Lake Okeechobee Fish, Wildlife, and Habitat Management Plan: February 2020 Public Meeting Summary

March 12, 2020

The Florida Fish and Wildlife Conservation Commission (FWC) hosted a series of public meetings on February 18, 20 and 26 in the cities of Okeechobee, West Palm Beach and Clewiston, respectively, and invited the public to provide input on the development of a management plan for Lake Okeechobee. The management plan will guide FWC's future fisheries and habitat management decisions on Lake Okeechobee. Early public participation is essential to the responsible management of Florida's natural resources. These meetings began the stakeholder engagement process that will include a series of stakeholder workshop groups, interviews and surveys, followed by focus groups to develop stakeholder-driven goals, objectives and actions for managing Lake Okeechobee. Additional public meetings are scheduled for the spring and fall of 2020 and 2021, and the management plan for Lake Okeechobee is scheduled to be completed by the end of 2021.

At each meeting, staff provided a short presentation and held open discussion corners with stakeholders, followed by a public comment and question period. This information will be used as a starting point for discussions at stakeholder workshop groups beginning this spring. Habitat loss and management were high priority topics at all meeting locations. Stakeholders noted several specific areas where submerged or emergent vegetation has either declined or rebounded following losses in recent years. Stakeholders requested more restoration plantings and considerations for how restoration work may affect water and sediment flow. Many stakeholders expressed concern about the invasive plant management on the lake. Anglers noted floating plants as fishing areas. Participants generally supported FWC's current strategy of not treating hydrilla in Lake Okeechobee unless requested by stakeholders to improve navigation. Specific input on managing invasive plants included general concerns about herbicides as chemicals, the perceived loss of filtration from floating plants, non-navigation related treatments, contractor oversight, muck accumulation and muck toxicity.

Many stakeholders acknowledged the need for managing invasive plants, but suggested more mechanical harvesting or the exclusive use of mechanical harvesting as an alternative to herbicides. Stakeholders were happy with the recent mechanical harvest projects in Harney Pond and FWC's continued pursuit of finding appropriate disposal sites for harvested vegetation. Some additional ideas were given for consideration throughout the management plan process, including dividing the lake into sections for more organized plant treatment schedules, allowing some areas to not be treated for a given time period and harvesting vegetation for the purpose of biofuels. Other ideas included accounting for muck accumulation during herbicide treatments when considering additional costs of having to remove muck and finding potential removal remedies.

Bass anglers reported lower catches and reduced tournament success due to a loss of submerged vegetation. Several anglers noted concern about fish lesions, with some concerned that herbicide treatments may lower fish immunity to diseases or cause chemical burns. Other concerns included nonnative fish, particularly tilapia and armored catfish. Many anglers commented that there was an exponential increase in tilapia over the past five years and that they have observed tilapia competing for nesting space with largemouth bass. Others felt that tilapia provided forage for largemouth bass. There were mixed opinions about the FWC's stocking of hybrid sunshine bass and whether they compete with

largemouth bass for forage. Fishery recommendations to consider included reducing bag limits and the number of fishing poles allowed when targeting black crappie, habitat restoration in deeper areas to allow fishable areas during fish movements and increasing commercial markets for the harvest of tilapia.

Other general topics voiced by stakeholders included a decline in wading bird and frog populations over time, the need for greater enforcement of boating laws, support for more public meetings and outreach, using plants for filtration, relieving stress to coastal areas and concern for low lake levels. Feedback regarding the management plan process itself was supportive of the initiative, with some concerns expressed about the complicated nature of Lake Okeechobee, the timeline and the need to ensure the plan is science-based.

Questions

The following questions were received during discussion corners or during public comment and question period and we have provided the below responses:

Why has hydrilla fluctuated so much over the years?

The fluctuations of hydrilla on Lake Okeechobee are the result of major storms and high-water events over the past few decades. In the 1990s, large amounts of hydrilla were historically present in areas such as Eagle Bay, Cody's Cove and Fisheating Bay prior to large storm events. Between 2004-2005, hurricanes Francis (2004), Jeanne (2004), and Wilma (2005) uprooted large amounts of hydrilla, and caused turbid waters to persist, making it difficult for hydrilla and other submerged vegetation to grow. Most recently, Hurricane Irma (2017) resulted in similar losses to submerged vegetation, like hydrilla, due to storm energy and the subsequent turbid waters. The effects of these two time periods (2004/2005 and 2017) can be seen in the sharp declines of the below graph of hydrilla coverage as estimated by data obtained from annual South Florida Water Management District (SFWMD) surveys completed in August of each year (Figure 1).

