwater management</u>, <u>septic system management</u>, <u>fertilizer use</u>, <u>shoreline stabilization, erosion controls at beach areas</u>, and <u>education of property owners</u>. 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







7/31/2023 JULY 29. 2023, WHAT IS GOING ON

VLAP Testing Results June 7, 2023

Image: And the section of th	Station ID	Station Name	Zone	Depth	Startdate	Activity ID	Color	CI	Chl-a	EC	ANC	PH	TP	Seco	chi	Cond	Turb	Station Name	TP 2013 (ug/L)	TP 2014 (ug/L)	(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	TREN D
SUMDRC Sinis Lake- Barleis Co Formation and and and and and and and and and an														NVS	VS			Lakeshor	5.00		8.00	12.00			9.00		9.00	13.00	11.30	>
Number Survey Survey<	SUNMIDBC				6/7/2023	2023-627		16.90				6.69	0.0113			84.60	1.43	Epilimnior Deep Spot Off Dam		6.00	8.00	7.00	8.00	8.00			12.00	13.00	12.60	>
SUMDD Spin-se Lake-Deep Spin-se Amount-Deep Feature Amount-Deep Feature <		Bartletts Cove				2023-628		15.20				6.66				79.30	4.36	Hypolimni on Deep Spot-Off	8.00	7.00	8.00	8.00	9.00	9.00						
Sport Number Number </td <td>SUNMIDD</td> <td></td> <td>Comp</td> <td>2M</td> <td>6/7/2023</td> <td>2023-634</td> <td></td> <td></td> <td>7.19</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <th>Dam 12- 14'</th> <td></td> <td></td> <td>6.00</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>10.00</td> <td>13.00</td> <td>8.50</td> <td>></td>	SUNMIDD		Comp	2M	6/7/2023	2023-634			7.19									Dam 12- 14'			6.00						10.00	13.00	8.50	>
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Late 2023-625 50 2370 5.40 6.81 8.4 1.75 e Baceh- Store			Ері	2M	6/7/2023	2023-624	50	17.70			5.40	6.78	0.0126	1.50	2.50	83.30	1.82	e Shores Boat Launch	6.00		7.00									
SUNMDH Sunise Lake- Hampshire Brook 67/2023 2023-631 14.90 6.59 0.005 81.0 0.19 SUNMDM Sunise Lake-Main Beach 67/2023 2023-629 17.40 6.57 0.012 9.01						2023-625	50	23.70			5.40	6.81				84	1.75	e Shores Beach-												
SUNMOMB Sunrise Lake-Main 67/2023 2023-629 17.4 6.75 0.012 9 17.2 9 17.2 9 17.2 9 17.2 9 17.2 9 17.2 9 17.2 9 17.2 9 17.2 9 17.2 9 17.2 9 17.2 9 17.2 13.00 7.00 9.00 17.00 19.00 </td <td>SUNMIDH</td> <td></td> <td></td> <td></td> <td>6/7/2023</td> <td>2023-631</td> <td></td> <td>14.90</td> <td></td> <td></td> <td></td> <td>6.59</td> <td>0.0085</td> <td></td> <td></td> <td>81.60</td> <td>0.19</td> <th>Drive Main Beach- LLA</th> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>11.00</td> <td>12.30</td> <td><</td>	SUNMIDH				6/7/2023	2023-631		14.90				6.59	0.0085			81.60	0.19	Drive Main Beach- LLA										11.00	12.30	<
SUNMDPC Sunise Lake- pinkham Cove 607/2023 2023-626 8 6.62 0.0127 86.90 1.84 SUNMDT Sunise Lake- pinkham Cove 607/2023 2023-632 8.72 6.52 0.0164 57.90 1.70 18.00 8.00 9.00 15.00 7.00 8.00 8.00 16.40 > SUNMDT Sunise Lake- Tanglewood Brook 607/2023 2023-632 8.72 6.52 0.0164 57.90 1.70 18.00 8.00 9.00 15.00 7.00 8.00 18.00 18.00 SUNMDTB Sunise Lake-Town Beach 607/2023 2023-630 8.72 6.52 0.0164 52 6.80 0.0122 88 2.31 SUNMDTB Sunise Lake-Town Beach 607/2023 2023-630 17.30 52 6.80 0.0122 88 2.31 12.00 33.00 15.00 15.00 15.00 15.00 15.00 15.00 15.00 16.40 16.40 12.00 18.00 18.00 18.00 18.00 18.00 18.00 18.00 18.00 18.00 18.00	SUNMIDMB	Sunrise Lake-Main			6/7/2023	2023-629		17.40				6.75	0.0123			90	1.72	e Drive Pinkham Cove- Pinkham		7.00	6.00		13.00	7.00	9.00		10.00	15.00	12.70	>
SUNMIDT Sunrise Lake- Tanglewood Brook Sunrise Lake-Town Beach	SUNMIDPC				6/7/2023	2023-626						6.62	0.0127			86.90	1.84	Tanglewo od Brook- Lakeshor e Drive		18.00	8.00	9.00	15.00	7.00	8.00			22.00	16.40	>
SUNMDTB Sunise Lake-Town 6/7/2023 2023-630 17.30 52 6.80 0.0122 88 2.31 Beach Image: Constraint of the constration of the constrating data and the constrating data and the con	SUNMIDT	Sunrise Lake-			6/7/2023	2023-632		8.72				6.52	0.0164			57.90	1.70	Beach- Rte. 153 Town				33.00							12.20	
	SUNMIDTB				6/7/2023	2023-630		17.30		52		6.80	0.0122			88	2.31													
		Beach																											¹ Jun 6th	

Ten Year Phosphorus Load Comparison

Station Name	TP 2013	TP 2014	TP 2015	TP 2016	TP 2017	TP 2018	TP 2019	TP 2020	TP 2021	TP 2022	TP	TR	TP	TR
	(ug/L)	2023	TREND	2023	TREND									
Bartletts Cove-	5.00		8.00	12.00			9.00		9.00	13.00	(ug/L) ¹ 11.30	>	(µa/L) ²	
Lakeshore Drive	0.00		0.00	12.00			0.00		0.00	10.00	11.00			
Epilimnion Deep	6.00	6.00	8.00	7.00	8.00	8.00			12.00	13.00	12.60	>		\square
Spot-Off Dam 12-14'														
Hypolimnion Deep	8.00	7.00	8.00	8.00	9.00	9.00								
Spot-Off Dam 12-14'														
Hampshire Brook-			6.00						10.00	13.00	8.50	>		
Pinkham Road														
Hampshore Shores	6.00		7.00											
Boat Launch														
Hampshire Shores														
Beach-Shore Drive														
Main Beach-LLA										11.00	12.30	<		
Lakeshore Drive														
Pinkham Cove-		7.00	6.00		13.00	7.00	9.00		10.00	15.00	12.70	>		
Pinkham Road														
Tanglewood Brook-		18.00	8.00	9.00	15.00	7.00	8.00			22.00	16.40	>		
Lakeshore Drive														
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







7/31/2023 JULY 29. 2023, WHAT I<mark>S GOING ON</mark>

THANK YOU



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