

Staff Directory

Keith Andreu, Aquatic Technician
William Colon, Aquatic Technician
Jason Cull, Operations Manager
Jeremy Ford, Aquatic Technician
Dr. David Hoel, Executive Director
Dr. Ernesto Lasso de la Vega, Water Quality Laboratory Manager
Colin Lewis, Aquatic Biologist
Lee Martin, Aquatic Biologist
Kevin Watts, Deputy Director

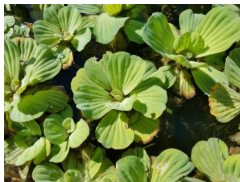


Top Ten Plant Species Treated
In 2021
(acres treated)

- | | |
|----------------------|-----|
| 1. Spatterdock | 470 |
| 2. Water Lettuce | 59 |
| 3. Tapegrass | 38 |
| 4. Water Hyacinth | 37 |
| 5. Muskgrass | 36 |
| 6. Torpedograss | 30 |
| 7. Illinois Pondweed | 27 |
| 8. Spike Rush | 23 |
| 9. Pennywort | 10 |
| 10. Floating Hearts | 10 |



Spatterdock



Water Lettuce



Water Hyacinth



Muskgrass

Public Outreach

2021 was a very productive year, although COVID-19 restrictions suspended most of our outreach activities. The Pond Watch Program was, however, able to continue the monthly sampling for storm water ponds throughout the county, and even increased the volunteer number of sites from 107 to 115. Most of these new sites represent large homeowner association communities with more than 100 residents.

The Annual Pond Watch Workshop took place at the training center on August 9th 2021 and it was well attended by volunteers following COVID-19 protocols. Sponsorship and lunch were provided by private lake management companies and the Florida Lake Management Society (FLMS). The Coastal and Heartland National Estuary Partnership (CHNEP) contributed through an outreach grant providing sampling coolers to transport and preserve the integrity of the water samples. Pond Watch was also actively involved, reaching out as part of the Watershed Education Training Ponds Lakes and Neighborhoods (WETPLAN) initiative. This education program had a series of monthly webinars throughout the year where Dr. Ernesto Lasso de la Vega presented on issues related to water quality and aquatic plant management. Ernesto was also part of a round table discussion regarding volunteer organizations in Florida at the FLMS Annual Symposium.

The following students from FGCU participated in the LCHCD Water Quality Laboratory internship program: Alexis Ludwig (Spring 2021), Megan Sosbe, Emily Hosea, and Jayce Richey (Summer 2021), and Kathrine Hammond (Fall 2021), who all contributed to water quality and data processing for Pond Watch and Caloosahatchee River water sampling. In addition, students participated in a bacteriological study of nutrients released by aquatic plants after chemical treatments. This study was presented at the South Florida Aquatic Plant Management Society meeting in September.



Dr. Ernesto Lasso de la Vega with PW volunteers at the Annual LCHCD Pond Watch workshop

2021 ANNUAL REPORT

Lee County Hyacinth Control District

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Brian F. Farrar, Vice Chairman
Ed Brantley, Secretary - Treasurer
William P. Burke
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Thomas B. Hart
Bruce Scott

Executive Director
Dr. David Hoel

2021 ANNUAL REPORT

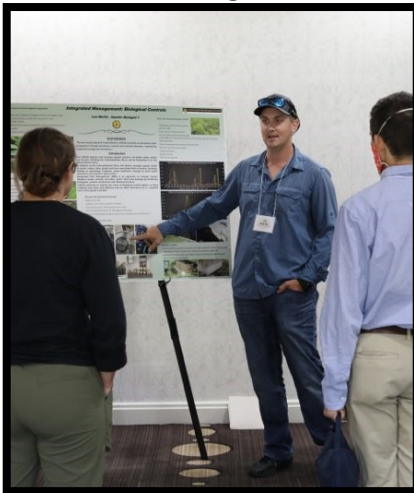
Lee County Hyacinth Control District
15191 Homestead Road
Lehigh Acres, FL 33971

Phone: 239-694-2174

WWW.LCHCD.ORG



Harvesting and removing water pennywort, water lettuce and water hyacinth from the perimeter of Lake Hicpochee along the Caloosahatchee River. This was a collaborative project between the Florida Fish and Wildlife Conservation Commission, Army Corps of Engineers and the Lee County Hyacinth Control District.



