

Staff Directory

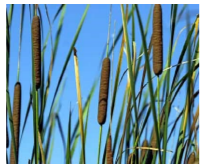
Keith Andreu, Aquatic Technician
 William Colon, Aquaculture Technician
 Jason Cull, Aquatic Field Supervisor
 Jeremy Ford, Aquatic Technician
 T. Wayne Gale, Executive Director
 Ernesto Lasso de la Vega, Water Quality Laboratory Manager
 Kenneth Sonne, Aquatic Technician
 Linda Walstrum, Administrative Assistant
 Kevin Watts, Deputy Director

Top Ten Plant Species Treated In 2017 (acres treated)

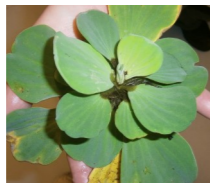
1. Spatterdock 425
2. Torpedograss 72
3. Cattail 36
4. Water Lettuce 33
5. Muskgrass 20
6. Water Pennywort 20
7. Southern Naiad 14
8. Water Hyacinth 13
9. Crested Floating Heart 11
10. Spikerush 7



Spatterdock



Cattail



Water Lettuce



Water Hyacinth

Public Outreach

The LCHCD Water Quality Laboratory continues to provide support for the monitoring of local public and private water bodies. The process of analyzing water samples each month has been efficiently more possible thanks to the automatic analyzer, AQ2 from Seal Analytical. This precision instrument allows hundreds of samples to be measured in addition to the reduction of reagents and waste, resulting in an increase of monitoring sites throughout Lee County. The Pond Watch Program has surpassed the 100 pond mark in which 101 volunteers of which provide water samples every month from neighborhoods storm water ponds to determine their impact on water quality. We have conducted annual workshops for our volunteers and the public in collaboration with other local entities. These helping organizations have formed the Watershed Education Training Ponds Lakes and Neighborhoods (WETPLAN), a consortium of private and public organizations with a mission to help educate residents about storm water ponds. The District hosted the annual event in November that included private companies and citizen presentations.

The District has provided professional opportunities for university students in environmental careers. The six-month internship program pays for a part time position that immerses the student in chores ranging from laboratory water chemistry, field sampling of water and plant monitoring techniques. Florida Gulf Coast University intern Drew Liddick was able to use the data generated by the Pond Watch Program for his master's thesis.

The Caloosahatchee River sampling has continued since 2014 with additional sites expanded from the Franklin Lock, Hickey Creek, Alva, Townsend Canal, Fort Denaud, LaBelle, Ortona Lock and Moore Haven Lock next to Lake Okeechobee. The sampling is reported to the Army Corp of Engineers, in addition to the Water Atlas Website sponsored by the Charlotte Harbor National Estuary Program.

The Water Quality laboratory has participated and assisted in research conducted by FGCU Professor Dr. Serge Thomas and James Evans the Director of Natural Resources, City of Sanibel have determined characterization of storm water ponds on Sanibel Island. Other research by Dr. Hidetoshi Urakawa has requested the water quality analysis of ponds in the Six Mile Cypress Slough to associate natural bacteria to water conditions.

2017 ANNUAL REPORT

Lee County Hyacinth Control District

Board of Commissioners

Thomas B. Hart,
 Chairman
 Michael W. Ellis, Vice Chairman
 Brian Farrar, Secretary -
 Treasurer
 George T. Mann, Jr.
 Bruce C. Scott
 Ed Brantley

Executive Director

T. Wayne Gale

2017 ANNUAL REPORT

Lee County Hyacinth Control District

15191 Homestead Road
 Lehigh Acres, FL 33971

Phone: 239-694-2174

WWW.LCHCD.ORG



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 EPA labeled herbicides, mechanical harvesting and the use of triploid grass carp. 2017 summaries are as follows:

Chemical Control

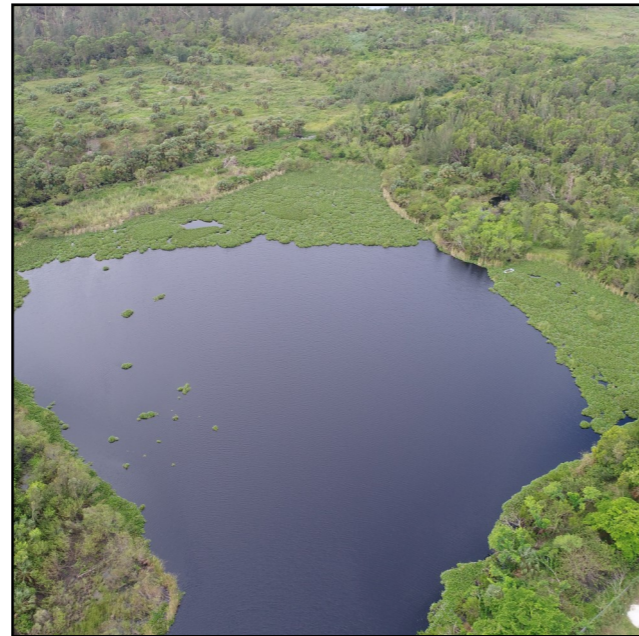
Service Requests 532
Acres Treated 686

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 (28,349 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.