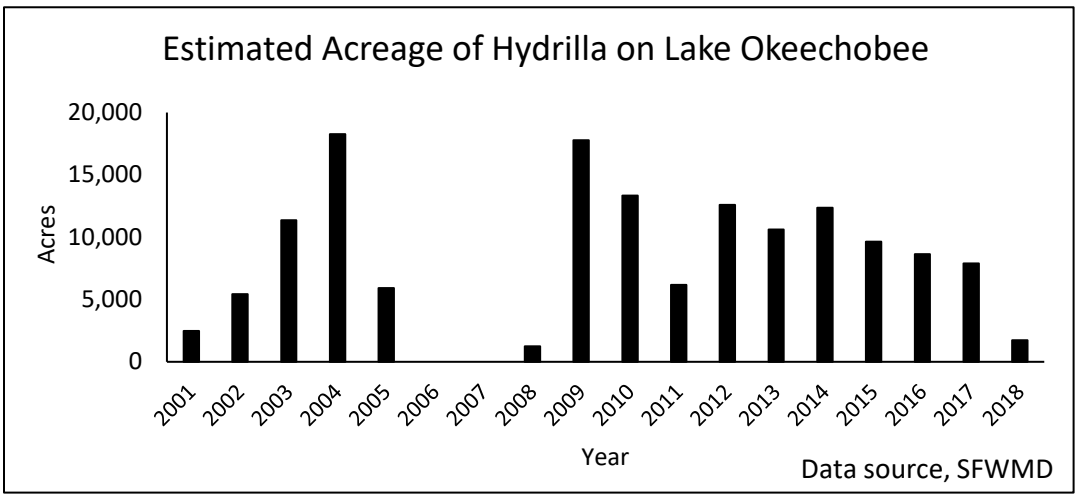

Figure 1: Estimated acreage of Hydrilla observed on Lake Okeechobee from 2001 through 2018 in the month of August of each year (Data provided by South Florida Water Management District, 2019)

Is FWC in charge of canals being dredged when silted in and blocking navigation?

This issue would be addressed by the U.S. Army Corps of Engineers, which can be contacted through the Jacksonville District Office at 904-232-2568 or https://www.saj.usace.army.mil/Contact/.

Why can't smaller treatments of floating plants be mechanically harvested?

FWC is expanding our harvesting efforts on Lake Okeechobee and currently have harvesters working in the Harney Pond area. In most cases, harvesting is more expensive because of equipment staging, transport and disposal costs. However, the FWC considers many factors when selecting the appropriate management tool. For example, harvesters are generally inefficient collecting small populations of plants and have difficulty accessing shallow sites. When invasive plants are mixed with native plants, the only way to effectively remove them is with herbicides. Selective herbicides are the least damaging tool for native plants. The FWC uses a maintenance control strategy meaning invasive plant populations are treated with herbicides when the plant populations are small. This management strategy reduces the amount of herbicide used, management costs, impacts to beneficial native aquatic plants and the amount of organic material that is deposited to the lake bottom either through the natural shedding of leaves or from management.

Are spraying locations posted where contractors are working on at ramps such as Okee Tantie?

We do not currently post work treatment locations at boat ramps, but all plant treatments, as well as many other FWC-related projects can be found at our individual lake pages designed to keep stakeholders informed titled, "What's Happening on My Lake": https://myfwc.com/wildlifehabitats/habitat/invasive-plants/lakes/.

Are fish exposed to microcystin safe to eat?

The Florida Department of Health provides information relating cyanobacteria to human health, including the consumption of fish: http://www.floridahealth.gov/environmental-health/aquatic-toxins/harmful-algae-blooms/index.html.

Can the water levels in Taylor Creek be increased?

FWC does not regulate water levels but our biologists and land managers work closely with water managers at the U.S. Army Corps of Engineers and local water management districts by providing ecologically based recommendations for water management.

The appropriate state contact for this question would be the South Florida Water Management District: https://www.sfwmd.gov/.

Is "muck" dead vegetation?

