CADDO LAKE NEWS

NEWSLETTER OF THE GREATER CADDO LAKE ASSOCIATION OF TEXAS

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October 2014

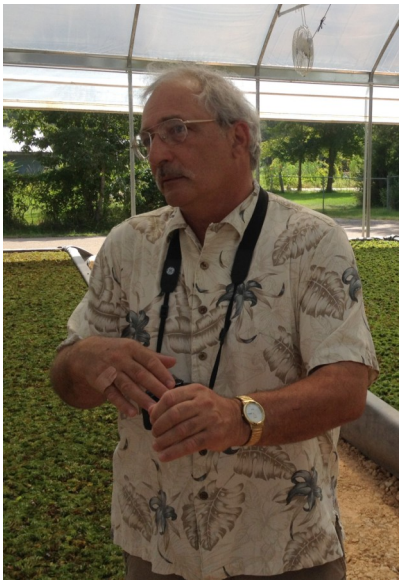
Morley Hudson Weevil Greenhouse Begins Operation at Shady Glade

By Stella Barrow

From left to right, District 9 State Representative Chris Paddie, Jeff Dunnier (friend of the late Morley Hudson), GLCA President Daren Horton, Coco Hudson, and Harrison County Commissioner William Hatfield

On August 20, the Morley Hudson Greenhouse was officially opened with a gathering of volunteers, GCLA Board and members, local and state officials, and an astounding number of well-wishers.

Almost a year ago to the day at the 2013 Annual GCLA Labor Day BBQ, the fund raising began for the world's first high production weevil greenhouse. Though delays were encountered, the volunteer crew persevered, and the greenhouse became a reality. The new facility will provide large quantities of the insects for distribution around Caddo Lake for natural biological control of the invasive giant salvinia plant.



Greenhouse Director Lee Eisenberg talks with visitors about the new facility

The crowd of nearly 200 was addressed by GCLA President, Daren Horton, State Representative Chris Paddie, Harrison County Judge Hugh Taylor, and Harrison County Commissioner, William Hatfield. Representative Paddie

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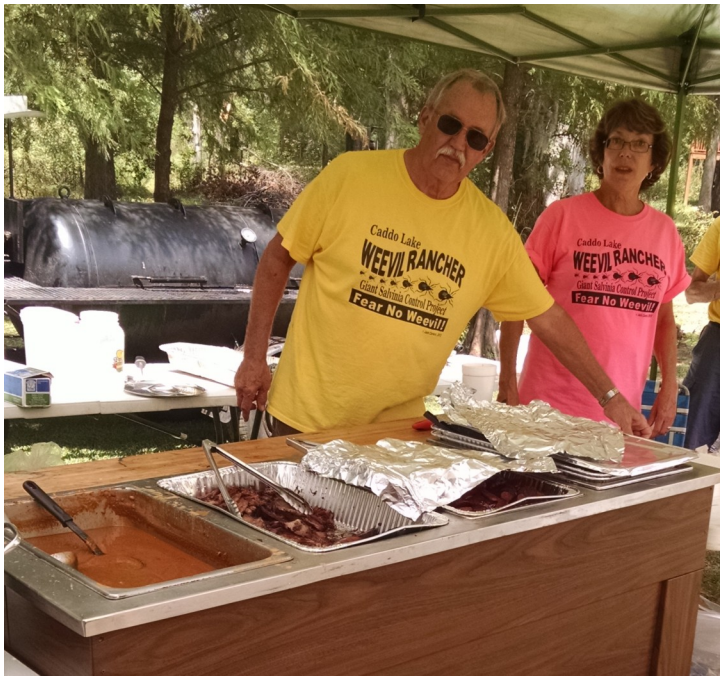
GCLA Annual Barbeque Raises Funds for Raising Weevils

By Jan Cook



GCLA members Ted Barrow and Susan Sedberry serve barbeque

The Annual GCLA Labor Day barbeque was held on Saturday, August 30. Robert Speight and Doug Heard cooked brisket and sausage for most of Friday, then several GCLA members gathered at Crip's Camp at 6:00 pm to set up the tent, tables and chairs. On Saturday morning, hungry folks started lining up before 11:00. GCLA Board members and volunteers served 225 BBQ plates and sold Weevil Rancher t-shirts. GCLA Secretary Jan Cook and her team put together an amazing variety of silent auction items, and 67 attendees either renewed their membership or joined as new members.

