

Lakes & Environmental Stewardship Committee

Submitted by Stew Arnold, Chair, Aug 4 2022

This past year has been exciting with activities for Caspian Lake and the greater environs of Greensboro. Our long, established Lake Protection Committee, whose focus has been primarily about Caspian Lake, sought to merge with the GA's Conservation Committee this past spring for governance streamlining. Running parallel, the Stewards of the Greensboro Watersheds Committee, born from a visionary task force for the whole town, prioritizing Water Quality and Lake Protection, found itself seeking grants and financial support for it's Lake Wise program for Caspian shoreline and Lake & Watershed Action Plan. With common goals and members sitting on both committees, it was decided by the GA to adopt the Stewards by invitation to join the GA as a sub committee of it's newly formed (named) Lakes & Environmental Stewardship Committee.

Caspian Lake Protection Sub Committee

Stew Arnold, chair

The Caspian Lake Protection Sub Committee will steward the following: Caspian Water Quality Monitoring, Boat Launch Greeter Program, and Lake Level. Other areas of care and concern include FOVLAP, Dam Integrity, Loons, Goose Poop, and any lake related issues. This committee is looking for Volunteer Invasive Patrollers, Lay Monitors, Grant Coordinators, and others to assist with these tasks.

Stewards of the Greensboro Watersheds Sub Committee

Jo Ann Hanowski, chair

The Stewards of the Greensboro Watersheds Sub Committee will steward the following: Caspian Lake Watershed Reclassification to A1, Lake & Watershed Action Plan, and Lake Wise Program. Other areas of care and concern include Stream Wise Program, Septic Socials, and any environmental issues. This committee is looking for Educators, Project Managers, and others to assist with these tasks.

Water Quality Monitoring

Caspian Lake remains good to excellent for water clarity. High pollen lasted longer the average this past June thus poorer than average readings until lake turned when we got our best reading of 12m (39ft) in mid July. Average levels for Chlorophyll-a and some increase trending in Total Phosphorus still exist. Our Lay Monitors collect samples weekly and the DEC (Dept of Environmental Conservation) of Vermont compiles results.

Because of the increasing trend in Total Phosphorus, we are testing 5 Tributaries around the west, north, and east sides of Caspian Lake to see if we can determine any sources of higher concentrations such as agriculture, road runoff, or areas of erosion. Results from 4 years of sampling in summers of 2019-22 showed 4 of the streams matched or only slightly above the state standard of 12-15ug/L (think parts per million) during normal flows. One stream called Trib 10 is a culvert under East Craftsbury Rd that drains the Perron Farm field and empty's into cove south of Black's Point. Trib 10 has average

readings of 50 - 70 during normal flows and 180 - 220 during a high flow events in August. During these same high flow, Cemetery Brook had 70-80, Porter Brook had 30-57, and Tate Brook had 20-50. The highest numbers can be attributed to agricultural runoff due to the supporting Dissolved Phosphorus sampling done at same time.

Sampling continues for Summer of 2022 and hopefully beyond. This data will assist in developing a plan to reduce both Total and Dissolved Phosphorus from these sources.

Caspian Lake Watershed Reclassification to A1

At last years annual meeting, we heard from Oliver Pierson, DEC Lakes & Ponds Program Mgr, about the reclassification of Caspian Lake from B2 to A1. Our community gave it's majority blessing for the state to pursue passage of our application. The state planned to submit our application with 4-5 other lakes from Northeast Kingdom for passage yet there was some resistance due to the 1000gal per day usage limit for new development within an A1 watershed. The state attempted to address this issue by modifying the rule yet delays have pushed that path until this coming fall/winter legislation sources. We will stay abreast of this and continue to support this as a benefit to our watershed community.

Greeter Program

First off, our best news is Caspian Lake is still free of any known invasive species - plant or animal. To reduce the risk of introducing aquatic nuisance species and to educate lake visitors about the threat of degraded water quality by aquatic nuisance species, the Town of Greensboro employs Greeters to monitor the boat access area from Memorial Day to Labor Day. Their objective is to inspect all entering trailers/boats to ensure they are free of all aquatic nuisance species such as Eurasian Water Milfoil, Zebra Mussels, Water Chestnuts, Spiny Water Fleas, etc before entering Caspian Lake. The Greeters were trained by VT DEC personnel. In addition, the Greeters take this opportunity to inform boaters about aquatic nuisance species. Our surveys of these boaters indicates that almost 100% are now knowledgeable about the invasive threat.

