



Lake George Park Commission

Bruce E. Young
Chairman

Dave Wick
Executive Director

2019 Lake George Asian Clam Lake-Wide Survey: Final Report

September 12, 2019

Dave Wick, LGPC Executive Director

Year 2019 marked the eighth year of the lake-wide survey to track the internal spread of invasive Asian Clams (*Corbicula fluminea*) within Lake George. Asian clams were first discovered in Lake George in 2010 at Lake Avenue Beach in the Village of Lake George. Asian clams can reproduce exponentially and cause negative ecological and recreational impacts to a waterbody. The Lake George Asian Clam Task Force was created in 2010 to address this emerging threat, consisting of agencies, nonprofits, and municipal leadership around the Lake George watershed.

2019 Lake-Wide Survey Methods

The LGPC conducts the organization of this annual survey, with a range of volunteers from around the region. Participants from agency and nonprofit staff plus private individuals with an interest in the lake spent a combined 200+ hours of time conducting this survey. The survey work includes sieving (like panning for gold) through all sandy areas throughout the shoreline of Lake George to find any new populations of this invasive mollusk. If any clams are found which appear to possibly be Asian clam, they are brought to the Darrin Freshwater Institute for confirmation.

Two boats were utilized in this year's effort:

- LGPC Tritoon (four days)
- LGPC Marine Patrol (three days)

The shoreline was divided up into sections that were assigned to each boat for the day, with the responsibility of surveying the area resting with the Captain. When a sandy area was identified (preferred habitat), the survey crew on the boat entered the water and took several sieves depending upon the size of the site. Small sites might only require as few as 20 sieves, while large delta areas can include as many as 500 or more sieves. This year's survey was conducted and completed over the period of four days (August 26, 29, 30, and September 5).



Key 2019 Findings

This year's lake-wide survey identified three new discrete sites of Asian clams in Lake George, as follows;

- Fort Ann Beach (Fort Ann): only one clam found out of 100 sieves, clams likely in deeper water
- Still Bay Resort (Lake George): 1 to 3 clams found in each sieve
- Sun Castle Resort (Lake George): 10+ clams found in each sieve

This brings the total number of Asian clam sites to 27 separate locations throughout the lake, mostly in the southern basin on the more developed western shoreline which has many sandy areas. All known sites are summarized in a table below and identified on a map in this report, provided by the Lake George Association.

Brief History and Current Status

Over the period of six years (2010-2015) the Task Force researched state of the art management methods and attempted to eradicate any identified clam populations in the lake. These efforts mostly consisted of covering the affected lake bottom with 'benthic barriers' (similar to pool liner material), sandbags and rebar to eliminate these populations by lowering the oxygen levels. This was a method long-employed in Lake Tahoe following extensive research. The Lake George benthic barrier control efforts from a percentage basis were highly effective (96-100% mortality in most cases). Wherever if a site did not achieve a 100% mortality rate, they rebounded fairly quickly. Even in sites where no clams were found the year after treatment, they were identified in small populations the next year.

The repopulation of treated sites, according to research from Darrin Freshwater Institute, is likely due to microscopic and buoyant juvenile clams being present outside of the treatment areas. These clams in the near proximity to the treated sites ultimately repopulate those treated sites over time. After considerable expense yet ultimately unsuccessful management efforts, in 2016 the Task Force decided to halt barrier treatments but continue research into their biology, potential lake impacts and potential future treatments if warranted. Given that Asian clam control and eradication efforts cost upwards of \$80,000 per acre, the cost of treating Asian clam affected areas lake-wide is cost-prohibitive and logistically beyond the current ability to successfully manage through currently known methods.

Combining all of the known area of lake-bottom that contains the invasive Asian clam in Lake George as of this report, it appears that the total area affected exceeds 150 acres. There is a very strong boom/bust cycle in the Asian clam populations in Lake George at the current time, with some sites retaining high densities and populations, and other sites only a fraction of their densities from previous surveys.

From a positive perspective, at this time there have not been any identified significant recreational or environmental impacts from this species in Lake George, although populations have been expanding throughout the lake and the future remains unclear. A concern from a biological perspective is that the clams most adapted to cold weather conditions are the ones surviving each year, and they are the ones who reproduce the next generation of clams which will also likely be cold-tolerant. After several generations, it is likely that the clams in Lake George will be more cold-tolerant and more likely to survive the cold winters, thus leading to increased populations long-term. Research is ongoing at the RPI's Darrin Freshwater Institute on several facets of Asian clam, and we will continue to monitor long-term trends with this invasive species.

