

LAKE OKEECHOBEE AQUATIC PLANT and FISH & WILDLIFE MANAGEMENT PROGRAMS

PUBLIC MEETING

APRIL 11, 2017 6:00 – 8:00 PM, CLEWISTON

PUBLIC COMMENTS

We thank everyone who attended the meeting and provided their input. Below we have documented the comments and questions from the comment cards, and those provided during conversations at the break-out session, and provided answers to the best of our abilities. Questions or comments of a similar nature were grouped together where possible and an answer was provided to address them. We hope this meeting summary and the additional documents help answer your questions and we look forward to continued discussions.

SPRAY LOGISTICS & OVERSIGHT

- Are dates and locations of spraying posted?
 - **FWC response:** Yes, you can find them on the MyFWC.com website (<https://public.myfwc.com/HSC/PMARS/waterbodySchedule.aspx>) or on the Task Force website (<https://www.floridainvasives.org/okeechobee/>).

- How can you justify over 20 spray boats a day that work 2 hours, then dump their chemical and sit in the weeds like we all have seen?
 - **FWC response:** The program is designed in a way that does not give the contractor a financial incentive for the amount of herbicide that is applied. They do not make any more profit than they would if they had not sprayed any vegetation. If you see something like you have described above, please document as best you can and send to the local biologist to investigate.

- Why spray spawn areas during spawn season? Why not use that time to spray areas the fishermen can't get to?
- We think there is a better way to control invasive plants. We want to stop spraying during spawning season. How do you educate your people to learn good plants from bad?
 - **FWC response:** To keep many of our systems in south Florida, including Lake Okeechobee, in the best shape possible to benefit fish, wildlife and species diversity and provide the recreational public improved access and use it requires that we control the invasive hyacinths, lettuce and burhead sedge at maintenance levels (lowest feasible level) year-round. The practice of maintenance control is used statewide to treat small populations often, using less herbicides, putting less plant material on the bottom, and having less of an environmental impact. Due to the length of the spawning season of freshwater sportfish in Lake Okeechobee, it would not be feasible to stop treatment

during this time frame. We are concerned about the impact of spraying also, and is why FWC commissioned a research project to look at what effects spraying these areas might have. University of Florida researchers found no differences on impacts to spawning success between treated and untreated areas. We would be happy to provide anyone with copies of the research. We are constantly looking for better ways to control invasive plants and would be happy to discuss any suggestions you may have. All our people, from the biologist to the applicator, have plant identification as part of their training, and annual refresher courses are held to reinforce their plant identification knowledge.

- Why is spraying being done where navigation is not an issue and there are no plants at all?
 - **FWC response:** We target vegetation in the program and do not spray where there is not any target vegetation. If you see something that looks like what you have described, please document as best you can and call the local biologist so we may investigate and follow up with you.
- Do the people that spray work for FWC?
 - **FWC response:** While the applicators are not FWC employees, we direct and oversee spraying activities conducted by both private and local government contractors.
- Who is responsible for the standards of the sprayers? In other words, quality control
- This all looks great on paper but this is not what is happening in real life out there with the sprayers
- FWC isn't seeing what's really going on. Non-target plants die.
 - **FWC response:** The FWC is responsible to make sure that the herbicide applicator is controlling the target plants and having a minimal impact on the non-target plants. All applicators, both government and private, must be licensed by the Florida Department of Agriculture and Consumer Services (FDACS) and have an aquatics certification to be able to spray under the Aquatic Plant Control Program. Applicators must pass a minimum of two tests to get the aquatics license and they must also attend enough annual training to obtain Continuing Education Units (CEUs) to maintain their certification.
- Who polices the spray crews?
 - **FWC response:** FWC with respect to what plants and where they are spraying them. FDACS as far as their certification, CEUs and what herbicides they are allowed to use in waters of the state.
- I understand and respect the spray program. I just want to know how the spray companies can be monitored better. They are killing every bit of vegetation on the lake. It then turns into muck, which destroys bedding areas. Please listen to the people that are on the lake all the time.
- We are failing at the assessment of contractor performance and success of spray program
- Biggest issue is lack of monitoring of contractors
- Use drones to monitor