The Greeter Program is funded by the Town of Greensboro with an assisted grant from the DEC of Vermont. Typically, monitoring is done in two or three shifts each day - weather permitting, from 6am to 6pm. About 1200 boats entered Caspian lake in a normal season, yet 1600+ boats entered for 2020 season due to Covid isolation. 700+ boats have been inspected this year as of Aug 1st. Most of our boat traffic are Kayaks and other non-risk watercraft. Nearly all boats are local as Caspian is their last prior use lake.

During last 8 seasons, **NO** Eurasian Water Milfoil was found by our inspectors on any trailer/boat!

Caspian Lake & Watershed Action Plan

The Stewards applied for and received a grant from the Orleans County Conservation District to do a Lake & Watershed Action Plan or LWAP for the Caspian Lake watershed to give us a fuller understanding of our water quality data and conditions, summarize our surface water uses, identify priorities for water quality, and restoration of any degradation found. Since we are headwaters to the Lamoille River, there is Federal money to support this grant. Work was to have begun on this plan in June yet is currently delayed due to quality assurance metrics from the EPA. We believe this will be resolved in the next few weeks and start this summer to continue through fall. The Lake Wise Program is linked directly to this plan and assists in the shoreline summary. Restoration action will be prioritized from Lake Wise assessments completed last year and this year. In addition, there are state resources available for towns and property owners to review best practices in repair or replacement of culverts, drain systems, and road maintenance in our watersheds. Reports to be available next spring / summer.

Lake Wise Program

The GA funded \$12,000 to provide Lake Wise Assessments to the Caspian Lake shoreline property owners as a lake-friendly way to provide education on best management practices (BMPs) in four areas: Shoreline Use & Protection; Recreation & Lawns; Driveways & Runoff; plus Septic & Structure. We have performed about 20 assessments to date and will complete another 20+ this summer season. The Stewards sent a letter signed by GA president, Lake Protection chair, and Stewards chair last week encouraging all lakeshore owners to participate. So, many more will done next year!

Water Level and Ice

The winter and spring's extremely high water and ice break-up combined with high winds caused significant damage to shoreline and property around the lake during 2015 thru 2019. We addressed this issue multiple times with the Department of Environmental Conservation and following the 2019 recovery of extremely high water threatening the dam, the weir was reset to the current 6 inch opening. This has led to slightly lower levels these recent years. We will continue to monitor this issue.

Ice On = first 80% coverage just a sheen on Dec 20th, then all gone. Full Ice On = Jan 3rd.

Ice Off, begins April 18th with enough open water to kayak shore. Full Ice Off = April 24th

FOVLAP - Federation Of Vermont Lakes And Ponds

We have representation on this statewide association which meets monthly to address common areas of concern for all lakes and ponds. They sponsor educational opportunities with a Spring (and sometimes Fall) Seminar and Summer Annual Meeting.

Dam Integrity

Caspian Lake's outflow is control by a dam owned by Hardwick Electric. This dam got a poor rating in it's last inspection and is showing major signs of stress. Hardwick Electric has been responsive when asked to remove blockages at weir and has made upgrades to both sides of dam to improve integrity also Rock piling on south side and tree removal on north side both to prevent future erosion. We will assist all powers available to address these concerns.

Loons

We had nesting with eggs laid on the loon raft off Burlington Point and successful hatchlings on June 18/19th. Our team of Linda Shatney, Will Lyman, Nina and Greg Sharp, Eric Hanson, myself, and many others keep a watchful eye on the mating pair and chicks. Great to have them doing well, after 2 years of various set backs. We will be ready to assist next spring with the loon raft and signage.

Goose Poop

Our lake had been experiencing an increasing population of Canada Geese and the environmental/aesthetic impact. Last spring Ila Hunt spearheaded an effort to mitigate the goose population by applying for Federal Permits. Again this May & June, teams searched for nests and while we found and destroyed only one, we may have disturbed enough others, as there were very few this summer. Permits also allow property owners to harass the geese while on land, not in the water. Less geese means less poop at public beach and on lawns around the lake.

Septic Socials

We are hosting a first - Septic Social - on Wednesday, August 10th, 5pm at Cassey's Ice Cream Stand on Beach Rd. Come meet Patrick Larsen, who will discuss septic designs with Hans of Tarpin Septic. Cheese & crackers. Bring chairs or blanket plus picnic.

Other occasional topics

Fireworks, sky lanterns, fishing, recreation, water & wastewater town plans are discussion points on occasion.

Summary

More help is needed to address these programs and areas of concern. Thank you all for caring so much about our lake! Please join in the fun!