The event was a big success, raising $1,100 for the organization, and this year, the only thing we ran out of was cole slaw!

Grass Roots Organizing

By Daren Horton,
President Greater Caddo Lake Association

The importance of grassroots programs has grown tremendously over the past two decades. Extensive grassroots efforts are undertaken by almost every major association or group seeking to achieve a legislative goal or address a community need.

The days are long gone when crucial legislative decisions were made by a few key legislators meeting with lobbyists behind closed doors in "smoke filled rooms." Today, legislators base most of their decisions on what they hear from their constituents. Those groups able to generate large scale grassroots pressure are the most effective at implementing their legislative agenda.

Our project at the Morley Hudson Greenhouse has been the quintessential model of a Grassroots Effort. The funds we have raised to date have come from County Government, City Government, State Agencies, grants from federal programs and local organizations but, most importantly, from concerned citizens who refuse to sit and wait for "SOMEONE" to solve the problem.

At our last board meeting, I was asked to put time on the agenda for Mr. Ken Shaw to present us with a donation. Those of you who do not know Ken should understand Mr. Shaw has been involved in most every important effort on the lake for many years. He has spent many hours at our facility helping with construction. He has been chairman of the Cypress Valley Navigation District, served on the Greater Caddo Lake Association board, and the Greater Caddo Lake Area Chamber of Commerce. Suffice it to say, Ken is very involved in everything that is Caddo Lake and a true leader in our community. When Ken began to read the list of his neighbors

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The GCLA Strikes Back!