Lee Martin answering questions about his Integrated Management: Biological Controls poster at the 2021 FAPMS conference



LCHCD staff, Commissioner Farrar and local residents attending the 2021 Riverside Rally in Bonita Springs

The Lee County Hyacinth Control District was formed by an act of the Florida Legislature on June 12, 1961.



Operations

Aquatic vegetation is managed by the application of Environmental Protection Agency (EPA) approved herbicides, mechanical harvesting and the use of triploid grass carp. 2021 summaries are as follows:

Chemical Control

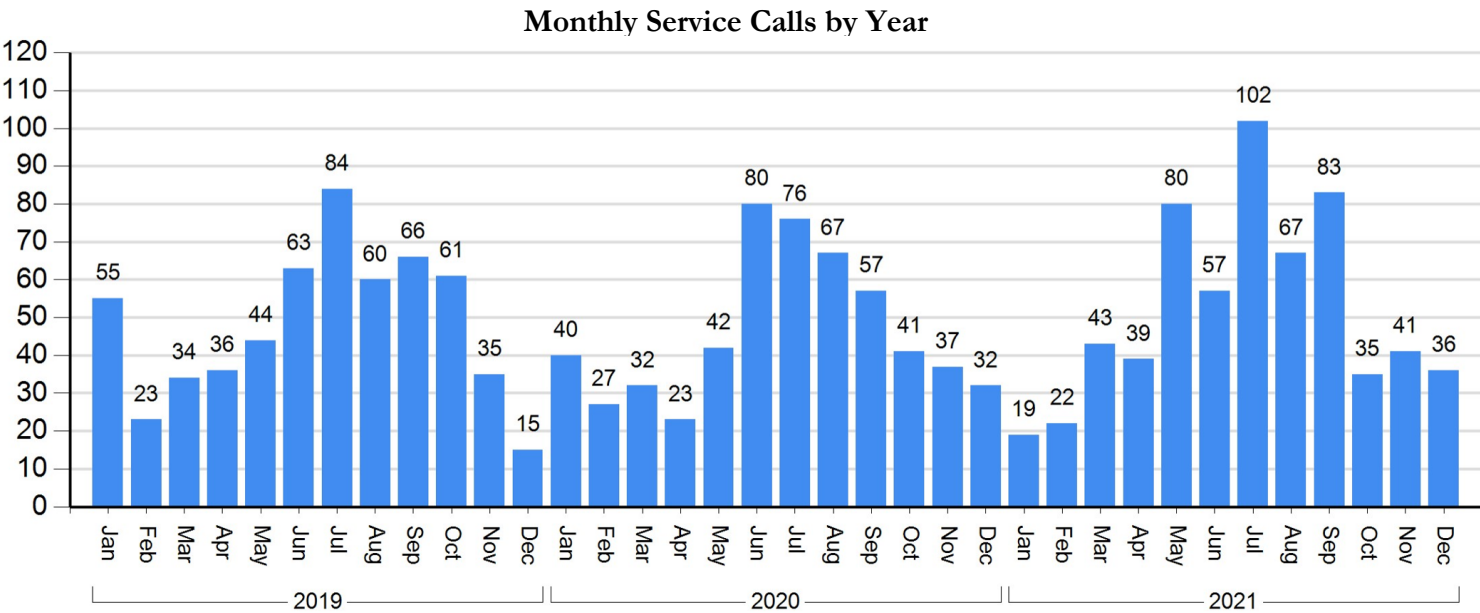
Service Requests - 624
Acres Treated - 796

The geographical jurisdiction of LCHCD includes all of Lee County, the Caloosahatchee River and its tributaries up to the border of Lake Okeechobee in Glades County (28,708 acres managed). The District defines public waters as any waterbody accessible by the general public, or owned as a public resource. Uses of the water may include, but are not limited to, navigation, recreation, fishing, flood control and water supply.

The District was embattled with COVID-19 related issues in 2021, but this didn't discourage our efforts to perform our duties throughout the year managing aquatic plant growth in Lee County. We had several interesting projects, collaborative meetings, and productive work assignments that resulted in directly benefiting our overall program. Employee production remained uninhibited and is highlighted in the following report.

