



2023 Lake George Asian Clam Lake-Wide Survey: Final Report

September 8, 2023

Dave Wick, LGPC Executive Director

Background and History

Year 2023 marked the twelfth 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. These invasive clams live just below the surface of sandy areas in the lake and can reproduce exponentially (millions of clams per acre) and cause negative ecological and recreational impacts to a waterbody with dense populations.

To address this emerging threat immediately following its discovery in 2010, the Lake George Asian Clam Task Force was created. This partnership consisted of agencies, nonprofits, and municipal leadership around the Lake George watershed. For several years, the Task Force worked together in a concerted effort to eradicate localized populations of this invasive species, by installing plastic matting and sandbags over the infested area to smother the clams. This technique was developed in Lake Tahoe and showed great promise on Lake George.

Over the period of seven years (2010-2016), large scale lake bottom matting efforts in Lake George over dozens of acres of Asian clam populations resulted in very high mortality rates of the clams under the mats (96-100%). It appeared that this methodology would allow for control and perhaps even eradication of this invasive species in the various locations where they were discovered. Almost two million dollars were spent on these physical control efforts and concurrent scientific studies over this time period. However, over time, those managed areas which saw almost complete eradication ultimately rebounded with new clam populations. These benthic matting efforts were abandoned in 2016 due to high cost and the effort's inability to eradicate all clams in any given location. The Asian Clam Task Force largely disbanded in 2017 as there was no longer a need to coordinate these large-scale eradication and control efforts. The Lake George Park Commission continues to maintain an annual survey of this invasive species, and keeps track of any new scientific studies or management efforts that may be occurring elsewhere.



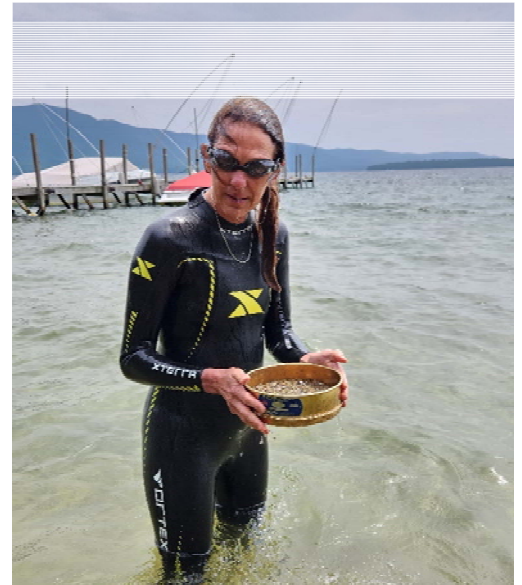
Asian clams (Corbicula fluminea)

Annual Lake-Wide Survey

The purpose of the Commission's annual lake-wide survey is to get a sense of how the clam populations are spreading throughout the lake, and the general population densities of known locations. In low densities, these invasive clams seem to have no impact on Lake George. In much higher densities (thousands of clams per square meter), there is long-term concern about potential water quality impacts and impacts to beach areas from excessive dead clam shells.

The Commission organizes and conducts this annual survey with assistance from partners and volunteers. 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, and checking known sites for changes in clam densities. A minimum of 50-100 sieves were taken at each site visited, with a maximum of 200 sieves at larger sites.

The Commission's 27' tritoon work boat was utilized in this year's effort, with the survey conducted over a period of five days visiting dozens of sites around the lake (see pages 4-8). Survey sites are primarily sandy substrate, which is the clams' preferred habitat. This year's survey dates were August 9, 10, 11, 14 and 17. The results of each site investigated are included at the end of the report.