In the Battle Against the Invasion of the Giant Salvinia

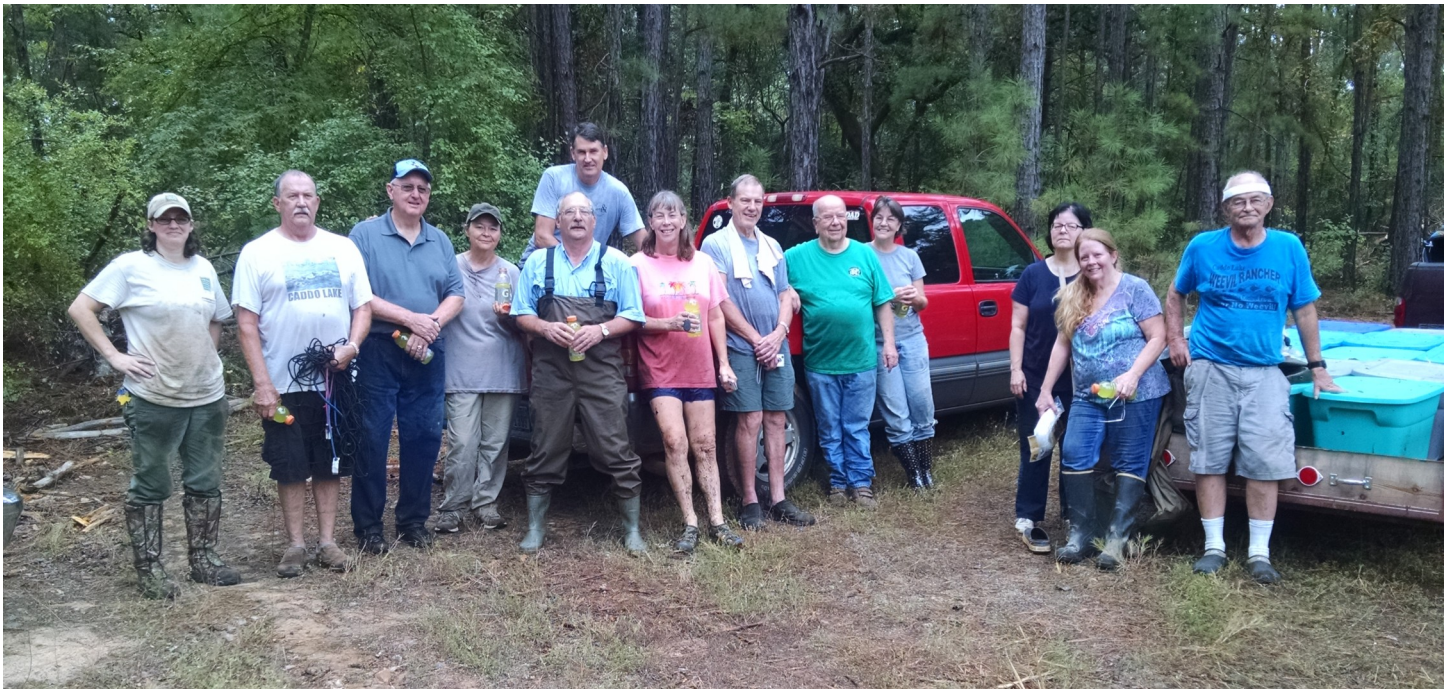
By Donna McCann

What's that, a war raging? Well, yes, we are in the midst of a battle to save our beloved Caddo Lake from the worst invasive plant in anyone's memory. And we finally have a weapon that may defeat the enemy for good.

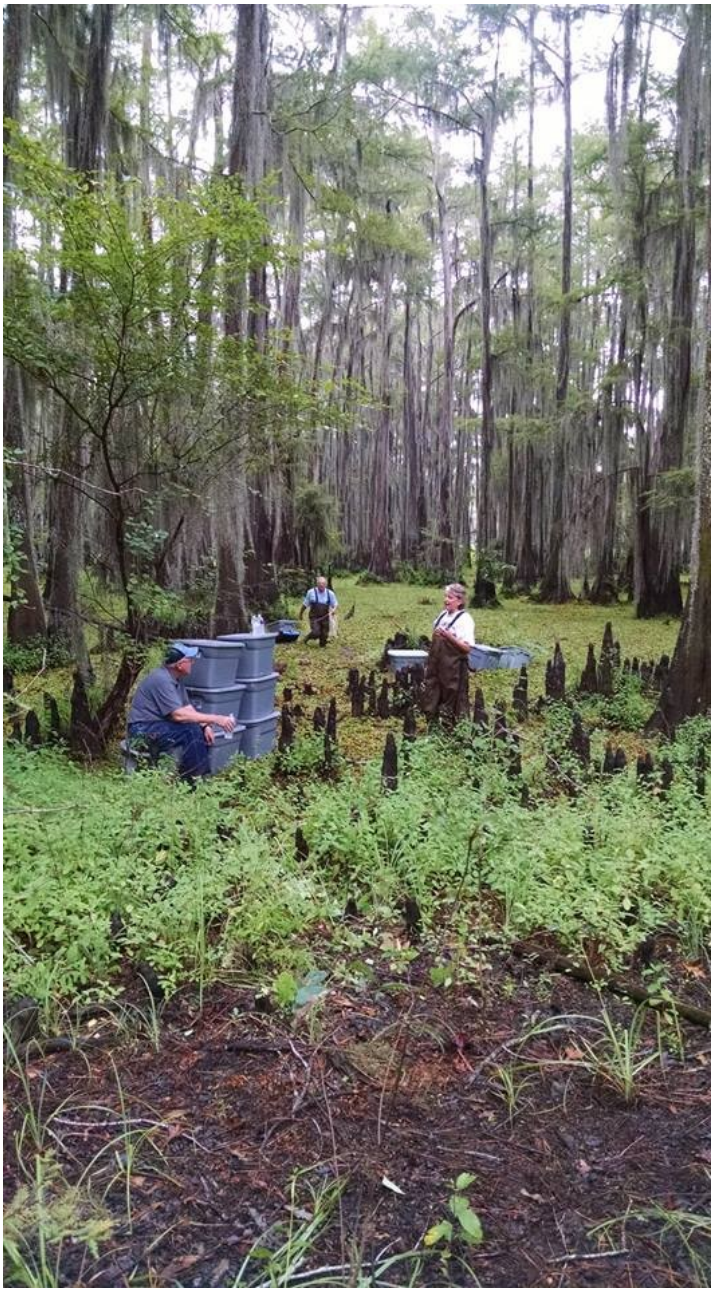
At the 2013 GCLA Labor Day barbeque, all funds raised were dedicated to the goal of building a facility to mass produce salvinia weevils. On September 12, 2014, only one year later, 19 sleepy volunteers gathered at 7:00 am at the newly completed and dedicated Morley Hudson Weevil Greenhouse to conduct the first mass release of weevils. The Weevil Infested Salvinia (WIS), now turning brown, was transferred with pitchforks into 72 18-gallon totes, loaded onto pickup trucks and trailers, and transported to Willowson Woodyard, on the southwest shore of Carter Lake on the Wildlife Management Area (WMA).