Our native species spatterdock (*Nuphar advena*) consistently remains on top again as the most problematic aquatic plant species in our region over the past eight years. Spatterdock is a superb aquatic plant for our

natural waterways, as it provides excellent fishing habitat, nutrient sequestration, enhanced water clarity and in fact is a very aesthetically pleasing emergent water plant. Unfortunately, it can become invasive and displace other native species within our local waterways impacting flood control and recreational activities. Various methods of control are utilized to manage this prolific macrophyte and can be seen in the series of pictures below.



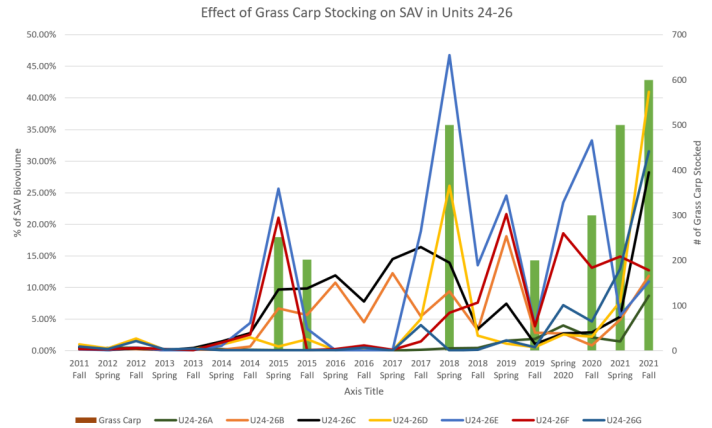
LCHCD accommodated the request of the Lee County Mosquito Control District (LCMCD) this year by designing and producing an onsite *Gambusia* “mosquito fish” program. Fortunately, the District had an existing fish husbandry infrastructure complex and welcomed the challenge to help. The blue tanks in the picture below are utilized to retain *Gambusia* for future stockings and are confined in a closed water circulatory system to prevent outside predation. The initial step with capturing mosquito larvae carnivores is the deployment of minnow traps within our vegetated above-ground ponds. Typically, after 10-15 minutes the traps can be emptied into transport containers for offsite stockings or placed in the fish house collection tanks. In our first full season of production and distribution, LCMCD stocked 28,950 mosquito fish at 579 various problematic breeding sites in the waters of Lee County.



Biological Control

Acres stocked with TGC - 1,014
TGC stocked - 3,415

LCHCD manages the use of Triploid Grass Carp (TGC) (*Ctenopharyngodon idella*) for the purpose of maintaining optimal levels of submergent vegetation (SAV) in conjunction with our integrated aquatic plant management program. Field data is collected and analyzed with a processed assessment program and depicted accordingly in the graph below.



Presentations provide an excellent opportunity for our staff to share knowledge of various aquatic plant management projects that we have performed and offer a venue to showcase the District's programs. Through the course of 2021, LCHCD was able to host workshops, contribute via Zoom conferences, and have in-person presenters at several locations representing the fine work we do. Recognition of the highlighted presentational events are listed as followed: Colin Lewis explained a research project titled “Drone Applications with Selective Herbicide on Targeted Aquatic Plants” and “Joining Forces: Controlling Aquatic Vegetation and Mosquitos Utilizing Drone Technology”, at the Lake Okeechobee Aquatic Task Force meetings, Eric Jackson presented “The Lee County Mosquito Control District an Innovative Approach to Protecting Public Health” and Dr. Ernesto Lasso de la Vega educated folks on “Aquatic Resource Management” at the South Florida Aquatic Plant Management Society’s general meeting, Kevin Watts gave an overview of the LCHCD program to the Mayor and the City Council of Cape Coral, and Jason Cull provided an in-depth LCHCD presentation on “Utilizing Drone Technology in Aquatic Plant Management” at the Annual Florida Aquatic Plant Management Society’s Conference.

This year our new Aquatic Biologist Lee Martin recognized a reoccurring invasive plant called alligator weed (*Alternanthera philoxeroides*) in our local waterways. Lee took this opportunity to reach out to the Army Corps of Engineers to acquire some Alligator Flea Beetles (*Agasicles hygrophila*). Once receiving our first shipment of the biological control agent, Lee organized four sites with this specific plant issue. After distribution, follow up inspections were conducted to determine the effectiveness of the beetles. In some cases, the plants were completely defoliated and reduced to a biomass of less than half of its original mass. Our staff continues to use every possible tool in the toolbox to help combat nuisance plant species in public waterways.