The Commission would like to thank the volunteers who participated in this year's lake-wide survey effort:

1. Dan Stec, Assemblyman
2. Brian Steinmueller, NYS Soil and Water Conservation Committee
3. Jeanine Bieber, Teacher, Lake Luzerne
4. Anne Greene, NYS DEC
5. John Strough, Supervisor, Town of Queensbury
6. Kristen Wilde, Lake George Association
7. Emily Boucher, Lake George Association
8. Steve Danna, Adirondack Community College
9. Kristopher Williams, Capital Mohawk PRISM
10. Lauren Mercier, Capital Mohawk PRISM
11. Steven Pearson, NYS DEC
12. Erin Vennie-Volrath, Adirondack PRISM
13. Carolyn VonSchenk
14. Kathleen Wiley, Paul Smiths College
15. Susie Becker, Paul Smiths College

Lake George Asian Clam Sites (As of 9/12/19) - Color by Year Discovered

	Year Found	Site Name	Location Details
1	2010	Lake George Village	First found at Lake Avenue Beach in Aug 2010. Shepard's Park added in 2011. Site now includes English Brook Delta South, all the way around to the Steel Pier.
2	2011	Middleworth Bay	Includes Treasure Cove, Beckley's, Capri Village
3	2011	Boon Bay	Includes Chelka Lodge and out to Hemlock Point. 8.06 Acres delineated in 2012
4	2011	Norowal Marina	Includes Sawmill Bay Marina, Bolton Boat Rentals Veteran's Park Beach added 2015
5	2012	Diamond Cove	Includes Golden Sands Resort and Blue Lagoon Resort (added to site in 2014)
6	2012	Paulist Fathers	Hwang property south of Paulist Fathers. 0.20 acres in 2012 43°26'14.0"N 73°41'06.5"W
7	2012	Shelving Rock Bay	1.43 acres in Fall 2012
8	2012	Lake Forest	0.94 acres in 2012 Site just to the south at 8940 Lake Shore Drive added in 2017
9	2013	Glenburnie	43°45'49.8"N 73°27'27.8"W
10	2013	South Basin Bay	First located by culvert outfalls adjacent to Cotton Point road, has spread in a limited fashion since
11	2013	Cotton Point	Includes Northeast side of Cotton Point, Cotton Island Bay South, South Beach Association, and Northeast Hemlock Point
12	2013	Sandy Bay	Primarily in the southernmost point, but spread throughout
13	2013	Million Dollar Beach	From cement pier east of Dog Beach to East Brook Delta
14	2014	Jacobi Point	Candlelight Cottages 43°34'27.7"N 73°38'46.0"W

15	2015	North Basin Bay	Basin Bay Association Beach & Rainbow Beach Association beach
16	2015	Rogers Rock	DEC Campground Beach
17	2016	Cape Cod Village	North of Jenkins Brook Delta at Cape Cod Village and the docks just to the north
18	2016	Edmunds Brook	South side of Edmunds Brook Delta north of Juliana Motel Juliana Resort added in 2017
19	2016	Sand Pebble Cove	200 feet of shoreline with 2 stake docks and 2 crib docks
20	2017	Braley Point	Summer Wind Lodge 43°34'01.6"N 73°39'02.5"W
21	2017	Tea Island Bay	Alpine Village 1-3 clams per sieve 43°26'22.1"N 73°42'08.4"W
22	2017	Cramer Point	West shoreline includes the majority of the private beaches Concentration varied 1-6 clams per sieve
23	2017	Lake George Club	1 small clam found 43°29'51.0"N 73°40'29.3"W
24	2018	Hague Brook Delta	Clams found from Hague Motel across the delta up to Trout House Village
25	2019	Fort Ann Beach	One 5mm clam found in 100 sieves, likely more clams out in deeper water. Only surveyed in shallower areas.
26	2019	Still Bay Resort	1-3 clams found per sieve
27	2019	Sun Castle Resort	10+ clams found per sieve

Asian Clam Locations

Lake George, NY

as of September 5, 2019



Known 2010 -2018 sites in black. New sites found during 2019 lake-wide survey in red.