The totes were distributed along the shore using a UTV supplied by the Texas Parks and Wildlife Department on the WMA. Each one was pulled by hand into the shallow water to a depth of two-three feet, 30 to 50 feet from shore, where it was emptied then refilled with fresh salvinia to be taken back to the greenhouse to grow the next crop of weevils. By all accounts from Lee Eisenberg, Greenhouse Director, approximately 35,000 weevils were released. It was a phenomenal event for the new greenhouse.

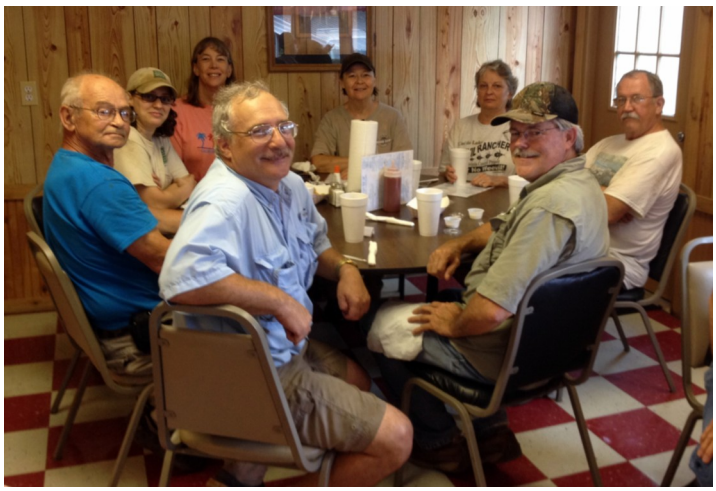
The entire operation took about five hours, and in spite of a lot of sore muscles and scratches from briars in the woods on shore, we hope to repeat the process when the next batch of weevils is ready in six to eight weeks. The call for help will go out by email and social media, and if enough volunteers are willing and able, our experience from the first release should allow the next one to be completed in less time.



First Release Crew from left to right: Stephanie Price, Ted Barrow, Ernest Knott, Patti Webb, Gary Bowles, Lee Eisenberg, Donna McCann, Frank Gadman, Pat Noon, Kay Watson, Nancy Summers, Jan Cook, Terry Echols, with Holly Noon behind the camera.



Ernest Knott, Lee Eisenberg, and Stella Barrow move tubs of weevil laden salvinia plants out into the shallow water of Willowson Woodyard, a back-water area on the southwest side of Carter Lake



Tired weevil ranchers relax with a celebratory lunch at Shady Glade Café after a successful roundup and trail drive out into the swamp

Fear No Weevil

How we came to love a tiny black bug from Brazil

By Donna McCann

After giant salvinia (*salvinia molesta*) was first discovered in Caddo Lake in 2006, it soon became apparent that this plant would have to be controlled somehow, or it would destroy the ecosystem, home to so many species of flora and fauna. In the ensuing years, various alternatives were tested, including the use of herbicides, mechanical harvesting, and biological control through parasitic insects.

Mechanical harvesting was only possible in open water, and Caddo has many acres of cypress forest where such machinery cannot reach. Spraying with herbicides, administered by Texas Parks and Wildlife and the Cypress Valley Navigation District, is effective on a local and temporary basis, but it is expensive, and it also cannot eradicate the salvinia in the most inaccessible locations, which Caddo has an abundance.

