

Ticklenaked Pond Water Quality Monitoring 2016-2022

Mark Mitchell

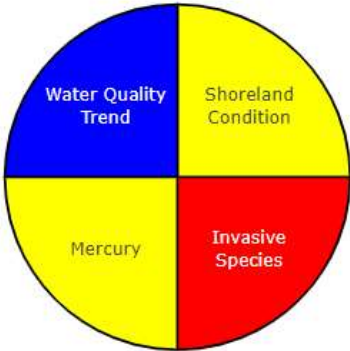
Lake Assessment and Lay Monitoring Program Coordinator
Vermont Department of Environmental Conservation (VT DEC)
University of Vermont Lake Champlain Sea Grant

2021 Ticklenaked Loons - Pete Stangel

Vermont Lake Score Card

Ticklenaked Pond

- Scores**
- Water Quality Data
- Lake Information



Watershed: **Highly Disturbed**

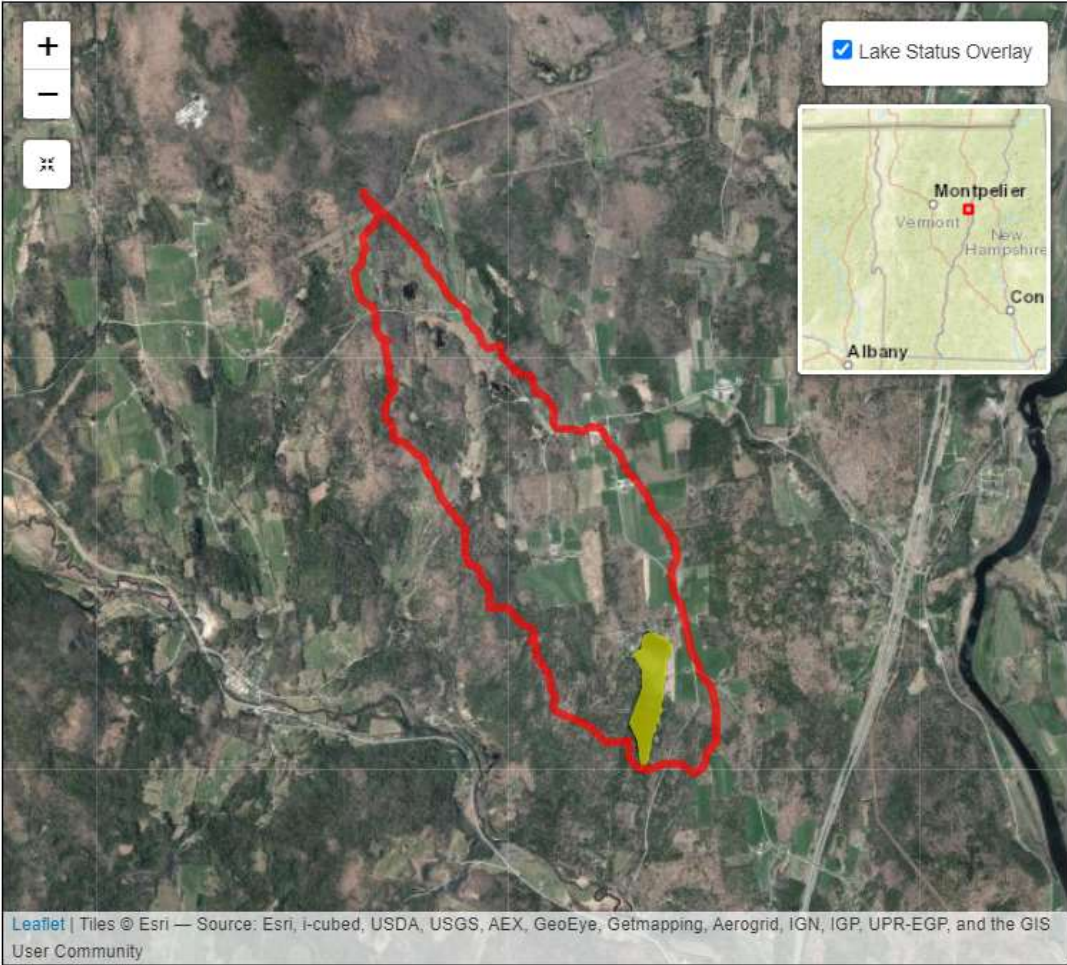
WQ Standards: **Stressed**

Details

- Stressed – Phosphorus
- Stressed – Organic Enrichment - DO

- Color Scoring System
- Good Conditions (Blue)
 - Fair Conditions (Yellow)
 - Poor Conditions (Red)
 - Insufficient Data (White)

