

Lake Name	Size (acres)	Depth (m)	MSTP (ug/L)	Chl-a (ug/L)	Secchi (m)	Trend MSTP	AIS det	Greeter \$ invested
Use Criteria A(1)	NA	NA	< 12	< 2.6	> 5	NA	NA	NA
Use Criteria B(2)	NA	NA	< 18	< 7	> 2.6	NA	NA	NA
Caspian	789.8	43.3	9.4	2.1	7.7		N	\$5,776
Echo	546.5	39.3	9.6	1.7	7.8		N	\$9,609
Harveys	357.2	44.2	12.7	2.8	5.8	Good	N	\$6,930
Maidstone	755.8	36.9	6.8	1.6	8.9		N	\$3,893
Raponda	123.8	3.7	11.4	2.6	3.4	Decrease	N	\$5,063
Seymour	1777.2	50.9	8.9	2.2	8.1	Stable	N	\$15,680
Shadow	217.3	42.4	8.9	2.3	7.9		Y	\$13,471
Willoughby	1864	93.9	10.6	1.4	8	Stable	Y	\$6,304
TOTAL								\$66,726
% of 450k								15%

IWIS Score Card Data for Lakes eligible for A(1) classification for
Aesthetic Conditions Use

Lake ID

[View Report](#)

1 of 1 Find | Next

SHADOW (GLOVER) - data through 2020

[Learn How
Lakes Are
Scored](#)



Lake Area:
217.3 acres

Basin Lake Area Ratio:
16

Max Depth:
42.4 meters

Mean Spring TP:
8.3 ug/L

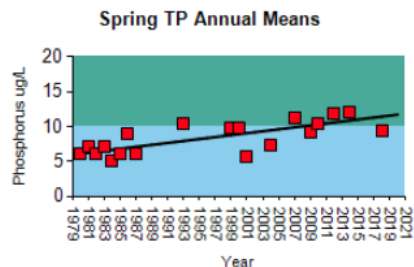
Mean Summer TP:
8.9 ug/L

Mean Summer Chla:
2.3 ug/L

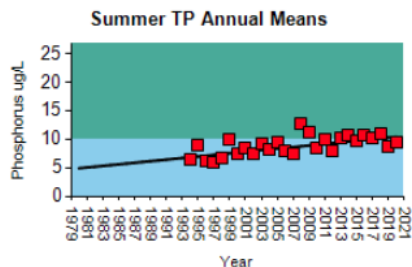
Mean Summer Secchi:
7.9 meters

Hypereutrophic
Eutrophic
Mesotrophic
Oligotrophic

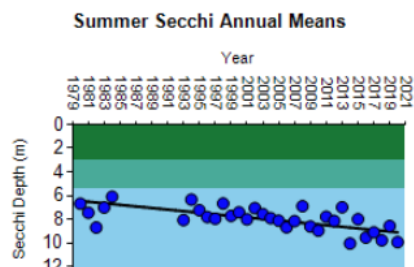
Spring TP Trend: $p = 0.0024$ | CV = 27
Highly significantly increasing



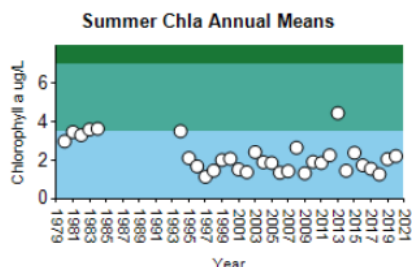
Summer TP Trend: $p = 0.0015$ | CV = 19
Highly significantly increasing



Summer Secchi Trend: $p = 0$ | CV = 13
Highly significantly increasing



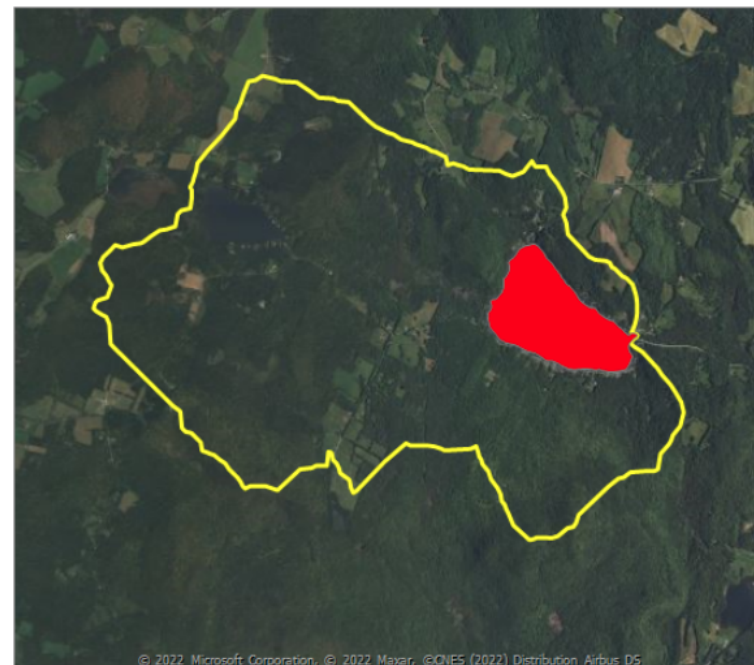
Summer Chla Trend: $p = 0.0717$ | CV = 39
Stable