Tammara VanRyn, Director of the Adirondack Park Invasive Plant Program (APIPP), one of the many volunteers for the Commission's 2023 survey

Key 2023 Findings and Observations

1. This year's lake-wide survey identified six new discrete sites of Asian clams in Lake George:
 - a. Arcady Bay, Town of Hague
 - b. Private beach, Sentinel Pines Road, Town of Hague
 - c. Ticonderoga Public Beach, Town of Ticonderoga
 - d. Timberland Cottages Beach, Town of Bolton
 - e. Pioneer Village Beach, Town of Bolton
 - f. Orcutt Bay, Town of Lake George
2. This brings the total number of Asian clam sites to 38 separate locations throughout the lake, mostly in the southern basin on the more developed western shoreline which has many sandy areas.
3. More new Asian clam locations were identified this year than in any previous year.
4. Most of the known Asian clam sites visited this year showed similar densities of clams in 2022, although each site varies in density each year. Asian clam populations at each known site go through boom and bust cycles, for unknown reasons.
5. Clams clearly do not like the regular disturbance associated with active beaches. Within beach rope lines, clam densities are very low or non-existent. However, just outside of the rope lines where no activity occurs, the numbers dramatically increase. This pattern is shown at every location surveyed.
6. It remains unknown how clams are becoming present in some of these more remote areas, although boat anchoring is the most likely transport vector. Boaters who have anchored in affected areas and don't clean their anchors well can unknowingly transport these clams to new locations.
7. The good news: even after several years of expanding Asian clam populations, these populations have not yet appeared to significantly impact Lake George ecology, water quality or recreational use.

As noted in prior reports, the long-term concern from a biological perspective remains 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 more 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. However, this has not presented itself to be the case thus far.

The Commission would like to thank the volunteers and partners who volunteered with the Commission on this year's lake-wide survey effort:

1. Jeanine Bieber, Lake Luzerne Science Teacher
2. Jeremy Farrell, RPI/Darrin Freshwater Institute
3. Tammara VanRyn, Adirondack Park Invasives Program
4. Dan Stec, NYS Senator, 45th District
5. Sam Blake, LC/LG Regional Planning Board
6. Katie Bruening, LG School Board
7. Diedre Hill, Local resident
8. Josh Campbell, NYS DEC
9. Erik Reardon, NYS DEC/LCBP



A typical sieve showing live Asian clams (beige color) and dead clam shells (white color) from a sandy location in Lake George

Lake George Asian Clam Sites (As of August 2023) - Color by Year Discovered

	Year Found	Site Name	Town
1	2010	Lake George Village	Village LG
2	2011	Middleworth Bay	Diamond Point
3	2011	Boon Bay	Bolton
4	2011	Sawmill Bay	Bolton
5	2012	Diamond Cove resorts	Diamond Point
6	2012	Paulist Fathers	Lake George
7	2012	Shelving Rock Bay	Fort Ann
8	2012	Lake Forest Acres docks	Hague
9	2013	Glenburnie launch	Putnam
10	2013	South Basin Bay	Bolton
11	2013	Cotton Point	Bolton
12	2013	Sandy Bay	Queensbury
13	2013	Million Dollar Beach	Lake George
14	2014	Jacobi Point	Bolton
15	2015	North Basin Bay	Bolton
16	2015	Rogers Rock	Hague
17	2016	Cape Cod Village	Hague
18	2016	Edmunds Brook	Diamond Point
19	2016	Sand Pebble Cove	(Lake George)
20	2017	Braley Point	(Bolton)
21	2017	Tea Island Bay	(Lake George Village)
22	2017	Cramer Point /Green Harbor	Lake George
23	2017	Lake George Club	Diamond Point
24	2018	Hague Brook Delta	Hague
25	2019	Fort Ann Beach	Fort Ann
26	2019	Still Bay Resort	Diamond Point

27	2019	Sun Castle Resort	Lake George
28	2020	Twin Bay, Carey's Lakeside	Bolton
29	2021	182 Homer Point Road	Bolton
30	2022	NE Blairs Bay	Putnam
31	2022	Browns Point-ADK Camp	Putnam
32	2022	Clay Island	Bolton
33	2023	Arcady Bay	Hague
34	2023	Sentinel Pines Road	Hague
35	2023	Ticonderoga Public Beach	Ticonderoga
36	2023	Timberlane Cottages	Bolton
37	2023	Pioneer Village	Bolton
38	2023	Orcutt Bay	Lake George