[Learn How Lakes Are Scored](#)



Scores

Water Quality Data

Lake Information

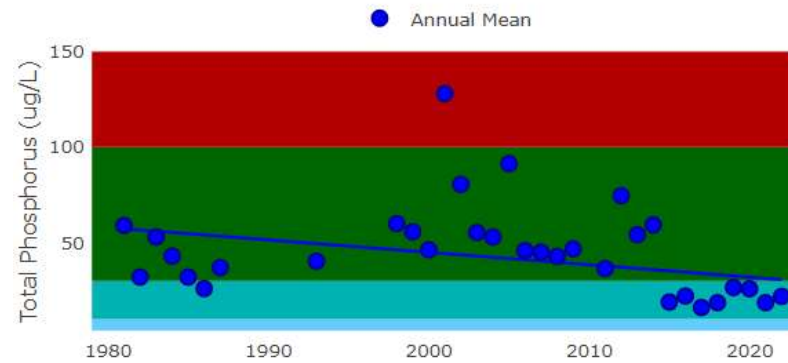
(Annual Means, Alum Treatment in 2014)

Plots

- Trophic condition thresholds are indicated by shading:
 - Hypereutrophic
 - Eutrophic
 - Mesotrophic
 - Oligotrophic
- Click on “Daily Mean” or “Annual Mean” to toggle on or off the data layer.

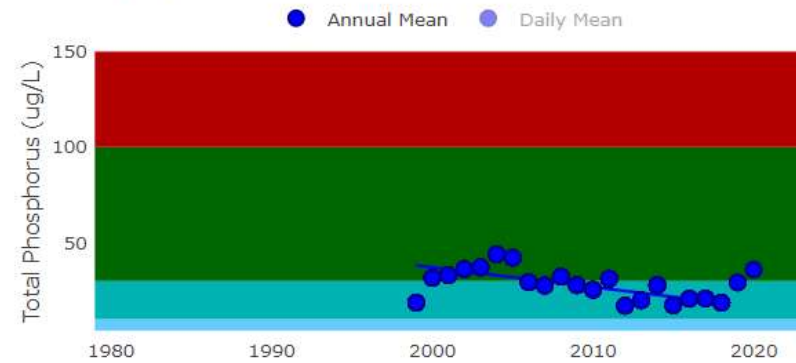
Spring Phosphorus

Trend: Significantly Decreasing (p-value = 0.0232)



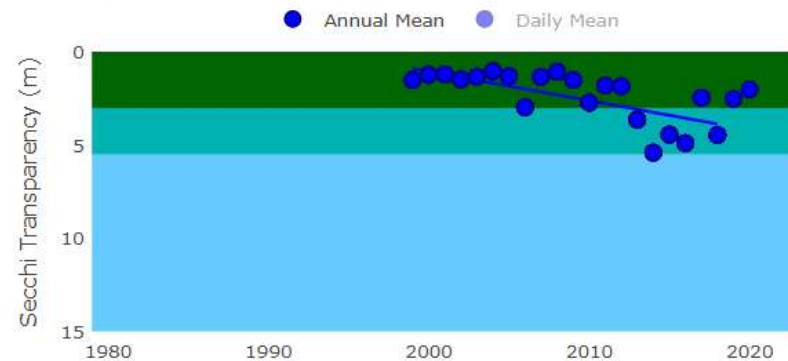
Summer Phosphorus

Trend: Highly Significantly Decreasing (p-value = 0.0057)



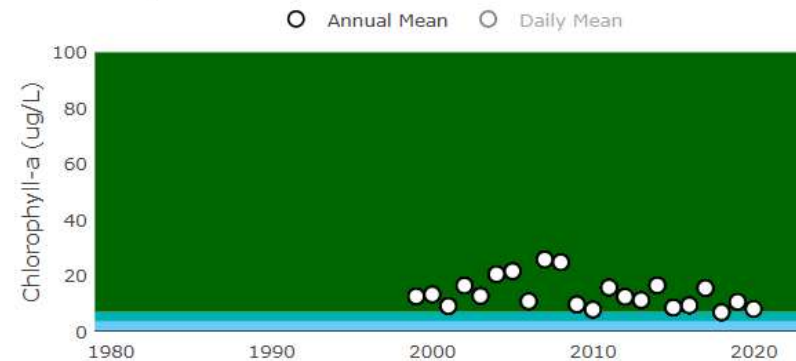
Summer Secchi

Trend: Highly Significantly Increasing (p-value = 7e-04)



Summer Chlorophyll-a

Trend: Stable (p-value = 0.1955)



