# Asian Clam Surveys Owasco Lake July 31, 2015 and September 9, 2015



## Thanks to:

- Ed Wagner, Michael Didio and Bill Phillips, divers
- Drew Snell, Owasco Lake Watershed Specialist
- Tim Schneider and Gillian Sloan, Owasco Lake Watershed Inspectors
- Bruce Natale, Michele Wunderlich and Gary Duckett, WQMA
- Andy Campbell and Andrew Rotko, Fleming Fire Department
- Boat provided by Fleming Fire Department
- Partially funded by FLLOWPA



## Asian Clams

- Were discovered in Owasco Lake in September 2010.
- Juvenile clams can reach maturity in 3-6 months or when about 6-10 mm in size.
- Asian clams can reach 10-30 mm in size during their first year depending on food availability and temperatures.



### Asian Clams

- Lake George researchers have observed that winter ice contact with sediments killed Asian Clams.
- Winter 2014-2015: Due to the gates installed 2013-2014 on the State Dam, the City had more flexibility to adjust the lake level in the winter of 2014-2015.
- Lowest lake level during a cold snap: Owasco Lake was at 709.66 feet (above sea level) with low temperatures of -2 to -7 degrees F.

#### 



## East Side off of Pavilion Beach, 2015

- Clams were only found in samples 21, 22 and 24.
- No sample had more than 3.
- 83% were less than 10 mm. In 2014, over 50% were larger than 10 mm.
- No clams were larger than 12 mm. 40% were larger than 16 mm in 2014.
- Poor survival of adults at 2014-2015 winter freeze depths.



### West Side off of Deauville Island

- Transect to shore.
- 95% were smaller than 10 mm. Similar to 2014. Largest clams found in same area (1, 2 and 4).
- All samples had less than 6 clams. One sample in 2014 had 35 clams.
- Poor survival of adults at 2014-2015 winter freeze levels.



### West Side off of Deauville Island, 2015



## Size Frequency Plot of All Asian Clams



#### Asian Clams, Size Vs Water Depth, 2015



### **Quantitative Samples**

- 2011: 1018 clams per m<sup>2</sup>
- 2012: 429 clams per m<sup>2</sup>
- 2013: 1462 clams per m<sup>2</sup>
- 2014: 1018 clams per m<sup>2</sup>
- 2015: 511 clams per m<sup>2</sup>
- Lake George: up to 6,000 per m<sup>2</sup>



## Observations

- The clams on the east side have gone from mostly being older clams, to being young of the year.
- Almost all the clams on the west side were young of the year.
- On the west side, it appears young of the year clams are transported into the shallow areas by wind and wave action since there are no mature clams there to reproduce.
- Some occasionally denser population areas but less dense than Lake George.
- Drawdown appears to cause 100% mortality of clams in areas where the substrate was exposed during the winter.
- Is there another reason why there appear to be few older clams?

### Darrin Freshwater Institute Research

- A parasite has been discovered in the clams in Lake George and research is being conducted to determine whether it was brought in with the clams, is native to the lake, and is detrimental to the growth, reproduction and survival of the clams.
- County Planning staff took clam samples last week and sent them to Darrin Freshwater Institute for research and DNA analysis.

#### Area South of Burtis Point



 Asian clam shells found but no living clams confirmed during sampling.