Lake George
Park Commission

Asian Clam Locations

Lake George, NY

as of September 11, 2023



2023 Lake George Asian Clam Survey – Sites Visited and Densities

White rows have no clams present

Yellow colored rows have existing Asian clam populations (2022 and earlier)

Red rows are new sites identified this year (2023)

Sites: Clockwise from Sabbath Bay Point to Northwest Bay (Yellow are sites with Asian clams)	Clams (Y/N)	Range of clams per sieve 2022	Range of Clams per sieve 2023
1. West of Sabbath Bay Pt. Beach	N		
2. Sabbath Bay Pt. Beach	N		
3. 40.313, 30.505 Small delta 20 yards south of Bass Bay	N		
4. Silver Bay YMCA	N		
5. Arcady Bay	Y	N/A	1-15
6. Sentinel Pines Road	Y	N/A	2-10
7. Cape Cod Village	Y	8-10	Same
8. David Darrin property	Y	1-3	Same
9. Lake Forrest Acres	Y	3-5	Same
10. Hague Motel	Y	5-40	2-10
11. Hague Beach	Y	0-5	Same
12. Hague Brook Delta	Y	5-30	Same
13. Trout House Village	Y	5-10	2-5
14. Forest Bay	N		
15. Rogers Rock	Y	0-10	Same
16. LG Steamboat	N		
17. Ticonderoga Beach	Y	N/A	0-8
18. Blair's Bay north private beach	Y		
19. N. of Glenburnie Fire Launch private beach	N		
20. Glen Burnie Fire Launch	Y	15-20	2-10
21. Camp ADK	Y	0-5	Same
22. Gull Bay Beach	N		
23. Agnes Island-residence by beach	N		
24. Washington Co. Beach	N		
25. Huletts Landing Marina	N		
26. Hulett's Community Beach	N		
27. Shelving Rock Bay	Y	1-5	Same
28. Fort Ann Beach	Y	10-15	Same
29. Sandy Bay	Y	0-25	Same
30. Paulist Fathers	Y	10-20	Same
31. Sand Pebble Cove	Y	1-30	2-6
32. Million Dollar Beach	Y	0-3	Same
33. Dog Beach	Y	5-10	Same
34. English Brook Delta	Y	5-75	5-20
35. Tea Island Bay	Y	1-5	Same
36. Sun Castle	Y	0-1	Same
37. Still Bay/Green Harbour	Y	1-3	6-20
38. Diamond Cove	Y	3-60	0-7
39. Orcutt Bay	Y	N/A	1-5
40. Edmunds Brook	Y	2-5	Same
41. Little Harbor/Beckley's	Y	10-15	0-4
42. LG Club	Y	3-5	Same

43. Beach in N Boon Bay	Y	5-7	Same
44. Hemlock Pt in Boon Bay	Y	5-7	Same
45. S Beach area of Cotton Pt	Y	30-40	0-6
46. Road to Cotton Pt.	Y	10-15	Same
47. Porters Cottages	N		
48. Blue Water Manor	Y	4-5	Same
49. W. Fish Point(Basin Bay)	Y	2-3	Same
50. Homer Point (Rd)	Y	0-2	Same
51. Clay Island	N		
52. Huddle Bay Beach	N		
53. Sweetbriar Island	N		
54. Carey's Lakeside Lane	Y	2-3	2-10
55. S. Anchorage Rd	N		
56. Rogers Park	Y	3-4	0-10
57. The Chateau on the Lake	N		
58. Finkle Brook Delta	Y	1-5	0-1
59. 4 Braley Pt, Bolton, Private residence (171.8-1-18)	Y	10-20	Same
60. Candlelight Cottages	Y	0-20	0-10
61. Pioneer Village	N	N/A	2-10
62. Timberlane	N	N/A	1-5
63. North side of Indian Brook Delta	Y	0-10	Same
64. Lagoon Manor	Y	0-1	0-30

*** END ***