Muck is organic matter and is often made of naturally decaying emergent and submergent plants, algae and animals. The buildup of organic sediments is a natural process in all marshes as plants are constantly growing and shedding old leaves. In Lake Okeechobee, flows from the Kissimmee River also bring in sediments and nutrients adding to the accumulated matter on the lake bottom over time.

Can muck be used as fertilizer?

Past muck removal projects completed by FWC on Lake Okeechobee have passed soil quality tests and were donated to local farms. Each new area would need to be tested to ensure quality, and transport costs would need to be considered. Future projects may also need to meet requirements set by the Food and Safety Modernization Act.

By spraying you keep creating muck on the bottom of the lake, what are you going to do to remove that buildup of material?

To remove muck in lakes, the FWC uses strategies such as drawdowns, tussock removals and mechanical scraping operations to reduce the amount of organic material on lake bottoms. In Lake Okeechobee, FWC has conducted muck removal projects during periods of low water such as berm removals and scraping, in areas of the marsh such as Tin House Cove. In addition, FWC seasonally conducts prescribed burns to maintain healthy vegetation communities and reduce the accumulation of organics from seasonal dying vegetation. Periodic drawdowns also cause muck to break up when exposed to oxygen and can be beneficial in reducing muck in some areas.

To reduce muck accumulation in Lake Okeechobee, FWC takes a maintenance control approach to managing floating invasive plants (which means less plants drop to the bottom than largescale treatments) and conducts muck removal projects when possible. While herbicide treatments do contribute to the deposition of organics, the deposition from untreated plants has the potential to be much greater. If left untreated, one acre of water-hyacinth can deposit as much as 500 tons of rotting plant material on the bottom of a lake in a year because these fast-growing plants are constantly growing new and shedding old leaves. Therefore, without proper management, these invasive floating plants pose a significant threat to our native plants, wildlife, navigation and flood control. Large-scale die-offs of vegetation from high water events and storms over time have additionally added large amounts of organic material in the form of muck and organic berms.

Procellacor lists 75% of its ingredients as other, I called and spoke with someone from Procellacor and no one can tell me what other is. Because it's proprietary, they don't have to list these ingredients. Do we even know what we are putting in our water anymore?

Herbicides registered for use in aquatic environments undergo years of rigorous evaluation with the U.S. Environmental Protection Agency (EPA) and this information is required as part of the registration process. In addition, before an herbicide may be used in Florida waters, it must be registered with the Florida Department of Agriculture and Consumer Services. During this process, state health and environmental agencies comment on new herbicides. For an aquatic herbicide to pass the registration

process it must not pose a reasonable threat to human health and safety. Once registered for use in Florida waters, the FWC contracts with universities and other research institutions to find the most environmentally compatible and cost-effective strategies to apply herbicides to control invasive plants while conserving or enhancing native plants and animals.

If mechanical Harvesting is too expensive, does a draw down and muck removal factor into the cost of spraying?

The FWC considers many factors when selecting the appropriate management tool and cost is only one factor as to whether mechanical harvesting is a viable option for a project. For example, water depths are often a limiting factor when considering mechanical removal. While herbicide treatments do contribute to the deposition of organics, the deposition from untreated plants has the potential to be much greater. We recognize the detriment of muck accumulation in Lake Okeechobee and actively pursue muck removal and other projects such as prescribed fires to reduce the accumulation of organic matter to the lake. Mechanical harvesting would not eliminate the need to do muck removal, it may only reduce it in areas where harvesters can access plants.

I saw a study a while back talking about live plants sloughing off leaves and creating more organic sediment, can someone talk about that?

As vegetation grows older, leaves are dropped off in a natural process termed sloughing. These dropped leaves fall to the bottom and become part of the organic sediments that naturally accumulate in a waterbody. Research on this topic was conducted by the University of Florida that was designed to test the maintenance control strategy (a copy of this study is attached). Maintenance control is treating invasive plant populations when they are small before they become problematic. This research concluded that there was four times the amount of organic material accumulated in the untreated plots than the plots using maintenance control (lowest feasible level). FWC's management goal is to maintain floating aquatic plant populations at a manageable level which reduces the amount leaf drop and their contribution to organic sediments

Has FWC considered the ramifications of 17 different spray applicators alone, each with over 100 employees spraying into the wind without masks – what happens when these people wake up and file lawsuits – the next tsunami of money the taxpayers have to pay?