A consensus emerged among scientists and concerned citizens that a biological control was needed. The salvinia weevil (*cyrtobagous salviniae*) is a natural parasite to the giant

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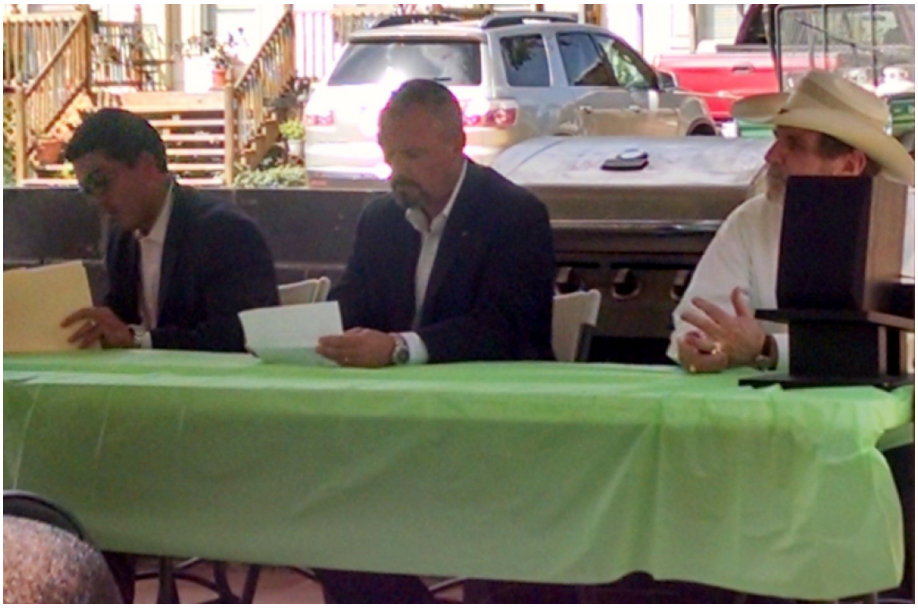
read a proclamation declaring August 20, 2014, the official opening of the greenhouse. Jeff Dunnier, a trapper and longtime friend to the Morley Hudson family, shared fond memories of Mr. Hudson with the group. The family provided a significant financial contribution to the eponymous greenhouse project as a way to honor a man who loved Caddo Lake.

Refreshments were served prior to the ribbon cutting. Coco Hudson, daughter of Morley Hudson, and Daren Horton cut the ribbon to reveal the sign for the greenhouse. Impromptu tours of the greenhouse were given by Lee Eisenberg, Greenhouse Director.

It was a very exciting day for the Greater Caddo Lake Association, The Caddo Biocontrol Alliance, and all the future fans of Texas' only natural Lake.



District 9 State Representative Chris Paddie, Harrison County Judge Hugh Taylor, and Harrison County Commissioner William Hatfield review their remarks for the opening of the greenhouse.

The salvinia weevil nursery contains 10 large shallow "ponds", each about a foot deep, and 4 smaller ones in a temperature controlled environment. Water is replenished from the lake, which allows direct transfer of plants and insects with no acclimatization issues. In the picture, the green areas are healthy, thriving giant salvinia plants. The brown area has been seeded with weevils, and they have begun to lay eggs in the plants, which ultimately kills them. Dead plants begin to decay and sink to the bottom. The weevils crawl from plant to plant as their population increases. Within six to eight weeks, the weevils can kill all the plants in one of these ponds. If they don't receive any fresh plants, either by moving them out into a salvinia-infested area of the lake, or by bringing fresh plants into the greenhouse, the population will crash.

(Grass Roots Continued from page 2)

around Pine Island Pond who had donated to our weevil program, all the board members and myself listened in awe. Families and individuals donated amounts of $500, $1,000.00, $2,000.00 and even one anonymous donation of $15,000.00. When the donations were totaled, $24,500.00 was raised by Ken from the folks around Pine Island Pond who so dearly love our beautiful lake.

It is our opinion that the giant salvinia will, most likely, never be eliminated from Caddo Lake. Volunteer efforts and fundraising can only go so far. This program will eventually need an influx of money from State or Federal sources and a partnership with those entities to assure long term success.

