

Starry Stonewort Control-Project Description

The objective of this project is to control the spread of newly discovered infestations of the highly invasive macroalgae starry stonewort (*Nitellopsis obtuse*, SSW).

SSW has a negative impact on aquatic ecosystems, forming dense mats that crowd out native aquatic plant species that provide food and shelter for invertebrates and fish. Displacement of native aquatic plant species by SSW also interferes with fish spawning and nesting sites. Dense infestations can grow to reach the waterbody surface, blocking sunlight and reducing levels of dissolved oxygen required by other aquatic organisms. SSW also has negative impacts on recreation, as dense mats make boating, fishing, and swimming difficult. SSW is spread by fragmentation and also by tiny bulbils in which it reproduces and get trapped in the sediments. There is currently no known means of eradication of SSW and therefore, prevention of spread is critical.

In 2020, it was discovered that SSW had migrated from the inlet Sugar Creek, into Keuka Lake! A special task force was formed to research best practices to manage and control SSW and secure any available funding. In January the task force met with NYS Department of Environmental Conservation (DEC) and local officials to determine what would be necessary for compliance and permitting. By early spring we had come up with a plan of attack, applied for and received a \$10,000.00 grant from the Finger Lakes Partnership for Regional Invasive Species Management (FLPRISM) and are now implementing the project.

The main elements of this project are Surveillance, Benthic Mats (trial) Harvesting, Algaecide treatment, and Education. This project will be conducted with the guidance and approval of NYS DEC, the

Town of Jerusalem, FLPRISM and the SSW Collaborative. A final report and video presentation of results will be developed and shared with all our local, regional and state partners to help further research and development of techniques to control SSW.

SURVEY I – mid-June-early July

Kayaks will be employed to search for signs of SSW along the shores of Sugar Creek and outside the mouth of SC in the lake. Kayakers will perform rake tosses to identify the SSW and other aquatic plants. Use of an underwater camera will help determine location and density. Confirmed SSW sites GPS coordinates will be documented by Trimble. Video drone surveillance will also document the sites. SSW and any other AIS will be reported thru iMapInvasives, an online reporting platform thru FLPRISM.

SIGNAGE/BOUY- mid-June- early July

Warning buoys will be placed in the lake to keep boaters and fishermen off away from the SSW sites to help prevent spread by swimmers or watercraft. Educational signage will be posted at the boat ramp to warn of Aquatic Invasive Species (AIS) in general and SSW in particular and “Clean/Drain/Dry” watercraft practices.

BENTHIC MATS - early July

Marine Blue, a company out of Canandaigua will install two-three trial benthic mats in locations to be determined by previous survey along the shore and in the lake. Mats are relatively inexpensive but have unknown effectiveness on SSW.

Diver Assisted Suction Harvesting (DASH) – mid-late July

DASH will be performed by ILM, a company from Illinois, with extensive experience in harvesting AIS. Control of SSW in the lake and creek using DASH will reduce biomass with little disturbance to soft sediments, preventing spread of SSW by fragmentation and/or bulbils. The

operation will be permitted by the DEC. ILM has developed a new innovated harvesting method for SSW. Over the course of 5 days, the ILM team will work off a pontoon boat to remove up to 90% of SSW biomass from the sites identified. The SSW will be hand pulled by divers from the sediments “roots and all” and fed into a suction hose. It is then suctioned up and deposited onto specialized filter trays on the boat above. The first coarse filter tray will be sifted for incidental fish and invertebrates that were caught up which are returned to the water. The SSW bulbils will be sifted out in a secondary tray to be sure they are captured along with the rest of the biomass. The biomass will be transferred into buckets to drain and be transported to shore. On shore the dewatered biomass will be loaded into a truck and transported for composting. The operations will be documented by underwater camera, drone and camera.

SURVEY II – early Aug. at least 2 weeks after DASH

A follow-up survey on kayaks will look for signs SSW regrowth or spread. Again, the sites will be documented by GPS and photography. Rake tosses will be performed to confirm SSW and other AIS which will again be reported to iMapinvasives.

ALGAECIDE – mid-late August

Recent research from the University of Minnesota has indicated harvest of SSW by DASH followed by algaecide treatment was associated with lower bulbil viability and therefore lower regrowth. A copper-based algaecide will be applied to remaining SSW and any new regrowth or spread as identified in Survey II and possibly a follow-up application. The DEC permitted algaecide treatment will be performed by Solitude, a highly recognized and experienced company. The application will be targeted to the SSW infestations only and is not harmful to other organisms. Use of the water for drinking or recreational purposes after application will not be limited.

SURVEY/MONITORING III – late August-mid-Sept.

Monitoring of Sugar Creek and the lake will continue to document signs of SSW regrowth and/or other AIS. These final surveys will document the success of the remediation efforts and provide a base for follow-up next season.

REPORTING – monthly June-Sept. November Final Report

Monthly updates will be written and reported in the e-newsletter, printed newsletter, social media and the press. After each remediation effort, a report will be issued highlighting important information. A final report consisting of a poster and video presentation will be issued to the FLPRISM, the NYSDEC and regionally to the other Finger Lakes by the end of November.