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HOME AND GARDEN COLUMN

HYDRILLA

Osceola County was awarded a $2.881 million dollar grant from the Environmental Protection Agency (EPA) to demonstrate new and alternative methods to control hydrilla and hygrophila over the next four years in the Upper Kissimmee Chain of Lakes (KCOL) and other water bodies in the county. Hydrilla and hygrophila are two very invasive submerged aquatic plants that grow very quickly in the warm waters in Florida. They were introduced to the United States in the 1950's and 60's by the aquarium trade to be used as aquarium plants. Unfortunately, the plants were released and have become a very large and expensive problem for Florida.

Hydrilla and hygrophila are very difficult to control. Both are spread very easily by fragments that break off from the mother plant that float away to infest clean waters. While hygrophila does not currently create the same problems as hydrilla in Osceola County, we currently do not have good control measures for hygrophila. We have a number of different control measures for hydrilla control, but we are slowly losing these.

One of the big problems with controlling hydrilla in the KCOL is that it has become resistant to fluridone, a herbicide that used to provide cost-effective and long-term hydrilla control. Certain areas in the KCOL are very shallow and current Florida DEP guidelines discourage shallow water herbicide applications because hydrilla can recover rapidly after treatments.

Mechanical harvesters can also be used to remove hydrilla, but rapid re-growth in shallow water, fragments that can infest other portions of the lake, and cost and hydrilla disposal issues have discouraged the use of mechanical harvesters. Triploid grass carp provide cost-effective hydrilla control; however, once released, these fish survive for many years and would control hydrilla as well as beneficial native plants.

In order to release grass carp, a permit must be obtained and barriers must be set up to ensure the carp do not get out of the specified water body. The barriers alone cause a problem because it would be virtually impossible to ensure that the grass carp would be confined to Lake Toho and not escape to Lake Kissimmee or even to Lake Okeechobee.

While there are many management techniques that we can use to remove hydrilla from water, there is still one small problem: turions. Turions are small potato-like survival structures that can remain dormant in the sediment layers for years until conditions are right for germination. Turions cause a big management problem because herbicides typically do not control these dormant survival structures. Hydrilla can produce literally millions of turions per acre.

The hurricanes of 2004 significantly reduced the level of hydrilla in the KCOL. Hurricane winds and waves controlled the existing hydrilla and higher lake levels and dark, murky water prevented the rapid recovery of hydrilla. Even though the storms provided a form of environmental control, hydrilla turions survived and were the source for hydrilla's ability to make a strong comeback in the lakes.

A herbicide application on Lake Toho's North end will allow us to evaluate the longevity and effectiveness of the herbicides endothall and diquat on hydrilla in shallow waters. This treatment is planned to stop the production of new turions to improve long-term management. We will also take this opportunity to evaluate how long the shallow water treatment will last by visiting sample sites and collecting data on a regular basis.

So, what can we do in the long-term? Osceola County currently has contracts with the University of Florida and the SePRO Corporation to demonstrate both new and exisiting technologies that we can use to better control hydrilla, hygrophila and other aquatic invasive weeds. We are evaluating new herbicides that are being developed for use on aquatic plants. We are also evaluating existing herbicides and different application methods, rates, etc. to improve their effectiveness on aquatic weeds.

Researchers are traveling to the native ranges of hydrilla and hygrophila to find biological control agents, like insects, that control these plants in their natural environment. SePRO is evaluating a fungus called *Mycoleptodiscus terrestris*, or Mt. This fungus attacks hydrilla and essentially makes the hydrilla sick and more vulnerable to herbicide treatments or other control measures. The ultimate objective is to provide cost-effective and selective control of the target invasive plants while encouraging the establishment and growth of native species.

The University of Florida/IFAS Osceola County Extension Office has a major role in this grant. We are responsible for managing the grant and keeping you updated on the research that is being conducted right here in Osceola County. We also will be providing education for residents on aquatic weeds and how we can prevent their spread in our waterways. We also want to help residents understand the importance of managing aquatic weeds and how we manage them in our lakes. You can check the status of the grant and what is happening by going to our website at: http://plants.ifas.ufl.edu/osceola/index.html

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