The GCLA has a three year plan. We will go to Austin when the legislature gets into session in 2015. With the help of Representatives Chris Paddie and Lyle Larson, we will educate the state about the severity of the problem. We will inform them about our grassroots efforts, the success of the research that has been carried out on the lake and our management plan. We will operate the facility and document the results. We will return with these facts when the legislature meets again in 2017 with the hopes of securing permanent funding.

At this time we have raised enough funds to construct and equip the facility and operate it for about a year and a half. We still need to raise funds to operate the greenhouse for another year and a half to be on track to complete the plan we have developed. Construction is finished and we have conducted our first weevil release. We are moving from the construction phase into a management phase, developing reporting criteria and procedure manuals.

In the coming months we will be urging our members to contact their state legislatures and inform them of the importance we believe the weevils are to the management of the salvinia on Caddo Lake. Elected officials care about what their constituents think, especially those who take the time to communicate their views. Lawmakers need the votes of their constituents to get re-elected. A grassroots program seeks to convince elected officials that there is significant local constituent support for a given policy objective. The support from our members on Pine Island Pond has hardened our resolve. Soon we will need this to carry over to phone calls and letters that will reflect a significant cross section of the community and the large number of voters that support this issue.

We will need money and partners to keep this program going. With those two things, we are confident that long term control of Giant Salvinia in Caddo Lake and other lakes in temperate climates can be achieved.

(Weevil Continued from page 3)

salvinia plant in its native habitat in Brazil. These weevils have been used successfully to limit giant salvinia infestations in other freshwater wetland locales such as southern Louisiana and Florida in the US, and in numerous countries around the world, without harming other plants or animals.

A research program sponsored by Texas A&M University at the Caddo Lake National Wildlife Refuge has been in progress over the past several years to determine if the salvinia weevils could be effective in controlling the spread of the plant that has threatened the very survival of Caddo Lake as we know it. Since both the salvinia plant and its parasitic weevil are adapted to very warm climates like their native temperate zone in Brazil, the balance between plant growth and weevil population over the course of our colder winters in the northern parts of Texas and Louisiana can be disrupted Enough survivor weevils have been found in trial releases to convince the specialists that raising weevils to seed infested areas each spring would ultimately be the best strategy for long term management, with the possibility that over time, natural selection or identification of other subspecies may help the weevil population become better acclimatized to our area.

Lee Eisenberg, now the director of the Morley Hudson Weevil Greenhouse, developed plans for the large scale facility to allow weevils to reproduce so that the population in the lake could be supplemented whenever and wherever needed. The resulting structure, located near the water on the grounds of Shady Glade Resort, contains multiple large shallow tanks where fresh salvinia can be brought in to feed the hungry weevils, which are happy to reproduce in the lower leaves and rhizomes of the plants, ultimately killing them. The key goal of the Morley Hudson Weevil Greenhouse is to mass produce weevils and release them in large numbers as soon as the weather permits in the spring.

Time will tell. Support groups for other lakes in similar climates, such as in northern Louisiana, are watching our progress, hopeful that our efforts will pay off, since their beloved lakes are at risk as well.

Giant Salvinia covers boat road C in Carter Lake on 9/23/14 in spite of an aggressive TPWD herbicide spraying program this summer, because the salvinia plants drift with the wind. If the weevil program is successful, it offers the advantage that the weevils travel with the plant, wherever it goes.

Why We Fight

A Paean to the Preservation of Caddo Lake

by Donna McCann

Caddo Lake supports an amazingly diverse mix of plants, in large part because unlike all other large lakes in Texas, it includes so many acres of shallow freshwater wetlands, with a water level that varies with the seasons. The environment is just right to support one of the world's largest bald cypress forests, with the humidity it takes to foster a lush growth of Spanish moss hanging from the trees, creating what we all recognize instantly as the iconic Caddo Lake scene.

