

An Update on Lake Gaston's Aquatic Plant Management Program

With the world around us looking very different than it did just a few short months ago, the management of Lake Gaston's aquatic plants moves ahead on schedule. Surveys were completed in the fall of 2019 and treatments have already begun on one of the most noxious species at the lake!

During the fall of 2019, over 60 volunteers with the Lake Gaston Association (LGA) worked with North Carolina State University's (NCSU) Aquatic Plant Management Program to survey the 300 miles of Lake Gaston shoreline. This combined effort resulted in over 6,000 individual sampling sites that were used to determine the location and abundance of all aquatic plant species throughout the lake. This information was also combined with surveys conducted by NCSU to develop the upcoming year's management plan for Lake Gaston's nuisance species, *Hydrilla* and *Lyngbya*.

As in past years, this year's management plan has been developed and approved at multiple levels. First the plan was reviewed by the Lake Gaston Technical Advisory Group, composed of members from state government, academia, and Lake Gaston stakeholders. Next the plan was reviewed by the Lake Gaston Stakeholder's Group, composed of members from the surrounding area that have a vested interest in the lake. And finally, a review and approval was conducted by the Lake Gaston Weed Control Council to fund the upcoming treatment plan.

Lake Gaston's aquatic plant management program has focused heavily on *Hydrilla* since the 1990's. *Hydrilla* is a highly invasive submerged aquatic plant that once covered thousands of acres within the lake. NCSU began actively managing the aquatic plants within the lake in 2012, and has successfully reduced the acres of *Hydrilla* from 1,541 to a reported 160 acres in 2019! This success is due to an integrated management plan that combines herbicide treatments with biological control, in the form of Grass Carp stockings. Due to the low reported acreage of *Hydrilla* in 2019, the 2020 treatment plan will include 80-160 acres to be treated with herbicide and will not require additional Grass Carp to be stocked this year.

Unfortunately, as *Hydrilla* acreage has decreased across the lake, another noxious species has been steadily increasing. *Lyngbya* is a filamentous cyanobacteria that produces thick, black surface mats along the shoreline during the warm summer months. These mats have negative impacts on recreational usage and overall aesthetics of the lake, as well as, the lake's ecosystem. AND due to the production of taste and odor compounds it literally stinks! In 2012, *Lyngbya* was reported in 8% of the fall survey sampling sites and covered an estimated 452 acres lake-wide. The survey conducted last fall (2019) reported *Lyngbya* in 17% of sampling sites covering an estimated area of 1,029 acres.

Unlike *Hydrilla* management where there are known protocols for effective control, *Lyngbya* management in large systems is still in the developmental stages. NC State University is currently working on developing a management protocol by performing experimental treatments for *Lyngbya* in Lake Gaston. Since 2017, three product companies have been used in different experimental treatment areas across the lake. The first round of treatments for 2019 occurred in early July and were applied monthly through October. These treatments were evaluated by tracking changes to *Lyngbya* on both a large and small scale, by exploring how treatments affect the mats as a whole, as well as, the basic cellular function. Even though there was no treatment that effectively controlled *Lyngbya* completely, two products displayed better control and were selected for further evaluation in 2020. Previous

treatment areas will remain in the trial for 2020, however products and product rates have been adjusted from previous years.

Lyngbya treatments for 2020 have already begun! One goal for this year was to begin treatments early in the year before *Lyngbya* began putting on growth. Therefore, the first round of treatments were applied in late April and will continue on a monthly basis through the summer. Monthly monitoring of the treatments will also continue throughout 2020.

If you have any questions regarding aquatic plant management at Lake Gaston please email aquaticplants@ncsu.edu.

Submitted by: Jessica R. Baumann, Extension Associate for Lake Gaston with NC State University's Aquatic Plant Management Program