Trend Score: **Poor**

WQ Standards Status: **Altered**

Watershed Score: **Moderately Disturbed**



Stresses / Impairments

Altered -- Flow alteration

Shadow Lake LMP Water Quality Data - Last 10 years

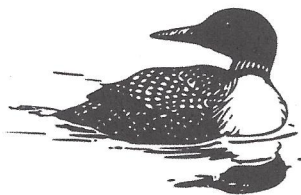
Year	Secchi (m)	Chlorophyll A (ug/L)	Total Phosphorus (ug/L)
2020	9.9	2.2	9.4
2019	8.6	2.1	8.6
2018	9.8	1.3	11
2017	9.1	1.5	10.1
2016	9.5	1.7	10.6
2015	8	2.4	9.6
2014	10	1.4	10.8
2013	7	4.5	10.3
2012	8.1	2.3	7.9
2011	7.8	1.9	9.9

Mean	8.78	2.13	9.82
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TP Value meets State of Vermont Listing & Assessment Methodology for A(1) Status for Aesthetics Uses.

10 years of data show that the mean of the means is below 12, and it passes the test for statistical significance.

Using a simple one tailed t-test, the t-value is -7.021307. The value of p is .000031. The result is significant at $p < .05$.



LAKE PARKER ASSOCIATION, INC.
48 COUNTY RD, UNIT 40
WEST GLOVER, VT. 05875
www.lakeparker.org

Vermont Agency of Natural Resources
1 National Life Dr., Davis 2
Montpelier, Vt. 05620-3901
Attn: Julie Moore, Secretary

Vermont Department of Environmental Conservation
1 National Life Dr.
Montpelier, Vt. 05602-3901
Attn: Peter Walke, Commissioner

Dear Ms. Moore and Mr. Walke:

Lake Parker Association, Inc. strongly urges the ANR to act favorably on the Shadow Lake Association /Town of Glover's petition to Reclassify Shadow Lake from B(2) to A(1). We feel that this reclassification is in the best interests of the watershed, the general public and the residents of the Northeast Kingdom.

Motion of Support passed by the Directors of the Lake Parker Association by email vote on February 7, 2022.


Attest:
Brenda Plastridge
President, Lake Parker Association

cc: Jenifer Andrews, Shadow Lake Association: jeniferbandrews@gmail.com
Oliver Pierson, DEC: oliver.pierson@vermont.gov



Memphremagog Watershed Association

www.mwavyt.org

February 2, 2022

Commissioner Peter Walke
Vermont Department of Environmental Conservation
Davis Building-3rd Floor
Montpelier, Vermont 05620-3901

Re: Support for the Petition to Reclassify Shadow Lake from B(2) to A(1) status

Dear Commissioner Walke:

In keeping with the purpose of our organization, Memphremagog Watershed Association's Board of Directors fully supports this Petition to Reclassify Shadow Lake from B(2) to A(1) lake. MWA was formed to promote participation in the conservation and improvement of the Memphremagog Watershed, to monitor and protect water quality and wildlife habitat, and to preserve the scenic, historic and ecological integrity of the watershed.

The Reclassification of Shadow Lake from B(2) to A(1) allows better protection more rapidly if its water quality becomes impaired. Shadow Lake is one of several northern Vermont lakes considered to have excellent water quality and we want it to remain so. Reclassification is a tool to increase lake protection and restoration sooner than under the current B(2) status. Recent Lay Monitor and LaRosa data shows that phosphorus levels are increasing. Reclassification will provide access to more resources to help reverse this trend.

MWA has over the years worked with Shadow Lake Association on numerous projects designed to improve the lakeshore and the quality of the waters and have been impressed with their diligence and concern.

