

2021 Water Quality Report Summary

The purpose of the Clark Lake WQVC is to identify and facilitate opportunities to reduce the threats to:

- 1) Surface and ground water quality and
- 2) The wildlife habitat integrity of the Lake and surrounding area.

The Water Quality/ Vegetation Committee produced a report in the spring of 2017 summarizing the findings and recommendations from the 2007 Stevens Point study, their current status and a 5 year outline for continued monitoring and projects. This is the annual update to that report without attached copies of the data. The [2021 Water Quality report with data](#) is available.

These measures were used to create a separate report for [WQVC 2021 projects summary and 2022 plan](#).

Measures summary 2021:

Changes or new measures in 2021:

- Properties with less than 35 foot viewing width: not be done.
- Properties impermeable surface percent: County GIS map survey.
- Properties with individual natural shore or Healthy Lakes projects: Change to number of Buffer Buddies or Healthy Lakes grants.
- Acres protected properties
- Number and total acres undeveloped properties exclusive of agriculture, parks or Ridges.
- Well water testing reported for Clark Lake contributing area: coliforms, E. coli and nitrates.
- Logan Creek WAV data

Clarity and water chemistry: Oligotrophic. Secchi depth readings increased after zebra mussels found in 2008 but are now relatively stable.

No E. coli contamination noted in Clark Lake beach monitoring.

Well water testing for the presence of coliforms in Clark Lake contributing area did not show any persistent trends over the last three years. There were no wells with E. coli contamination in any of the years.

Well water testing for nitrates in the Clark Lake contributing area did not reveal any that exceeded the safety level. One section had a slight elevation and another two had modest elevation. One area on the south west edge of the watershed suggests a persistent, but not dangerous, elevation.

No watershed environmental issues have been reported by the designated monitor.

The last update to the land use data from the county was in 2017. The shift in agriculture from grazing to row crops in the watershed is a threat. So is the presence of fields in the northern section used by CAFOs ("factory farms").

Development in the watershed is not tracked but a survey of the county GIS map in the near Clark Lake area revealed 87 undeveloped or forestry dedicated private lots totaling 444 Acres. This does not include the Ridges 176 A or Whitefish Dunes properties north of WD 190 A.

3 New homes or increased buildings were noted but none on lots that were empty in 2020.

The GIS map did not reveal any excess percent impervious surface lots around the lake.

Reports from members about increased density of aquatic macrophytes along Logan Creek and into Clark Lake suggested a need for further study. Plant samples were collected in the spring and early summer. Water nutrient levels (nitrates and phosphorous) were collected in Logan Creek at Hwy 57 and at Sunny Slope road. This study did not reveal any new concerns compared to historic data.

Degradation of many bulrush beds from 2006 was confirmed both by density studies and the 2018 all lake mapping study. The next density study is scheduled for 2022 and the all lake map in 2024.

A small bulrush transplant study was started in 2020 at the west side demonstration project. These plants seem to have been lost in a storm in 2021 but we will search again in 2022.

The lack of littoral water depth variation is adverse to micro and macro flora and fauna. Dam readings are no longer routinely monitored but estimations at the boat launch can be made using a nomogram. Summer levels were usually above the DNR permit.

Only a few reports of shore damage from ice shoves.

Rip rap is common around the lake. A brochure with recommendations to use native plants in the rip rap was distributed in 2020 but it does not appear that specific plans to install native plants with the rip rap is very common.

Near shore use: observations continue to reveal scouring from boats especially along the south shore.

The 2020 35 foot buffer survey: 56 properties responded with 17 of the respondents (29%) noting a 35 foot buffer. This year 7 members enrolled in "Buffer Buddies" a program to support each other in the establishment of small native plantings.

Boating corridors through the bulrushes or other emergent vegetation are suggested but not marked on maps or by buoy.

An all member survey in 2019 revealed an increase in size of motors. Random observations at the ramp confirm many large day boater motors.

There continues to be a high number of daily boaters, with an estimate of over 2100 for the second year in a row. The threat of transport of aquatic invasive species (AIS), pollution, bottom disruption and aquatic plant damage all increases with the number of transient boaters. The mix of motor and non-motor boats is not known. The last estimation of boater to donation ratio was made in 2018

No Ramp volunteers present and only one day of no contact county support in 2021 for clean boats/clean waters AIS education and trailer inspection.

Known invasive aquatic species in the lake include Eurasian milfoil, zebra mussels, phragmites and purple loosestrife.

Phragmites: Treated 1.85 Acres on 9 lots. We recorded 42.25 volunteer hours and expenses of \$138.73. We used 1.32 G of 10% Rodeo compared to the 5 year average of 1.747 G. The large patch along Clark Lake Drive is being treated and density improved from monoculture to moderate or sporadic. The dense patches from 2020 along the NE shore of East Bay are now only sporadic but another dense patch was found just south of those. Other areas of repeat treatment are sporadic or sparse. The northeast corner of the lake had some sporadic plants but they were all native phragmites.

No starry stonewort were reported in the most recent DNR survey in Clark Lake.

The Door County Invasive Species Team received a grant to inventory and treat three specific species in Door County (purple loosestrife, non-native bittersweet vine and European marsh thistle). They inspected properties and began treatment around Clark Lake of purple loosestrife and thistles. There are also reports of invasive jumping worms in the area.

Swimmers itch reported again in 2021.

This small skin parasite relies on water fowl for part of its lifecycle. Another part relies on near shore crustaceans. Chemical treatment has not been successful in the long term but studies suggest controlling near shore water fowl populations can help. Healthy near shore bulrush and taller onshore grasses, as recommended by the natural shore project, could discourage geese and reduce the risk.

Fishsticks one site installed 2021. No plans for additional sites in 2022.

Fish barriers were installed at the dam as prescribed by DNR.

Measures source and links

Citizen monitor : [Clark Lake citizen monitoring report](#)

E. Coli beach monitoring site: <https://www.theswimguide.org/beach/8609>

DNR Clark Lake summary site: <https://dnr.wi.gov/water/waterSearch.aspx>
<https://dnr.wi.gov/water/waterDetail.aspx?key=18070>

WQVC google site: <https://sites.google.com/view/claa-water-quality-committee/home>

WQVC google site Bulrush density: <https://sites.google.com/view/claa-water-quality-committee/bulrush/bulrush-density?authuser=0>

DNR Clean Boats/ Clean Water data:

<https://dnr.wi.gov/lakes/invasives/WatercraftSummary.aspx?landing=10019499>

Environmental monitors: board minutes.

Ice damage in the spring. Member observation.

Phragmites: WQVC google site: <https://sites.google.com/view/claa-water-quality-committee/phragmites?authuser=0>

Annual estimate of day use boats 3*(Total fees/daily fee)

Member impression of near shore use: member observation

Land & Water Resource Plan: Door County Soils & Water report

Door County and local well testing results

UW-SP <https://www.uwsp.edu/cnr-ap/watershed/Pages/WellWaterViewer.aspx>

UW-O : [2021 ERIC Results](#)

Logan Creek data WAV [SWIMS Hwy 57](#) [SWIMS Sunnyslope](#)