When I am asked why I never tire of exploring Caddo Lake and have multiple boats with which to do so, I tell people that it is as if you are discovering a new lake every season of every year. The land features and boat roads may stay mostly the same, but every spring, as the cypress trees are sprouting leaves, the perennial aquatic plants begin to grow. Over the space of a few months, the open waters of the still, shallow areas of the lake become covered with vegetation of some sort. But there is no certainty about which plants will steal the scene. No other lake in my experience changes so much in so short a time. With an environment so conducive to plant growth, it is no wonder that there is a constant competition for dominance among the species that thrive here. In particular, the aquatic species, both floating and rooted, find the still, shallow backwaters in places like Carter/Back/Clinton Lake, Turtle Shell, or Goose Prairie irresistible.

In some years, vast stretches of water are covered by American Lotus, with their pale yellow blossoms rising on stems up into the air, broadcasting their distinctive, pungent aroma to attract pollinating insects. Sometimes it is the floating white blossoms of another species of *Nymphaea* that dominates, or in some areas, it is a variety with the smaller tight bright yellow buds that seem to never fully open. Since these rooted plants are perennials, the visible emergent part disappears over winter, but reemerges from their extensive root systems in the spring.

The invasive hydrilla, a rooted plant, which thrives in shallow water below the surface, can become so thick at times that travel by powerboat, even on established boat roads, requires frequent stops to clear the strands away. Alligator weed, another invasive rooted plant, forms thick mats that can expand out from the shoreline, making access from shore difficult at times. Alligator weed is also a tertiary plant that can grow on land.

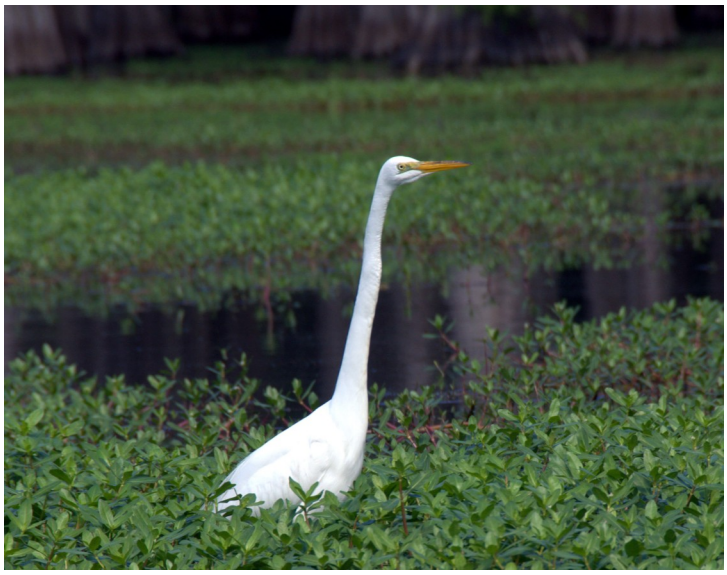
In the battle for dominance, the floating plants have a distinct advantage: they can move quickly - literally wherever the wind blows them. They tend to reproduce rapidly, and they can completely cover the surface to block the sunlight the rooted plants need to thrive.

Of the floaters, duckweed has been a staple of the late summer Caddo visual experience for many years, covering large areas in the still backwaters. As it multiplies, the wind can push the once-thin layer of tiny plants into a greenish brown porridge several inches thick. Though the plant cover looks impenetrable, boating is easy enough, since the plants don't interlock. What seems to be a solid layer simply parts to allow a boat to pass, rejoining in its wake. Boating through duckweed under a canopy of bald cypress and Spanish moss is truly an awe-inspiring experience for a new visitor.

There have been years when it seemed the invasive floating water hyacinth would surely take over the lake, and in spite of the beautiful purple blossoms, the long stems and large leaves fouled propellers, making passage by boat very difficult. GCLA was an active participant in the effort to control this plant.

But of all the plants that have battled one another (and us) for control of the lake, none has compared to *Salvinia Molesta*, the floating fern we call Giant Salvinia. In the summer of 2013, herbicide spraying was no longer enough, and the mats of salvinia were so extensive and thick that navigation between the Big Cypress channel and the rest of the lake became impossible. In fact, by mid July, the main channel in either direction from Johnson's Ranch Marina looked like solid pastureland.