We strongly urge the ANR to act favorably on the Shadow Lake Association /Town of Glover's petition to Reclassify Shadow Lake from B(2) to A(1). MWA feels that this reclassification is in the best interests of our watershed, the general public and the residents of the Northeast Kingdom.

Sincerely,

David Converse,
President

cc: Jenifer Andrews, President, Shadow Lake Association
Secretary Julie Moore, Vermont Agency for Natural Resources

PO Box 513
Newport, VT 05855

802.487. 0160
www.mwavyt.org

Town of Glover



51 Bean Hill Glover, Vermont 05839
Phone 802-525-6227 / fax 802-525-4115
glovertc@comcast.net / www.townofglover.com

January 27, 2022

Vermont Agency of Natural Resources
1 National Life Dr, Davis 2
Montpelier, VT 05620-3901
Attn: Julie Moore, Secretary

Vermont Department of Environmental Conservation
1 National Life Dr
Montpelier, VT 05602-3901
Attn: Peter Walke, Commissioner

Dear Ms Moore and Mr Walke,

The Glover Select Board, in partnership with the Shadow Lake Association, give our full support to the reclassification of Shadow Lake from B2 to A1 in order to protect its water quality. After attending the informative session Oliver Pierson presented in November, we agree that this would be one way to protect the pristine waters of a great resource: Shadow Lake.

Sincerely,

David Simmons
Glover Select Board Chair

cc: Jenifer Andrews, Shadow Lake Association: jeniferbandrews@gmail.com
Oliver Pierson, DEC: oliver.pierson@vermont.gov



February , 2022

Vermont Agency of Natural Resources
1 National Life Drive, Davis 2
Montpelier, Vermont 05620-3901
Attn.: Julie Moore, Secretary

Vermont Department of Environmental Conservation
1 National Life Dr.
Montpelier, Vermont 05602-3901
Attn.: Peter Walke, Commissioner

Dear Secretary Moore and Commissioner Walke,

This letter is written in full support and as the author of the petition for the initiative to Reclassify Shadow Lake from B(2) to A(1). The Shadow Lake Association Board feels that this petition is in the best interests of water quality for the General Public, the Watershed and the Northeast Kingdom.

We ask that you mark this petition administratively complete and initiate legal and technical review, in line with DEC's own 2013 procedures for reviewing petitions, including the critical step of seeking public comment through pre-rulemaking hearings.

We also support a "legislative fix" to 10 VSA 1259(d) that modernizes this legislation so it isn't a barrier to increased lake protection through reclassification.

Sincerely,
Jenifer Andrews
President, Shadow Lake Association Board

cc : Oliver Pierson, DEC: oliver.pierson@vermont.gov



The Federation of Vermont Lakes and Ponds, Inc.
P.O. Box 766
Montpelier, VT 05601
www.vermontlakes.org

February 1, 2022

Julie Moore, Secretary
Agency of Natural Resources
1 National Life Drive
Montpelier, VT 05620-3901

Re: Issues concerning the evaluation of Petitions for the Reclassification of Vermont Lakes

Dear Secretary Moore:

On behalf of the Board of Directors of The Federation of Vermont Lakes and Ponds (FOVLAP), I write in support of ongoing efforts led by three lake associations, adjacent Select Boards, and the Vermont Department of Environmental Conservation (VTDEC) to [reclassify lakes](#) that are in excellent condition and exceed the Vermont Water Quality Standards (VWQS) for an A(1) lake but are currently classified as B(2) lakes. FOVLAP's core mission is to preserve and protect Vermont's lakes and ponds as well as their watersheds for the benefit of current and future generations. FOVLAP is therefore an interested party in the lake reclassification effort and, as such, supports the reclassification of these qualifying lakes.

This letter expresses our concerns 1) with the delays in processing petitions that have been submitted and 2) with a prohibition on the discharge of septic wastes into the watershed of Class A waters as cited in Vermont Statute 10 V.S.A. § 1259 (d).