Scores

Water Quality Data

Lake Information

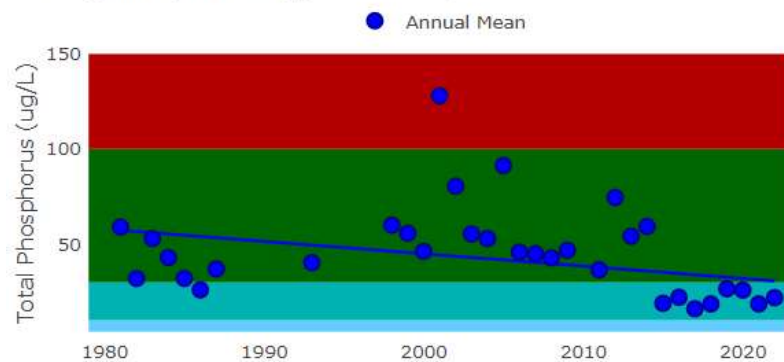
(All Annual Data, Alum Treatment in 2014)

Plots

- Trophic condition thresholds are indicated by shading:
 - Hypereutrophic
 - Eutrophic
 - Mesotrophic
 - Oligotrophic
- Click on “Daily Mean” or “Annual Mean” to toggle on or off the data layer.

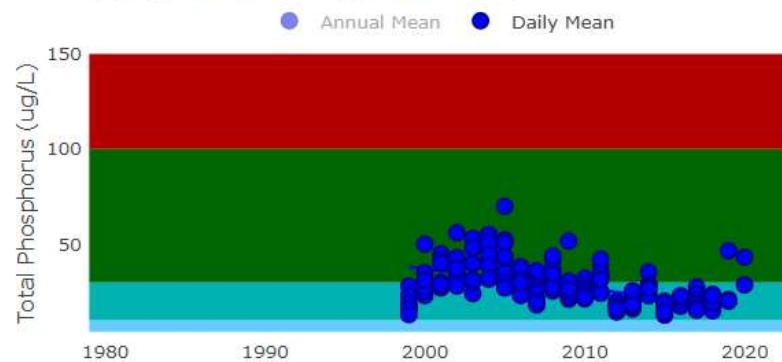
Spring Phosphorus

Trend: Significantly Decreasing (p-value = 0.0232)



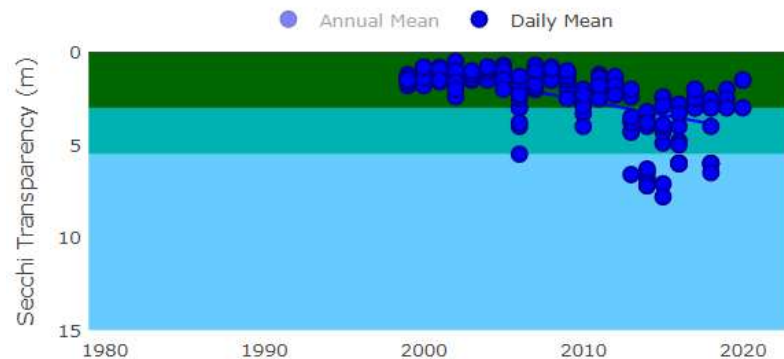
Summer Phosphorus

Trend: Highly Significantly Decreasing (p-value = 0.0057)



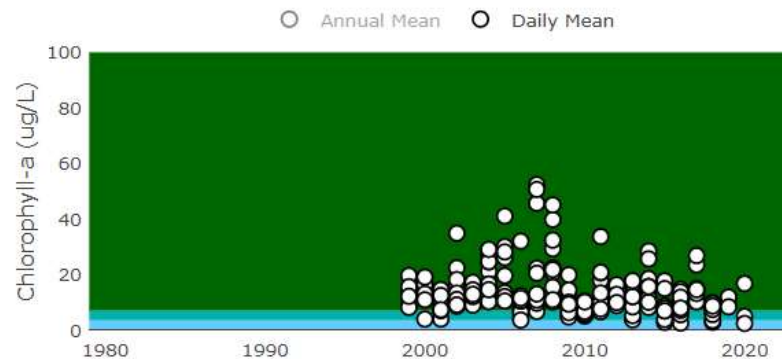
Summer Secchi

Trend: Highly Significantly Increasing (p-value = 7e-04)



Summer Chlorophyll-a

Trend: Stable (p-value = 0.1955)



VT DEC Lay Monitoring Report

TICKLENAKED POND

Annual Data (Station 1)

Year	Days Sampled	Secchi (m)	Secchi View Tube (m)	Chloro-a (µg/l)	Summer TP (µg/l)	Spring TP (µg/l)
1979						31.0
1981						59.0
1982						32.0
1983						53.0
1984						43.0
1985						32.0
1986						26.0
1987						37.0
1993						40.3
1998						60.0
1999	8	1.5		12.5	18.6	55.7
2000	7					46.3