Aquatic herbicide applicators are required to be licensed by The Florida Department of Agriculture and Consumer Services (FDACS) to apply herbicides in the state program. Also, the FWC uses herbicides approved and labeled for aquatic use to manage invasive floating plants on Florida's public waterbodies. Herbicides registered for use in aquatic environments undergo years of evaluation with the U.S. Environmental Protection Agency (EPA) including more than 140 tests related to human and environmental impacts. In their concentrated form, all herbicides should be handled with great care. However, EPA explains that when an EPA-registered herbicide is used according to the label directions, it will cause no unreasonable adverse effect on human health or the environment. Further, before an

herbicide can be sold for use in Florida waters, it must be registered with the Florida Department of Agriculture and Consumer Services. During this process, state health and environmental agencies comment on new herbicides, as well as, new use patterns for previously registered herbicide compounds. The FWC continuously contracts with universities and other research institutions to find the most environmentally compatible and cost-effective strategies to apply herbicides to control target vegetation while conserving or enhancing non-target plants and animals. FWC will continue to coordinate with the Florida Department of Agriculture and Consumer Services for guidance on herbicides registered for use in Florida's waters.

How much money will it take to harvest on every lake in the State of Florida?

There are many factors that would need to be incorporated in this evaluation to determine an accurate estimate. Assuming harvesters managed invasive floating plants at similar rates as herbicide applications a very rough calculation could be made from historical treatment data. For example, in the fiscal year 2017-2018, FWC spent roughly $17 million on aquatic plant treatments. Using the average cost of a harvest project, the total cost of exclusive harvesting for that fiscal year would have been roughly $278 million. FWC considers many factors when selecting the appropriate management tool and cost is only one factor as to whether mechanical harvesting is a viable option for a project. Specifically, shallow water and mixed stands of vegetation are often a limiting factor for the use of harvesters.

2011 was good fishing – what was the acreage of floating vegetation during that time period?

FWC conducts monthly aerial surveys to determine plant coverage. In 2011, coverage ranged from 149 acres (JUN 10) to 1479 acres (NOV 3) and FWC treated 2,094 acres of floating plants in fiscal year 2010-2011 and 670 in fiscal year 2011-2012 to maintain those levels. Currently, there are 3,500 acres of floating plants on the lake and we have treated roughly 6,400 acres in fiscal year 2019-2020.

FWC's fisheries data supports that 2011 was a good fishing year, likely due to the quality of submerged vegetation coverage during this time. It is known that species like Largemouth bass fluctuate with habitat conditions on Lake Okeechobee. Submerged vegetation like eelgrass and hydrilla provide foraging, spawning, and nursery habitat for young fish to shelter. As shown in Figure 2 below, the 2010-2011 fishing season (October-June) had the highest angler catch rates for Largemouth bass since the recovery of the lake following the 2004/2005 hurricanes. While the 2004/2005 hurricanes caused extensive losses of submerged vegetation, low water levels during some of the years that followed (2007-2012) allowed the submerged vegetation to get the sunlight it needed to germinate and grow, and the vegetation recovered, along with the Largemouth bass (Figure 3). While we are currently experiencing the effects of habitat loss following Hurricane Irma in 2017, submerged vegetation is recovering well in many areas and will again improve the habitat conditions for Largemouth bass and other species (Figure 3).

