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2021 Lake George Asian Clam Lake-Wide Survey: Final Report

September 16, 2021

Dave Wick, LGPC Executive Director

Year 2021 marked the tenth 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. Asian clams live just below the surface of sandy areas in the lake and can reproduce exponentially and cause negative ecological and recreational impacts to a waterbody with dense populations. 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.

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. These efforts resulted in very high mortality rates of the clams under the mats (96-100%), but over time, those areas 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 a location.

The purpose of this ongoing 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.

2021 Lake-Wide Survey Methods

The LGPC 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. A minimum of 20-30 sieves were taken at each site visited, with a maximum of 100-200 sieves at larger sites.

The Commission's tritoon boat was utilized in this year's effort, with the addition of one day on the LGA's new pontoon boat. The survey was conducted over a period of five boat-days total, visiting dozens of sites around the lake. Survey sites are primarily sandy substrate, which is the clams' preferred habitat. This year's survey dates were August 16 (two boats), 20, 24 and 25.

Results of each site investigated and each day of the survey are included at the end of the report.

Key 2021 Findings

1. This year's lake-wide survey identified only one new discrete site of Asian clams in Lake George, at Homer Point in the Town of Bolton. This brings the total number of Asian clam sites to 29 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.
2. Most of the known Asian clam sites visited this year showed similar densities of clams in 2020. Asian clam populations have been seen to have boom/bust cycles on Lake George.
3. As can be seen on the included map, the southwest shore of Lake George has a large number of adjacent sandy areas, many of which now have clams present. It is more likely that a site on the southwest shore has Asian clams than it does not.

4. The northeast shore of Lake George remains Asian clam free, from Ticonderoga down to Shelving Rock Bay, with the exception of Blairs Bay in Glenburnie. That site has not expanded to surrounding areas, likely due to the considerable amount of bedrock in the area and lack of suitable habitat.
5. The Fort Ann Town Beach has greatly increased its density in two years. In 2019 only one clam was found in more than 100 sieves. Now the density is 10-15 clams per sieve, an exponential increase.
6. Even after several years of expanding Asian clam populations, the only sites that exhibit dense beds of dead shells on the surface of the sediments are along the Village of Lake George shoreline, in and around docks. These areas are less impacted by foot traffic than beaches are, and Asian clam populations tend to be greatly reduced in areas with heavy sediment disturbance. The Village of Lake George was the first Asian clam site found in Lake George in 2010.

As reported last year, there still have not been any identified or reported significant recreational or environmental impacts from this invasive species in Lake George, although populations have been slowly geographically expanding throughout the lake and the future remains unclear. The 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. 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 and partners who participated in this year's lake-wide survey effort:

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Lake George Asian Clam Sites (As of September 2021) - 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**

Map courtesy of the Lake George Association

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2021 Lake George Asian Clam Survey – Sites Visited and Densities

Sites: Clockwise from Sabbath Bay Point to Northwest Bay (Yellow are sites with Asian clams)	Clams (Y/N)	Range of clams per sieve
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	N	
6. Biggest boathouse on lake	N	
7. Cape Cod Village	Y	8-10
8. David Darrin property	Y	1-3
9. Lake Forrest Acres	Y	3-5
10. Hague Motel	Y	5-40
11. Hague Beach	Y	0-5
12. Hague Brook Delta	Y	5-30
13. Trout House Village	Y	5-10
14. Forest Bay	N	
15. Rogers Rock	Y	0-10
16. LG Steamboat	N	
17. Ticonderoga Beach	N	
18. Blair's Bay north private beach	N	
19. N. of Glenburnie Fire Launch private beach	N	
20. Glen Burnie Fire Launch	Y	15-20
21. Camp ADK	N	
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
28. Fort Ann Beach	Y	10-15
29. Sandy Bay	Y	0-25
30. Paulist Fathers	Y	10-20
31. Sand Pebble Cove	Y	1-30
32. Million Dollar Beach	Y	0-3
33. Dog Beach	Y	5-10
34. English Brook Delta	Y	5-75
35. Tea Island Bay	Y	1-5
36. Sun Castle	Y	0-1
37. Still Bay/Green Harbour	Y	1-3
38. Diamond Cove	Y	3-60
39. Edmunds Brook	Y	2-5
40. Little Harbor/Beckley's	Y	10-15
41. LG Club	Y	3-5
42. Beach in N Boon Bay	Y	5-7
43. Hemlock Pt in Boon Bay	Y	5-7
44. S Beach area of Cotton Pt	Y	30-40
45. Road to Cotton Pt.	Y	10-15
46. Porters Cottages	N	
47. Blue Water Manor	Y	4-5

48. W. Fish Point(Basin Bay)	Y	2-3
49. Homer Point(Rd) – New Site in 2021	**Y**	**0-2**
50. Clay Island	N	
51. Huddle Bay Beach	N	
52. Sweetbriar Island	N	
53. Carey's Lakeside Lane	Y	2-3
54. S. Anchorage Rd	N	
55. Rogers Park	Y	3-4
56. The Chateau on the Lake	N	
57. Finkle Brook Delta	Y	1-5
58. 4 Braley Pt, Bolton, Private residence(171.8-1-18)	Y	10-20
59. Candlelight Cottages	Y	0-20
60. Pioneer Village	N	
61. Timberlane	N	
62. North side of Indian Brook Delta	Y	0-10
63. Lagoon Manor	Y	0-1
64. Bay at Walker Point, NW Bay-5730 Lake Shore Dr(141.00-1-16)	N	
65. 2 Walker Pt Lane(141.00-1-15)	N	