- **FWC response:** We strive to have an open and transparent spray program and would be happy to work with you or anyone else to come up with better monitoring protocols. Although we cannot monitor all crews working all the time, we do monitor their work. We can easily observe the accuracy of their work. When we go out there and see that they killed the target species with little to no non-target damage, then we know they did a good job. If we see there is excessive non-target damage, we notify them, either send pictures or meet them out on the lake to observe and discuss the issue together and take the appropriate action to ensure it does not happen again. Contractors don't like it when we have any issues with their work as there is a lot of competition in their field to replace them if their work is not acceptable.
- Are the sprayers supposed to target and pulse spray or are they supposed to hold trigger and spray?
 - **FWC response:** They might do either, depending on how much vegetation and the arrangement of the target vegetation.
- What is being done about over spraying?
 - **FWC response:** In answering this we made the assumption that you were referring to excessive non-target damage. When this occurs, we notify the contractor, send pictures, or meet them at the site to observe and discuss the issue together. It usually gets resolved by working with the applicator and making sure they are meeting our expectations. In the past we have withheld payment for unsatisfactory work. If you are referring to native plants browning, that may happen when the invasive plants are mixed in with natives, it is unavoidable, but that's why we use selective herbicides. Because the native plants are rooted they are not killed and will recover in a short time.
- Where do we send the videos?
 - **FWC response:** Please send any video or specific issue questions to the local Invasive Plant Management Regional Biologist so they can address the issue. See local contact information sheet with this packet.

HERBICIDES

- What kind of chemicals are being used on our lake?
 - **FWC response:** There are four (4) main chemicals used for floating plant control on Lake Okeechobee depending on where the target vegetation is and what native plants are immediately adjacent to the target plants. They are 2,4-D amine, diquat, flumioxazin and penoxsulam. The use of an individual product is based on having the least amount of impact to non-target vegetation.
- Is the same herbicide used for all targeted vegetation?
- Are they using one type of herbicide for all veg or are there several types?

- **FWC response:** No, we strive to use a product that will kill the target plant and have the least amount of impact to non-target vegetation.
- Are these herbicides used regulated in terms of the impact to feeding pollution and algae blooms?
- Do the chemicals that are being used have any impact on fish, wildlife, and humans?
 - **FWC response:** The FWC has to get a permit for the use of herbicides in waters of the United States. This is issued by the US Environmental Protection Agency and is renewed every 3 years. The Commission has to submit an annual report as to how much herbicides were applied to waters of the US in Florida in any given year. That report is available online on our website. All the herbicides used in the program are registered for use by the US Environmental Protection Agency and Florida Department of Agriculture and Consumer Services, and go through a long and expensive scientific evaluation process before they are allowed to be used in the state. Because they are used in water, there is an additional battery of studies that must be done before the product can get an aquatic use registration. All of these are conducted to ensure a margin of safety to fish, wildlife, and human health.
- When spraying in high winds, kill friendly foliage. Why do the spray on windy days?
- What is the max wind speed per chemical sprayed?
- FWC needs to include spray specs in follow up information: wind speed, etc.
 - **FWC response:** When applying any herbicide, the applicator must follow any wind restriction that is on the label, this would vary depending on the herbicide. If an herbicide has a wind speed restriction, it is listed on the label and must be followed. Applicators take and report wind readings throughout the day. Diquat has no wind restriction, but they usually stop at 15 mph. Penoxsulam, flumioxazin, and 2,4-D amine have a restriction of 10 mph.

VEGETATION

- What are invasive plants and how do they hurt the lake? Aren't they water plants? These plants can clean and filter the water and provide shelter and food for our animals and fish.
- Why not allow hyacinth and lettuce to get to the lake?
 - **FWC response:** Invasive plants are non-native plants whose introduction causes, or is likely to cause, economic or environmental harm, or harm to human health. There are both aquatic and terrestrial invasive plants. They hurt the lake by displacing our native plant species and impacting uses and functions of the water causing economic and environmental harm. Impacts from invasive plants to water quality vary by species, but water hyacinth is especially efficient at releasing nutrients into the water. Some invasive plants, like the ones mentioned in your question, can provide the values that you mentioned when they are at relatively low populations, but because of their tremendous growth they quickly become a detriment to the system and any value that they provide is offset by the large cost it takes to keep them at the lower level. Besides,

our native plants provide these same benefits for free. Hyacinths and lettuce grow at a very rapid pace and can double in weight in as little as 7 to 10 days. Because they grow so fast, they can have a negative impact on the uses and functions of the lake in a very short time period.