1. Concerns about DEC's Delay in Reviewing Submitted Petitions

Based on communication with our member lake associations, FOVLAP is aware that VTDEC received three petitions in Fall 2021 sponsored by municipalities, lake associations, and residents of Vermont for the reclassification of Caspian Lake in Greensboro, Echo Lake in Charleston, and Maidstone Lake in Maidstone to A(1) status. It is our understanding that VTDEC has found these petitions to be administratively complete and has initiated technical and legal review. However, no action has yet been taken to hold the public meetings that are required during the public participation phase, which is cited under Section 4 of the ANR/DEC [Procedure for Evaluating Petitions to Adopt, Amend, or Repeal Surface Water Wetland Rules](#) dated November 2013. It is our hope that ANR and DEC will prioritize the initiation of the public comment period, including pre-rulemaking hearings for these petitions immediately, as described in your own procedures. Unnecessary delay is demeaning to the volunteers who have submitted these petitions in good faith and demonstrates a lack of concern for these lakes, which are considered by many to be jewels of Vermont and are especially prized for their natural beauty and recreational opportunities. We look forward to hearing from you with dates for the pre-rulemaking hearings to further the reclassification process at these three lakes.

*To preserve and protect Vermont's lakes, ponds, and their watersheds
for the benefit of this and future generations.*

2. Concerns with prohibition of the discharge of septic wastes into Class A waters

As mentioned, FOVLAP is concerned that the current text of [Chapter 47, Section 1259](#) of Vermont's Water Pollution Control Act, which dates back to 1986, is functioning as a barrier to increasing protections for lakes through reclassification. Specifically, in subsection d, this act states:

(d) No person shall cause a discharge of wastes into Class A waters, except for on-site disposal of sewage from systems with a capacity of 1,000 Gallons Per Day (GPD), or less, that are either exempt from or comply with the environmental protection rules, or existing systems, which shall require a permit according to the provisions of subsection 1263(f) of this title.

We find this subsection to be of concern for the following reasons:

1. The goal of this statute is to protect surface waters by prohibiting any septic system that has a capacity of more than 1,000 gallons per day; however, we feel that by focusing solely on the capacity of these systems, solutions that will further protect Class A waters while permitting their wise use are being prohibited. Today it is well known that the use of a properly managed Innovative Alternative (IA) wastewater management system can dramatically reduce the strength of influent wastewater before it enters the leaching field. In addition, the effluent from such an IA system that enters ground water via the leaching field contains negligible amounts of contaminants. Such systems can be scaled to fit most needs, are commercially available, and are a wise investment that will further protect these pristine waters. It should be noted that most IA systems require yearly maintenance.
2. Rather than acting to protect pristine surface waters this prohibition as currently stated has become a barrier in the reclassification process, delaying or preventing the submission of reclassification petitions from lakes that are in excellent condition and exceed the VWQS for an A (1) lake, but are currently classified as B(2) lakes. The Town of Morgan Select Board and the Seymour Lake Association have jointly decided not to pursue reclassification until a legislative fix is achieved for 10 VSA 1259(d), despite their belief that reclassification would be an asset to ongoing lake protection efforts (see attached letter).
3. Furthermore, the prohibition does not address the fact that existing septic systems that are old, malfunctioning, or failed are known to degrade surface waters. A means of identifying and replacing these failed systems with properly designed and maintained septic systems, without placing an unreasonable financial burden on the owners of these existing systems, should be established for all Class A waters.

FOVLAP respectfully recommends that the Agency of Natural Resources, working with the legislature, amend this subsection of Vermont Statute 10 V.S.A. § 1259 so that it no longer unnecessarily impedes efforts to protect Vermont's waters via reclassification of eligible lakes to A(1) status. We suggest the following revised statutory text for your consideration as a starting point for these required amendments.

(d) No person shall cause a discharge of wastes into Class A waters, except for on-site disposal of sewage from systems that will not degrade surface waters that have specified maximum wastewater influent and output strengths consistent with design flow requirements, that consider the seasonal variation in the design flow of these systems and this variation's impacts on maintenance and service requirements, and that are either exempt from or comply with the environmental protection rules, or from existing systems that are operating within their projected design life and are not

malfunctioning, and which shall require a permit according to the provisions of subsection 1263(f) of this title.

In conclusion, FOVLAP would like to thank the Agency of Natural Resources staff, including the staff of the VTDEC Watershed Management Division, for supporting these three lake communities with monitoring water quality and exploring options for increasing protections of these lakes, which play very important recreational, economic, and environmental roles. We look forward to further collaboration with you and your staff on lake reclassification and other efforts to restore and protect water quality in Vermont's waters.

Thank you for considering our concerns and recommendations.

