Choctawhatchee Basin Community Unites Against Unwelcome Weeds
Noxious weeds in Florida are losing the fight to citizens of the Choctawhatchee Basin

Fishermen wearing waders stand chest deep in Big Red Fish Lake, waving at three men passing in a pontoon. The pontoon crew and their cargo – herbicide to treat foreign plants that have invaded the lake – are a common and welcome sight in the coastal dune lakes of the Florida Panhandle.

That's because the community members living around the dozen-plus coastal lakes understand that invasive weed management is necessary to protect native grasses and other critical habitat unique to this region. Many of these residents have joined the Choctawhatchee Basin Alliance, whose broad mission is to protect this vital watershed from threats including storm-water run-off, hurricane-induced erosion, and the invasive plant and animal species that creep into the area.

The invasive plant enemies come in all shapes and sizes. Phragmites stalks tower over docks blocking homeowner views of the water. Torpedograss stands just a foot tall but is an equal nuisance because of its sharp blades and long roots that keep it well anchored along the shoreline. Alligatorweed hugs the sand like a green net, creating both an annoyance and eyesore. And Chinese tallowtree, which was brought into this country as an ornamental because of its vibrant red fall color, has crowded out native plants.

Recognizing the threat, area residents are working with the Basin Alliance and its many partners – including local county officials, utility line managers, university experts, schools and community volunteers. The group developed a multi-faceted vegetation management plan that includes highly targeted herbicide treatments, educational programs and innovative weed-tracking technology.

"We're young in our vegetation management program but so far it's working," said Sarah Kalinoski, Basin Alliance volunteer coordinator. "The main reason is because we were able to get everyone on board from the beginning through outreach and education. Everybody voiced their opinions, concerns and ideas regarding the vegetation plan, and then became part of making it happen."

Like No Place on Earth
Unless you are in Madagascar, New Zealand or Australia, you won't find another ecosystem like that of the Choctawhatchee Basin. Nestled at the edge of the Gulf of Mexico in the western part of the Florida Panhandle, the chain of freshwater lakes is separated from the Gulf only by a narrow band of sand. Big Red Fish and Oyster Lakes are part of this chain.

At times of high water, that sand barrier breaks, and salt water mixes with the fresh, in a process called "outflow." The Gulf water carries with it saltwater animals, plants and fish, making the ecosystem within the lakes even more complex. This dynamic environment, shaped by the winds of hurricanes and the forces of climate, creates a rare and precious asset to global biology.

While the lakes of the Choctawhatchee Basin aren't a huge tourist draw like other areas in Florida, lakefront homes abound in the surrounding communities. Over time, new residents moved in and foundations and seawalls sprang forth along the coast. But, unfamiliar with the ever-changing shape of the lakes and shores, outflow events sometimes resulted in panic. Many new residents and tourists thought the brackish water, colored brown by tannic acids dissolved from organic material, flowing out from the lakes was polluting the sapphire blue gulf, not realizing that these events are simply part of the natural rhythm of the ever-changing sand barrier structure.

While homeowners were becoming comfortable with their new surroundings, invasive weeds were doing the same. Soon community members knew that the invading phragmites, torpedograss, alligatorweed and Chinese tallow had to be stopped, and it would require mobilizing the entire community to get the job done.

Consensus Eases Concerns
People are passionate about the coastal dune lakes ecosystem of the Choctawhatchee Basin for many reasons. Scientists study it to expand their biological understanding; homeowners seek to protect the value of their real estate investment; recreationalists seek to preserve the value of the lakes for fishing and boating; and educators seek to preserve the lake as an example for future generations. This represents just a few of the interested groups that need to be on board for a regional weed control program to succeed.

Understanding this, the Basin Alliance initiated a process through which all stakeholders would have an opportunity to express their needs, their concerns and share in building a solution to the encroaching invasive weed species and other challenges facing the ecosystem.

"We knew that if we got everyone to the table to talk about what they wanted to see happen, and used a democratic process, we could build consensus and get some real work done," Kalinoski said. "We used the TEAM process, which stands for Together for Environmental Assessment and Management, which was developed by University of Florida's Florida LAKEWATCH for situations just like this."

Over a period of two years, Kalinoski and the Basin Alliance team met with a multitude of stakeholders including the Florida Fish and Wildlife Conservation Commission (FWC), lakefront homeowners and university researchers to develop a plan everyone could agree on. The result was a management plan enacted in August of 2008 to manage the treatment of invasive weeds and protect the coastal dune lake ecosystem, while still allowing residents to enjoy their property freely.

The preliminary scientific data was presented to large stakeholder groups, who were then broken into smaller study groups to determine possible weed management solutions. Each person who attended the meeting had an opportunity to share their perspective, and to weigh in on the draft plan. Ultimately, the Basin Alliance, led in part by aquatic weed experts, extension service agents and researchers from several universities, agreed on a plan that included targeted management of the most troublesome weeds using herbicide treatments.

"The discussions we had with this group were really great, and the meetings were really well attended," Kalinoski said. "We established priorities for the program, including education for residents and students in the area."