Annual Data (Station 1)

Year	Days Sampled	Secchi (m)	Secchi View Tube (m)	Chloro-a (µg/l)	Summer TP (µg/l)	Spring TP (µg/l)
2001	9	1.2		9.1	33.0	122.0
2002	9	1.5		16.4	36.2	78.7
2003	9	1.3		12.7	37.1	55.3
2004	9	1.0		20.5	44.0	53.0
2005	9	1.3		21.6	42.1	91.3
2006	10	2.9		10.8	29.4	45.8
2007	9	1.3		25.7	27.7	45.0
2008	10	1.0		24.8	32.2	42.8
2009	10	1.5		9.7	27.8	46.8
2010	9	2.7		7.8	25.4	
2011	10	1.8		15.7	31.1	36.5
2012	8	1.8		12.4	17.0	72.4
2013	9	3.6		11.2	19.9	54.2
2014	9	5.4		16.5	27.8	59.3
2015	9	4.4		8.5	17.3	19.0
2016	9	4.9		9.3	20.7	22.0
2017	9	2.4		15.5	20.8	16.1
2018	9	4.4		6.8	18.6	19.2
2019	3					26.6
2020	3					25.9
2021						18.6
2022						21.9

Period of VT DEC TMDL Monitoring

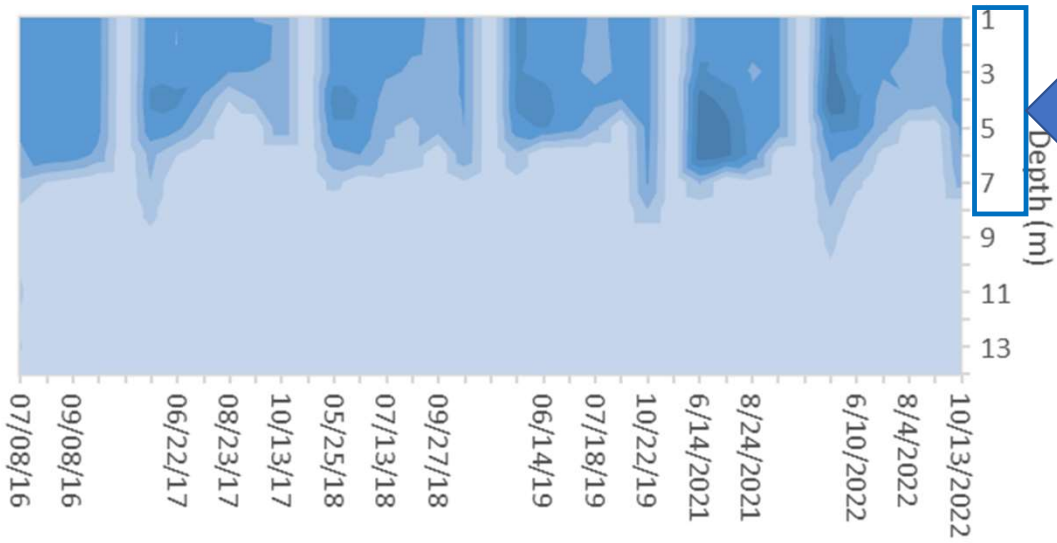


*Ticklenaked Pond Summer TP Standard = 24 µg/l (Euphotic Zone)

Ticklenaked Pond Station # 1 VTDEC TMDL Monitoring Dissolved Oxygen Profiles 2016-2021

Dissolved
Oxygen
(mg/l)