Sincerely,

Pat Suozzi
President

CC: House Committee on Natural Resources, Fish, and Wildlife
Senate Natural Resource and Energy Committee
Peter Walke, Commissioner, Department of Environmental Conservation

Attachment: Letter from Seymour Lake Association

Attachment: Letter from Seymour Lake Association

Julie Moore
Secretary, Vermont Agency of Natural Resources
1 National Life Drive
Montpelier, VT 05620-3901

Dear Secretary Moore:

Seymour Lake Association supports the effort of VTDEC's Lakes and Ponds Division lead by Manager Oliver Pierson to better protect Vermont's highest water quality lakes using the reclassification process. However, we cannot defend or support the A (1) restriction of limiting septic discharges in A (1) watersheds to 1,000 ~~gpd~~. This restriction cannot be scientifically defended and would needlessly prevent some land uses in our watershed without a corresponding benefit to water quality.

The resulting situation is that the only barrier standing in the way of Seymour Lake Association and Morgan from submitting a petition for reclassification of Seymour Lake is this restriction.

Thus, we fully support Oliver Pierson's work to find a way for the Legislature to remove or adjust the present septic restriction. We encourage all, who have the ability, to remove this barrier to A (1) reclassification in a timely manner.

Sincerely,
Peggy Barter, WQ Chair, Seymour Lake Association
Rhonda ~~Shippee~~, President, Seymour Lake Association

CC: Peter Walke, VTDEC Commissioner
Oliver Pierson, VTDEC Lakes and Ponds Manager



The Federation of Vermont Lakes and Ponds, Inc.
P.O. Box 766
Montpelier, VT 05601
www.vermontlakes.org

August 9, 2021

Julie Moore
Secretary, Vermont Agency of Natural Resources
1 National Life Drive
Montpelier, VT 05620-3901

Dear Secretary Moore:

The Federation of Vermont Lakes and Ponds (FOVLAP) supports the Vermont Department of Environmental Conservation (VTDEC) Lakes and Ponds Program's efforts to reclassify lakes that are in excellent condition and exceed the Vermont Water Quality Standards (VWQS) for an A(1) lake for certain uses, but are currently classified as B(2) lakes. VTDEC has already identified eight lakes that are eligible for reclassification under these criteria. These lakes include Raponda, Shadow, Caspian, Seymour, Echo (Charleston), Maidstone, Harvey, and Willoughby. We support the reclassification of these lakes.

FOVLAP's core mission is to preserve and protect Vermont's lakes and ponds as well as their watersheds for the benefit of this and future generations. FOVLAP is, therefore, an interested party and, as such, supports the reclassification of each lake cited above. We feel the reclassification of these lakes will be in the best interests of the surrounding communities and of all Vermonters.

To reclassify any of these lakes, a petition must be prepared and submitted to VTDEC. A key element of the petition requires the petitioners to reach out to interested parties, such as lakeshore landowners, local municipalities, civic and business organizations, and the towns adjacent to the proposing waterbody, to discuss the purpose of and the need for, the petition and to solicit letters of support that will be included in the petition.

There are compelling reasons for increasing protections for oligotrophic lakes that have excellent water quality, but for which ongoing monitoring programs have established that summer total phosphorus concentrations are increasing. Such water quality deterioration could lead to decreased usage, reduced recreational opportunities, and irreparable damage to these pristine resources. Matthews, Merrell, and Thomas¹ established through their long-term

¹ Matthews, L., Merrell, K., Thomas, P., (2018). Is Vermont Losing its Oligotrophic Lakes? [NALMS Lakeline, Summer 2018](#) pp 16-18.

*To preserve and protect Vermont's lakes, ponds, and their watersheds
for the benefit of this and future generations.*

NORTHWOODS
STEWARDSHIP CENTER
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Vermont Department of Environmental Conservation
Watershed Management Division
Re: Shadow Lake Reclassification

February 14, 2022

To Mr. Oliver Pierson,

I am writing to express our support for the reclassification of Shadow Lake (in Glover) to an A(1) water. This reclassification will allow this beautiful lake access to much needed additional funding for project implementation at a much lower water quality threshold, which looms fairly close based on the current Lake Scorecard and reclassification standards.

NorthWoods has worked with the Shadow Lake Association and many individual landowners around the lake to develop water quality improvement projects on the public beach and on private waterfront properties. The rain gardens, open top culvert, and shrub plantings on the public beach have helped to mitigate beach erosion and sedimentation into the lake by capturing and treating stormwater runoff from the roads. We hope to continue this work to protect the water quality in Shadow Lake from the effects of dense shoreline development and stormwater runoff.

We appreciate your proactive approach to the protection of water quality in our lakes, and we look forward to working together to implement projects that will help keep them clean.

Thank you,



Meg Carter
Conservation Science Director
NorthWoods Stewardship Center