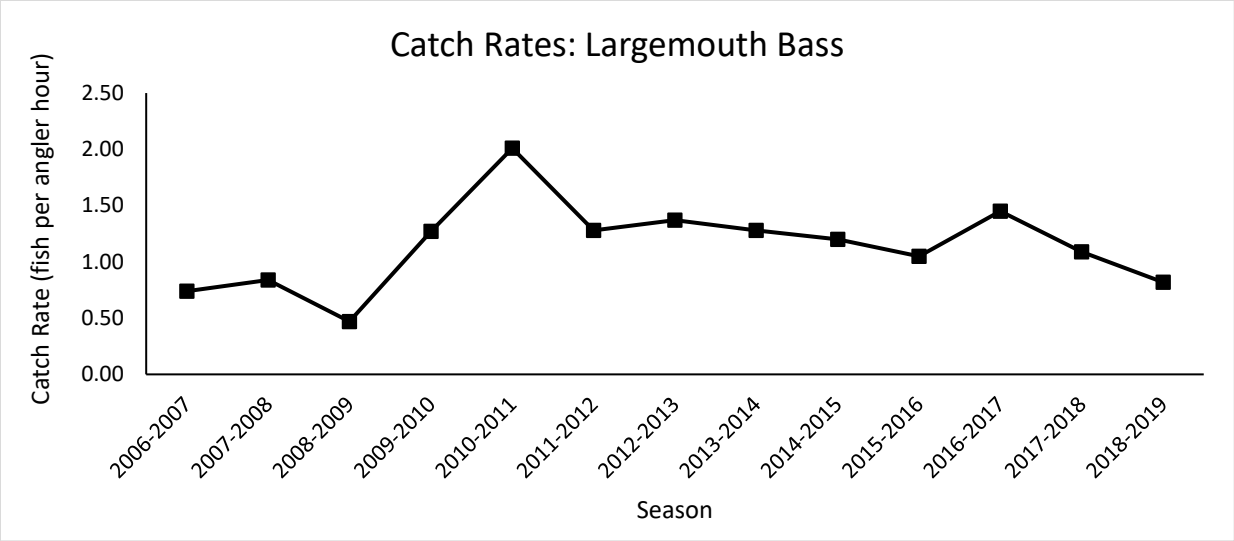

Figure 2: Creel data collected by FWC staff between 2006 and 2019. Catch rates represent the number of fish caught per hour fished by the average angler.

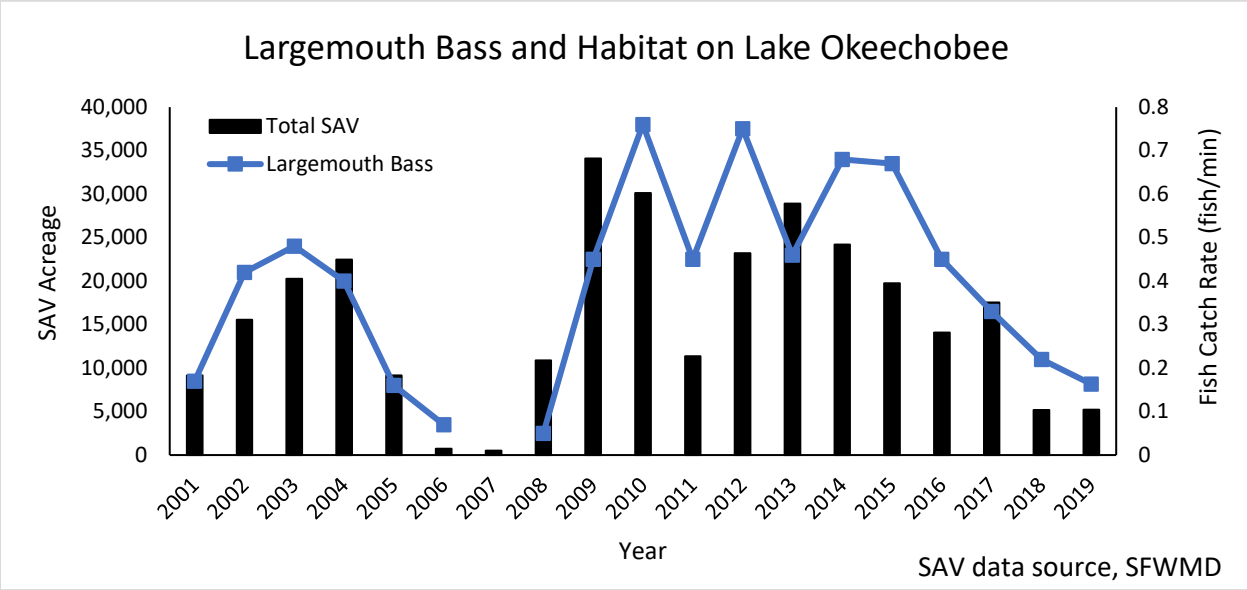

Figure 3: Estimated total acreage of submerged aquatic vegetation (SAV) observed on Lake Okeechobee from 2001 through 2019 in the month of August of each year (Data provided by South Florida Water Management District, 2019) and total Largemouth bass catch rates during annual fall electrofishing monitoring (note: data was not collected in 2007).