This was our moment of truth. Would we give up and let our beautiful lake slowly turn into a peat bog, or would we band together and commit our time and our money to the fight? For the people who are captivated by the beauty of Caddo Lake, many of whom are members of the GCLA, it wasn't a difficult decision.



A midsummer bloom of duckweed covers the surface of Carter Lake, creating an eerie mood (7/6/2003).

Water hyacinth wins the growth contest in the Turtle Shell area (8/5/2007).

Water lilies dominate the shallow water of the Turtle Shell area this time (7/5/2011).

Endocides for Giant Salvinia Control?

by Robert Speight

Recently, a new alternative for combating Giant Salvinia has been making headlines in our local news.

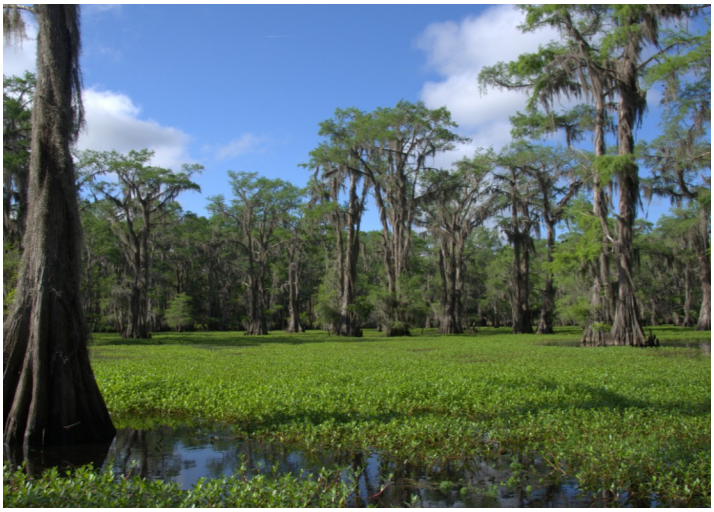
Researchers at Stephen F. Austin University in Nacogdoches are working to develop a new treatment option for Giant Salvinia. They discovered, while working with the plant on Cancer research, that in certain instances dead/decaying Salvinia would actually kill live plant material in their greenhouse. After much trial and error they realized that the plant contained a property called an Endogenous Biocide or Endocide that would actually turn the plant against itself and kill it.

SFA has teamed with the Red River Waterway Commission to do large scale research and testing at a RRWC site in Louisiana. During a recent field day event researchers showed the process by which the endocides are collected from the live plants and then applied to the test plots. Once extracted from the live plants, the endocide is mixed with a surfactant and is sprayed onto the growing Salvinia just as you would spray a herbicide onto the plant. The endocide is a contact killer, meaning it will only kill the part of the plant it touches. If a treated mat of Salvinia is more than one layer thick, then several repeat applications will be necessary.

Another method they are trying is to compress the Salvinia to make a 'brick' and submerge that under a mat of growing Salvinia to kill it from the bottom up. This method works best in small areas such as ponds and canals with limited water inflow.

The research team is working diligently and have a number of time consuming issues to work out and refine, such as finding more efficient ways to extract the endocides and testing them to make sure they will not harm non-target plants, finding the best mixture rates for spray applications, and learning how to produce them in a cost effective manner so they are available in the quantities needed.

Working all these issues out and getting approvals from State and Federal regulators (EPA, TCEQ, TDA, USDA…etc) means it may be years down the road before endocides would be commercially available to be used as a tool in combating Giant Salvinia.



Alligator weed gets a quick start in the spring in the shallow water of Carter Chute before the giant salvinia begin their assault (4/21/2012).

KEEP CADDO LAKE NATURAL!

Join GCLA

Dues are only $10.00 per person per year. This includes membership in The Greater Caddo Lake Association of Texas, plus you will receive our newsletters which are printed on a semi-regular basis; more often if needed. There is no better way to keep up with the issues that concern the lake.

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We will send one newsletter per address, unless otherwise instructed. This allows us to mail copies to our politicians and government entities to let them know how we feel on the issues!

*Your email address is voluntary. It will only be used to keep you informed of developments on the lake. It will not be given or sold to anyone.

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