- 12.5-15
- 10-12.5
- 7.5-10
- 5-7.5
- 2.5-5
- 0-2.5

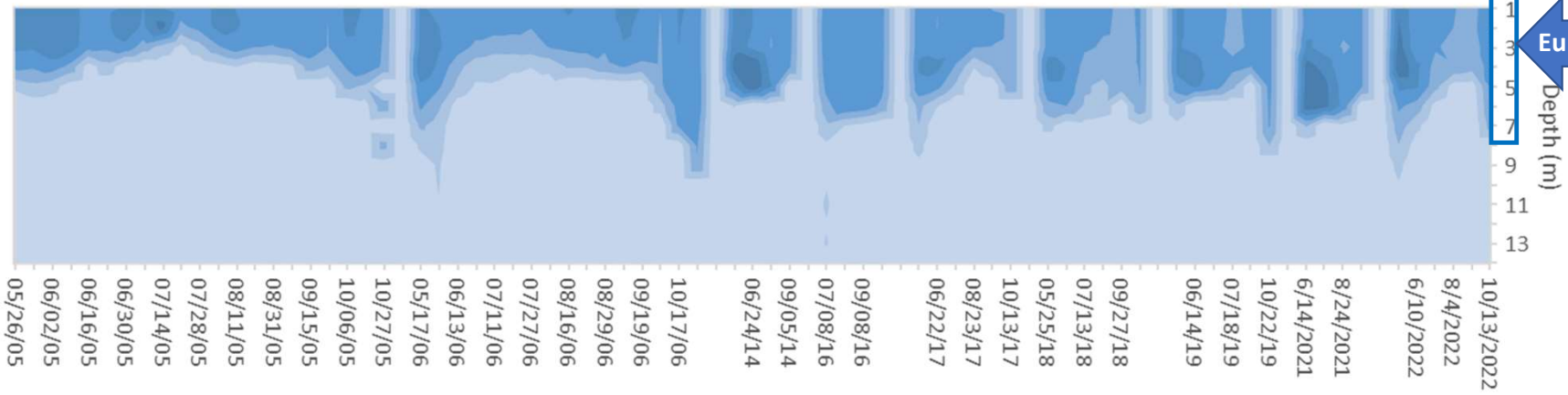


Euphotic Zone?

Ticklenaked Pond Station # 1 Dissolved Oxygen Profiles May-Oct 2005-2006 and 2014-2022: Pre and Post Alum Treatment (2014)

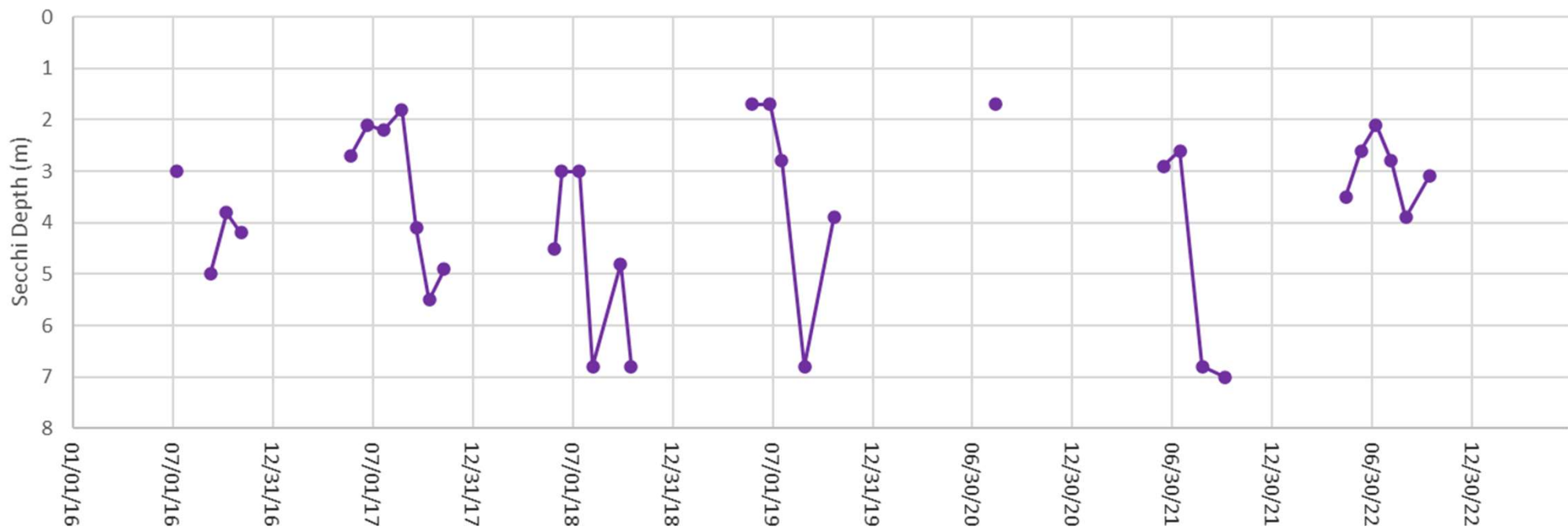
Dissolved
Oxygen
(mg/l)

- 12.5-15
- 10-12.5
- 7.5-10
- 5-7.5
- 2.5-5
- 0-2.5



Euphotic Zone?

2016-2019 Ticklenaked Pond Station #1 VTDEC TMDL Monitoring Secchi Depth (Water Clarity)



2016-2022 Ticklenaked Pond Station #1 VTDEC TMDL Monitoring Chlorophyll-a (Hose from Surface to 2X Secchi Depth)