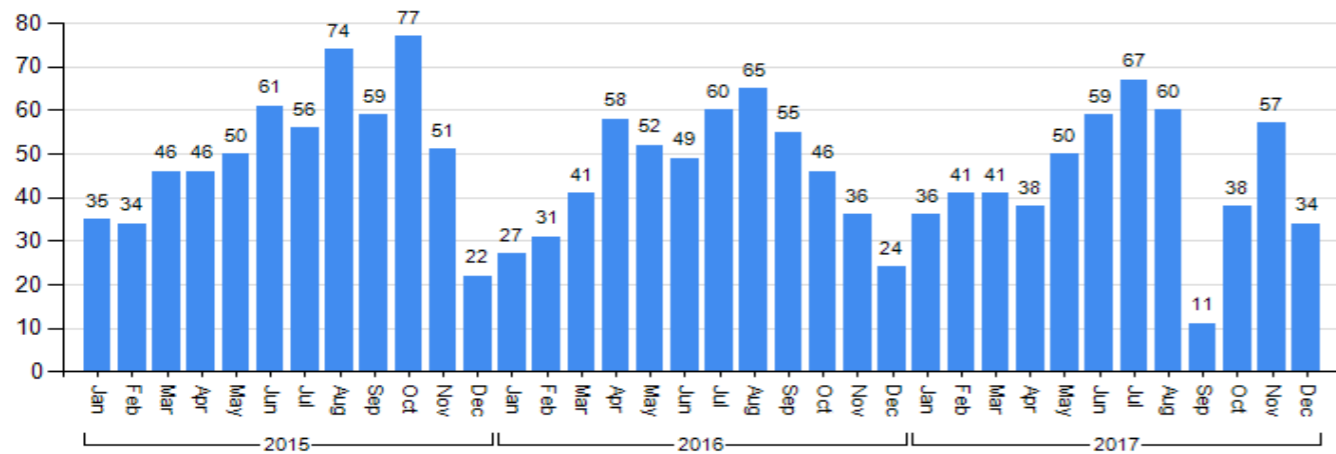
LCHCD continues to provide effective aquatic plant control measures with emphasis upon a functional and designed management plan. The beginning of each season brings in its own unique set of challenges for resource managers. Once again, spatterdock has topped our list for the most treated macrophyte species in 2017. This prolific native perennial is a very important component of water quality and wildlife habitat, but can present issues with flood control and navigation in public waterbodies. It forms very dense interwoven mats at the surface which make it difficult for access and recreational use. Formulating a sustainable approach has served the

District's long term strategy with regards to a balanced integrated plant management strategy.

Another couple of notoriously difficult and problematic plants visible again this year were water hyacinth and water lettuce, aggressively spreading from one water source to another. Unfortunately, these aquatic plants not only pose a problem with essential functions associated with water movement, but are hosts for a rapaciously biting crepuscular mosquito (*Mansonia*). A recent area of concern is Cow Slough Pond located in South Fort Myers near Harlem Heights. Water hyacinth has taken over this pond in a relatively short period of time and is quite visible in the picture below. When left alone, this aggressive species can multiply at a staggering rate. A single water hyacinth plant has the ability to propagate and cover an entire one acre pond in the summer months.



Monthly Service Calls by Year



LCHCD, the U.S. Department of Agriculture (Dr. Ashley Goode & Brittany Knowles) and Whiskey Creek resident (Ron Frazer) collaborated with deploying the County's first biological insect release against water hyacinth. The insect (*Megamelus scutellaris*) is a leafhopper found in South America, where it naturally feeds on water hyacinth. They feed by inserting their stylets (needle-like mouthparts) into the plant and ingesting the sap, this technique damages the plants one by one. LCHCD staff assisted with the release of bug-infected water hyacinth into masses of healthy hyacinth plants, allowing the insects to spread amongst the targeted species within each waterbody. This is a long term strategy, studies have shown that biological control integrated with an herbicide program has improved overall management and reduced herbicide usage.

One of the largest cities in the State of Florida is Cape Coral with it's network of 400 miles of noncontiguous waterways. This presents an interesting challenge for the management of aquatic plants. By design, this urbanized community encompasses all facets of a waterfront wonderland. Residents can utilize the canals for fishing, recreation, boating, and visually appealing scenery. On the other hand, this complicated system serves a

purpose for supplementing water for irrigation, flood control, and catchment for storm water runoff. A vast majority of aquatic vegetation management is performed by LCHCD within the Cape's waterway conveyances.

Spatterdock tops our list for the most treated aquatic plant species again this year. Our theory is, this native plant has developed a niche which favors the conditions set forth by the design of the flood basin within the Cape. Shallow waterbodies help to establish spatterdock to cover the submerged substrate, in turn providing excellent habitat for this species to blanket the surface water's with its abundant lilies. Typically, spatterdock is not an issue in deep waters due to the fact it needs sunlight and the ability to reach the water's surface. The Cape's fluctuating water levels help to cultivate the growth of spatterdock ensuring it's survival throughout our winter months. Come Spring, like all macrophytes these favorable conditions support a suitable environment with a tendency for excellent growth potential. LCHCD's management focuses on control, not eradication of aquatic vegetation. The immense benefits far out way the possible consequences of having no plants at all in Cape Coral's urban reservoir.

Biological Control / Grass Carp

Acres Stocked 520
Grass Carp Stocked 709
Cumulative Acres Managed 2,284

The Districts biological program continues to successfully use triploid grass carp (*Ctenopharyngodon idella*) throughout Lee County's waters where permit restrictions are followed. Grass carp or white amur are native to East Asia, China, and Russia originating from the Amur River. Non-indigenous species such as grass carp are typically regulated for use, each State has different restrictions and only certified triploids are legal for stocking in Florida with the required permit issued from Florida Fish and Wildlife Conservation Commission.

LCHCD uses an integrated management approach, by the means of chemical, mechanical, and biological control of aquatic vegetation. One key component to proper management is establishing a program to

incorporate submergent macrophyte monitoring and bathymetry data assessment. Implementing this tool and its use as a portable hydroacoustic echosounder, the District can effectively map a waterbody's substrate and measure percentage of submergent aquatic vegetation biovolume within the water column. Below is a graph, illustrating the plant density in a series of recorded transects of a Cape Coral waterway system managed with the use of triploid grass carp.