A Progressive Solution
In 2008, the Basin Alliance looked to Progressive Solutions Inc., a Quality Vegetation Management™ (QVM) Certified Applicator, whose staff has extensive experience in battling invasive weeds in the Panhandle. Together, the Basin Alliance and Progressive Solutions designed a management plan with a herbicide treatment to garner the best short- and long-term results.

"Mechanical removal and mowing wouldn't get at the roots or stop the spread of these weed types," Billy Moye, area manager, Progressive Solutions said. "Because we were working with rhizome weeds, hacking and mowing would have encouraged growth. Other invasive weeds were so rooted that pulling was not an option. We chose selective aquatic herbicides that don't harm live species, encourage native plant growth and target undesirable species."

Before any spraying could begin, the Basin Alliance knew it had to focus on education for the residents that did not take part in the planning process.

"Some people are uncomfortable with the idea of using chemicals to treat weeds in our waters," Kalinoski said. "It's easier for residents to feel at ease with someone putting herbicides in their lakes if they understand how the herbicides interact with the ecosystem and provide the best solution for restoring the native plant community."

To build that understanding, the Alliance went grassroots.

“Neighbors received letters, phone calls and invitations to voice concerns or questions about the plan,” Kalinoski said. “All of the work up front paid off during the application season because residents understood, valued and recognized the importance of this approach. They didn’t get upset when they saw spraying.”

In keeping with QVM principles, Progressive Solutions even walked door-to-door asking permission to spray in certain areas. This highly trained team is committed to best practices in vegetation management – even if it means a little more work educating the public.

As a QVM Certified Applicator, we use proven products applied at the lowest effective rates,” Moye said. “Clearcast® herbicide is a highly selective herbicide and is great for sustaining environmental responsibility, especially in aquatic environments.”

The team at Progressive Solutions recommended a highly targeted application of BASF Clearcast herbicide at 64 ounces per acre for control of Chinese tallowtree, torpedograss and alligatorweed. Clearcast can be applied using low-volume foliar techniques or via hack-and-squirt on larger Chinese tallowtrees. Moye also suggested a low-volume application of BASF Habitat® herbicide at 1 percent and Accord® herbicide at 2.5 percent in solution for treating torpedograss and a 1 percent solution of Habitat applied via backpack for alligatorweed and phragmites.

“We had to get creative with our delivery methods on some of these lakes,” Moye said. “We have used boats owned by some of the homeowners’ associations, as some of the lakes don’t have boat launches for our craft, and have even made treatments from a canoe in instances where the lakes are very small.”

The prescribed treatment is working well for the team at Progressive, where they can get to the problem weeds.

“Because the stands were so dense in some of the areas, we had to do an initial perimeter treatment with a follow-up foliar treatment a few weeks later,” Moye said. “We even had to do controlled burns on tallow tree to get all the way into the stands for comprehensive control.”

Even after the crew completes its initial spray treatment, they plan to complete one more prescribed burns for all of the infested areas. After a few years, retreatment of tallowtree resprouts will help diminish the seedbank and should keep the plants out for good.

Volunteers Scout the Field

One tool that the Basin Alliance has been using to track weed presence is global positioning, which can map the exact satellite location of a weed infestation. Applicators, volunteers, home owners and even high school students were armed with global positioning system (GPS) devices so they could help pinpoint invasive weeds wherever they found them.

At high schools, the Basin Alliance led hands-on training sessions about plant identification; lake zoning and weed management. During field trips students used GPS systems, recorded data and helped Kalinoski and her crew combat the dune lakes' invasive species problem.

“Students caught on so fast. Their data helped with our permit application for vegetation control,” Kalinoski said. “It’s more fun when everyone’s involved in keeping these weeds under control and learning how weeds affect our surroundings.”

“The maps provide a blueprint for action that the applicators use to stay on top of the weed situation.”

Moye and his team closely monitor treated areas to identify any areas where plants survived the treatment, and to cover any areas that were missed or unreachable in the first part of the season. But the GPS data gathered will help Progressive take action quickly where there are known problems.

Even though there are some areas that have dense stands of invasive weeds, Kalinoski's data suggests that they are catching many of the problem weed species early, before infestations can disrupt outflow or destroy recreation in the area.

"In some areas, the weeds are so bad that we can only control the issue but in most areas, we're ahead of the game," she said. "That frees us up to work on the other priorities for ecosystem conservation, including more research and data collection."

Moving forward, the Basin Alliance plans to re-establish desirable species in the areas once dominated by invasive weeds, using Progressive Solutions to help keep regrowth of weeds in check.

"We hope to plant native grasses that fill in densely to keep the torpedo grass out," Kalinoski said. "If managed properly and encouraged, desirable plants can help reduce future unwanted species and also enhance the aesthetic beauty of the lakes."

Over time, Kalinoski, her team and community will restore Choctawhatchee's rare aquatic environments and bring forth species which encourage native growth. Residents will look over their docks and see beautiful bodies of water rather than dense pockets of standing weeds.

"Our work has empowered our community to stand up, participate in the discussion and take charge of their own land management objectives," Kalinoski said. "In the end, it helps make our part of the world a better place."

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