

September 16, 2022

# 2022 Bearse-Wequaquet Fanwort Removal Project

In August 2022 New England Aquatic Services commenced a project to Suction Harvest Fanwort (*Cabomba caroliniana*) from Bearse Pond, Wequaquet Lake, and Gooseberry Cove. The scope of the project was for 30-7 hour days of removal for a total of 210 hours of harvesting time as well as a diver lead survey to provide harvesting locations to the crews. 98 hours were allocated to Bearse Pond, 70 hours were allocated to Gooseberry Cove, and 42 hours were allocated to Wequaquet Lake. The project was completed utilizing two suction harvesting boats and increased hours each day to increase efficiency and decrease the actual duration of the project. In total 225 bags of Fanwort were removed from Bearse Pond and 299 bags of fanwort were removed from Gooseberry Cove, and 92 bags of Fanwort were removed from Wequaquet lake for a total of 616 bags. 616 bags is roughly the equivalent of 1,232 five-gallon buckets of material.

The project was started utilizing divers to lead a survey to identify Fanwort locations for removal. As work was completed throughout Bearse Pond and Gooseberry Cove in past years and those locations were well known to the crews the focus of the survey was on Wequaquet Lake proper where data had not been available before. Very Light growth was found in the area of point 11561, spread out over a large area. Individual plants were picked to prevent large patches from establishing. Some very dense spots were located to the immediate east and the south of the area we refer to as the Northwest Cove. Light growth was also found in the Northeast Cove. The survey results were very encouraging as we did not know what to expect in areas around the lake where work was not performed in the past but we did not find massive growth areas like have been found in Bearse and Gooseberry Cove. No significant amounts of growth were found in the southern end of the lake.

### **Suction Harvesting**

Suction Harvesting is a process of physical plant removal during which a diver will pull out a plant by the roots and send it to the surface via a 4" suction hose. The material is deposited into mesh "onion bags" and the water returns to the lake. Our boats are designed to run two divers at once with their own dedicated suction hoses. The key to success in a Suction Harvesting program is consistency. While likely we will not eliminate a plant species from a given area in one season of work, the goal is to reduce density. Over time that area will become less and less dense, and more manageable. The technique for removal in both Bearse, Wequaquet, and Gooseberry Cove was to return to the areas we have performed removal in previous years first. After these areas were cleared we then searched and removed areas of growth which had not been addressed in the past.

### **Bearse Pond**

The 98 hours of work, or "14 days", in Bearse Pond was 2 days, or 14 hours, more than in 2022. In the attached images I have provided a map showing the points from the 2022 project along with the map of work from 2021. It is very clear to us that the work is providing very positive results. The map images can be hard to discern because of the density of points, which can refer to removal of an individual plant or a dense patch of plants. Consistently we have found that the areas we have put in effort removing in the past several years continue to diminish in density and size year after year. The three areas that we use as major markers for progress in Bearse Pond are the Northwestern Cove seen on the 2022 Map with point 4821, The Inlet Cove seen on the 2022 Map with point 960, and the Holly Point Road section seen from points 1069-916. The progress in the Northwestern cove of Bearse Pond can be seen on the Bearse Pond maps, if compared between 2022 and 2021 it is clear how little work needed to be done in that area this year. 4 Days were spent there in 2019, in 2022 it only took approximately half of a day. The Inlet Cove is another area which is easily highlighted by the gps waypoint concentration as needing much less attention than it once did. The Holly Point Road section was an area identified in 2020 to have a considerable amount of very large patches that ran the length of that section of Bearse Pond. This area has provided us with the most confidence that the methodology is working as we have seen an incredible decrease in the growth of plants and size of beds. It is

still scattered over a large area and therefore time consuming but this area was cleared much more quickly which allows for new areas which had not been addressed due to time constraints in the past to be cleared as well. The difference in growth types between these previously unharvested areas and those that have been worked consistently in the past was quite obvious. Fortunately as the dense beds become thinner, the rest of the lake has the opportunity to be harvested and the plant growth diminished. 225 bags of Fanwort were removed from Bearse Pond.

#### **Gooseberry Cove**

The scope for the work in Gooseberry Cove was 70 hours or "10 Days". Gooseberry Cove has also shown great progress as a result of the harvesting efforts performed over the last several years. The 2022 effort in this area of the lake focused on the areas shown on the map below. The focus of the work was on the southern side of the cove where very large and dense beds of Fanwort were found. This area had been lightly addressed in 2021 while the majority of effort was made in a more northerly section of the Cove which can be seen on the 2021 map below. The more Northerly areas, where a lot of work had been focused in 2019, 2020, and 2021, were much less dense. The decision was made to focus the majority of the effort on these other areas which have much higher density to help get ahead of that growth. Areas where there were once scattered plants and small patches in the east end of the cove did not have much growth if any. Gooseberry is an area that certainly requires continued concentrated effort in the future. 299 bags of plants were removed from Gooseberry Cove.

### **Wequaquet**

The scope for the work in Wequaquet was 42 hours, or "7 days". The most encouraging area in Wequaquet is the area referred to as the Northwestern Cove. This has been the sole and primary focus of work in the past years on Wequaquet proper, and very minimal work needed to be performed in this area in 2022. 2018 required 3 days of removal effort, 2022 required 1-2 hours to hunt and pick remaining plants.

The survey work provided the crews with locations of plants. The areas to the immediate east and south of the Northwestern Cove had some large and very dense patches. These were the worst areas we found in Wequaquet proper. The choice was made to put the main focus on those thicker patches. The point labeled 11561 is in the middle of an area which stretches across the lake for a few hundred yards that has random small plants periodically growing. The area around 11561 was harvested but rather than spend so much time hunting and picking small individual plants, the denser, more immediately threatening patches were removed. These scattered areas should definitely be considered for work in the future and resources allocated there to prevent them from becoming the same large and dense patches we see elsewhere. 92 bags of Fanwort were removed from Wequaquet Lake proper.

#### **Conclusions**

We continue to see very positive results from the Suction Harvesting efforts in these three locations. In many cases the goal of Suction Harvesting maintenance programs is just to stop continued spread of invasive species, but in Wequaquet and Bearse we are seeing reduced plant populations, smaller and fewer beds of plants, and less scattered growth throughout the areas worked.

While we did not get the opportunity to address every area of growth in the lakes this year, I recommend the same scope for the maintenance project in 2023. Additional time could be utilized but I believe that the number of hours provided in this scope does put us into a good position to keep continued forward momentum.

### **Bearse 2022**



### **Bearse 2021**



# Gooseberry 2022



### **Gooseberry 2021**



# **2022 Northwest Cove-Wequaquet**



# **2021 Northwest Cove-Wequaquet**



# **2022 Wequaquet-New Locations**







