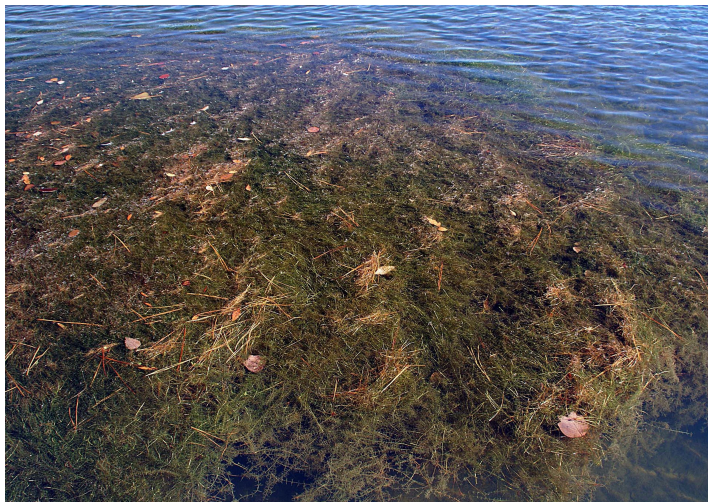


Lake Pinehurst Management Plan for Hydrilla and Other Noxious Aquatic Weeds 2010



Overview

Hydrilla is widespread throughout Lake Pinehurst. It is growing around the entire perimeter of the lake and in the depths of the lake up to 30 feet deep. Hydrilla is not native to North Carolina, so it was brought to Lake Pinehurst by a boat that had been in hydrilla-infested waters somewhere else. We first discovered hydrilla in August 2008. We had the North Carolina Division of Water Resources survey our lake, verify the level of hydrilla in the lake, and develop a management plan specifically for Lake Pinehurst. The control of hydrilla in Lake Pinehurst is feasible and this is the primary objective of our annual aquatic weed management program.

The control of hydrilla will not be successful without the participation of all the owners and properties around the lake. If we are not able to control the hydrilla, it will spread across the entire lake and produce dense hydrilla mats across the surface of the lake. These hydrilla mats will “kill” the lake. There will be no boating, fishing or swimming. The irrigation intake pipes in the lake will be clogged and irrigation from the lake will not be possible. These hydrilla mats will become a breeding habitat for mosquitoes and other pests. No one will want to live on a lake infested with hydrilla and property values will drop dramatically.



We have formed an equal partnership with the Pinehurst Resort to address this problem, including sharing the expense to control the hydrilla. Our plan has been to increase non-reproducing grass carp by 1,000 in 2009 and 1,000 in 2010 and then maintain this level. Carp eat their body-weight in hydrilla every day and are the most cost-effective method of controlling the hydrilla. In addition to the carp, we are treating the entire perimeter of the lake (28,600 feet) with a contact herbicide in July and October to keep docks and shoreline clear of hydrilla. Untreated areas will continue to spread to the rest of the lake. ***Success requires the participation of every property owner around Lake Pinehurst.***



There are additional noxious aquatic weeds in Lake Pinehurst other than hydrilla. Our contractor, North Carolina Lake Management, Inc., inspects the lake at least every month of the year and treats the perimeter of the lake for these other noxious aquatic weeds twice a month during the active growth season.

Controlling Hydrilla

Controlling the hydrilla infestation with herbicides is very difficult and costly. A two-pronged aquatic weed management approach that incorporates the use of biological control (i.e. grass eating carp) and chemical control (i.e., herbicides) has been selected, and it will provide relief of this noxious aquatic weed in a cost effective manner. This approach was developed for Lake Pinehurst by the North Carolina Division of Water Resources. Hydrilla has become a real danger to the lakes and ponds of North Carolina and the state has an aggressive program in place to help communities control or eradicate hydrilla in all infested waters.

Biological control was initiated by stocking the lake with 1,000 triploid grass carp in the spring of 2009. Using grass carp has proven to be a highly effective method of controlling hydrilla in North Carolina waters. Immediate results were not expected, but we have seen evidence that the carp are beginning to reduce the hydrilla in the lake. A significant reduction in the amount of hydrilla is not usually seen until the second or third growing season. A stocking density of 12 to 15 fish per vegetated acre is sufficient to deplete hydrilla from a typical lake in North Carolina.



Our plan is to stock 2,000 carp in our 200 acre lake, which is about 15 fish per vegetated acre. The second 1,000 fish were added in April of 2010. Starting in 2011, we plan to stock the lake with about 200 grass carp each year. It is best to stock carp over multiple years so as to create a resident population comprised of multiple year-classes (cohorts). Prior to stocking the lake with the carp, a permit to release triploid grass carp is required. The NC Wildlife Resources Commission is the regulatory authority and issues the permits.

Subsequent stockings, after the initial 2,000 carp, are determined by the results of year-end surveys of vegetation and factoring in a normal annual attrition rate for the carp. Supplemental stockings (years 3 and after) should be made to retain the density of 12-15 carp per vegetated acre until hydrilla no longer appears in the year-end lake surveys.



In addition to the biological control of hydrilla in Lake Pinehurst, we added two hydrilla herbicide treatments (chemical control) to our annual aquatic weed management program. These treatments are around the entire perimeter of the lake and are needed to keep docks, waterways, and irrigation pipes free of hydrilla. The chemical control is effective in water up to seven feet deep. Twice each growing season, the hydrilla is treated with a herbicide known as “diquat.” It is not harmful to fish or humans, but it does require an irrigation restriction of about seven days. The properties around the lake are notified

prior to any applications of herbicides requiring irrigation restrictions. Additional spot treatments to highly infested areas may be performed on an as needed basis. As the carp begin to reduce the hydrilla, it is our hope that the chemical control of hydrilla can be reduced to a single treatment each year and then to spot treatments when needed.

Aquatic Weeds Other Than Hydrilla

Our aquatic weed management program is active all year. From April through November, our contractor visits the lake twice a month to both inspect the lake and to apply the appropriate herbicides to the actively growing aquatic weeds. In North Carolina, there are more than 60 different aquatic weeds. There are at least 20 different herbicides that treat aquatic weeds. Not all grasses in the lake are weeds. Many grasses are beneficial to the lake and are required to provide needed habitat to the game fish in the lake. It is important to identify the aquatic weeds that are present and to select the most appropriate herbicide(s).



This requires an experienced aquatic weed management firm. The weeds (other than hydrilla) that must be treated include algae, egeria, water milfoil, salvinia, and parrot feather. There may be a few others.

When treating the lake for these aquatic weeds, the contractor may not be spraying the entire perimeter of the lake. These weeds may be visible in some areas of the lake, but not be resident in other areas of the lake. The treatments are only done on visible aquatic weeds that react to the herbicide in use. Sometimes, visible aquatic weeds are not sprayed because the herbicide in use may not be effective on these weeds. They will be treated on a subsequent visit. It is important for the property owner to monitor his/her dock and bulkhead and let the Lake Management board member know if it appears that too many weeds still exist.

This document is extracted from a message published by Tom Reedy, President, Lake Pinehurst Association in 2010