



Lake George Park Commission

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2018 Lake George Asian Clam Lake-Wide Survey: Final Report

August 28, 2018

Year 2018 marked the seventh year of the lake-wide survey to identify any new locations of invasive Asian clams (*Corbicula fluminea*) in Lake George. Asian clams were first discovered in Lake George in 2010, and considerable effort and cost have gone into aggressive efforts to eradicate and/or control this invasive species. Left unchecked, Asian clams can reproduce exponentially and cause negative ecological and recreational impacts to a waterbody. The Lake George Asian Clam Task Force was created to address this threat, consisting of agencies, nonprofits, and municipal leadership around the Lake George watershed.



2018 Lake-Wide Survey Methods

The LGPC conducts the organization of this annual survey, which had the benefit of more than 20 people who signed up to participate. Participants ranged from agency and nonprofit staff to private individuals with an interest in the lake, who spent a combined 250+ hours of time conducting this survey (many volunteers worked more than one day).

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.

Four boats were utilized in this year's effort:

- LGPC Tritoon (four days)
- LGPC Marine Patrol (three days)
- Lake George Waterkeeper Boat (two days)
- DEC Fisheries boat (one day)

The shoreline was divided up into sections that are assigned to each boat, and it was the responsibility of the boat's captain each day to survey that area of shore. 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 20,21,23, and 24) Weather was excellent for each day, and the crews conducted full day surveys at all sandy sites throughout the lake. Sites with known Asian clam populations were surveyed to determine the general population densities.

Key Findings

This year's lake-wide survey identified one new site of Asian clams in Lake George, although it is a very large site. Asian clams were discovered on both the south and north sides of the Hague Brook delta. On the south side of the Hague Brook delta they were observed at the Hague Motel Beach and at the Town of Hague Beach. On the northernmost extent of the delta, Asian clams were observed at Trout House Village Beach.



The number of clams at the three Hague sites identified through sieving was very low, but it is extremely likely that there are clams present throughout the entire Hague Brook delta area, which is approximately 20 acres in size. The closest existing known Asian clam site is Lake Forest Association which was discovered in 2012. Lake Forest Association is only approximately 1/3 of a mile to the south of the Hague Brook delta. Given the close proximity and the six years since discovery of that site, it was anticipated that the Hague Brook delta would eventually be occupied by Asian clams. Thankfully, no other new Asian clam sites on Lake George were identified through this year's lake-wide survey.

This brings the total number of Asian clam sites to 24 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.

Current Status

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 120 acres. Given that Asian clam control and eradication efforts cost upwards of \$60-80,000 per acre, the cost of treating Asian clam affected areas lake-wide is cost-prohibitive and logistically beyond the current ability to successfully manage.

The most recent Asian clam control/eradication effort was in 2015 at Rogers Rock campground in the Town of Hague. This effort was seen as a success, as the following year no clams were discovered following extensive efforts. However, in 2017, LGA staff conducted another comprehensive survey of this site and noted that clams were again present in this location. Given the high cost of treating such sites (more than \$100,000 for two acres of treatment for Rogers Rock) and the difficulty of guaranteeing eradication, treatments using benthic barrier are largely on hold at this time. The control efforts from a percentage basis have been highly effective (96-100% mortality in most cases), but wherever even a small population of clams remain, they tend to repopulate quickly. There is a fairly 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.

Out of the 24 known sites, the ones with the highest current Asian clam densities as of this survey are:

- Million Dollar Beach (Lake George) average 20 clams per sieve
- South Beach Association (Bolton) average 10 clams per sieve
- Cotton Island (Bolton) average 10 clams per sieve
- Shepherd Park (Village LG) average 5 clams per sieve
- English Brook Delta (Village LG) average 5 clams per sieve

At this time, there have not been any 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 everyone who has participated in this lake-wide survey effort, as it is critical to helping ensure identification and potential management of this invasive species on Lake George. We also thank the many involved funding organizations and agencies for providing the necessary resources to address this threat to the best of our abilities.

Dave Wick
Executive Director
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Lake George Asian Clam Sites (As of 8/28/18) 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	Bralely 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