- When targeting invasives does it kill native plants as well?
- Why are we spraying diquat?
 - **FWC response:** Does targeting invasives kill native plants – yes. However, our goals are to reduce invasives while allowing beneficial plants to thrive with less competition. There are several ways in which we try to minimize any impacts to native plants. First, if possible we use a product that will kill the target plant and not the native plants. An example of this is using the more expensive herbicide penoxsulam to control hyacinths in bulrush because it will not impact the bulrush but will kill the hyacinth. Other times, we can avoid damage to natives by the concentration of the product being used. By using some of the systemic products at low rates we can kill our target invasive plant without killing many of the native species. One misconception by many is that if a plant is brown then it is dead. For example, on many systems hyacinths or lettuce grow within large spatterdock or cow lily beds. When this occurs, the applicator uses diquat, a contact herbicide, to control the plants. As discussed above, the diquat “kills” or browns what it touches so the target floating plants and the non-target spatterdock turn brown. The floating plants usually fall out within a few days to a week and you are left with brown spatterdock. This is when we may get calls that a crew is killing pads. However, if you follow this area for another couple of weeks you find that because the spatterdock is rooted and we used a contact herbicide the vegetation recovers very quickly. After 3 weeks to a month you cannot tell that an application took place at the site. Research has documented this and we could provide you with the data if you like.
- Does sprayed/dying vegetation settle on bottom of lake and become muck and sludge which harms the spawning areas around the lake?
 - **FWC response:** Sprayed vegetation does fall out and become part of the bottom organic layer; however, the amount that goes to the bottom from an application is far less than if that plant was not controlled and continued to grow throughout the year. Research has shown that floating plants left to grow create about 4 times the amount of sediment than if they were treated when the population was small.
- What type of vegetation is targeted?
 - **FWC response:** Mainly invasive vegetation and mainly the floating invasive plants: water hyacinth, water lettuce, and Cuban bulrush (burhead sedge). Other vegetation is targeted to improve navigation or habitat type. Management objectives for “other” plant control is stated in the work plan which can be found at <https://public.myfwc.com/HSC/PMARS/waterbodySchedule.aspx>
- Why are you spraying Cuban Bulrush all over the lake when the USGS has a published report that says: “to date, little is known regarding basic biological and ecological characteristics of this

plant? Additionally, there have not been any management recommendations for this species. Additional research is needed to develop techniques to slow its spread.”

- **FWC response:** We are spraying Cuban bulrush because it is displacing native plants and impacting the uses and functions of many of our public and private waterbodies. In fact, in the panhandle of Florida it has become a larger problem than water hyacinths in many systems. We currently have an effective means to treat Cuban bulrush which has minimal impacts to non-target vegetation. We always welcome additional biological and ecological information on this or any invasive plant, but our records show that it is having a negative impact to native plants in many systems.
- When you spray the reeds does it kill the roots?
 - **FWC response:** It depends. A contact product like the diquat mentioned above kills that portion of a plant it touches and does not move to the roots. In order to kill with a “contact” herbicide the entire plant must be treated/covered with the herbicide. Non-target damage from contact herbicides does not kill the adjacent plants because it does not have enough herbicide coverage, so in this instance you may see some browning, but no kill. Glyphosate is an example of a product that would move through a plant and kill the roots. This can also be complicated as to where the plant is located. For example, glyphosate, which we have already stated can move through the plant and kill it down to the roots, is not able to move through the submersed portion of the plant so it may not kill a plant down to the roots if the plant is in a couple feet of water.
- Can more cattails be controlled on the marsh edge for better interior circulation?
 - **FWC response:** Cattail populations on the edge of the marsh are highly dynamic. The wide-ranging water levels in Lake Okeechobee – which are so important to the ecological health of the Lake – allow cattail to establish on the marsh edge during low water. These same cattail plants are commonly uprooted during extended or extreme high lake levels. As a result, cattail expansion on the edge of the marsh is regulated by water levels. When dense stands of cattail and bulrush are present on the edge of the marsh, these plants provide a couple of important services to the remainder of the marsh:
 - Cattail and bulrush on the marsh edge act as a wave break. This protects spikerush, pads, grasses, and other desirable interior vegetation from being uprooted by the intense movement of water that occurs on Lake Okeechobee.
 - Water quality is significantly worse in the open water portion of Lake Okeechobee. Cattail and bulrush on the edge of the marsh reduce the movement of nutrients into the marsh interior.
 - The goal of increasing circulation into the marsh interior would be to redistribute organic sediments and prevent their accumulation in certain areas. This same process is also regulated by hydrology. Low water levels in the spring and summer on Lake Okeechobee are a goal for resource managers, in part to expose organic sediments. When these sediments become exposed, dead vegetation is allowed to be recycled and sediment accumulation is limited.

PRESCRIBED FIRE

- Why is it such a production to burn the lake? It should be done every 3 years
 - **FWC response:** Prescribed burns have parameters that need to be followed for the Florida Forest Service to authorize a burn. Wind direction and speed, dispersion, humidity, water levels, surrounding conditions, fire control personnel, and smoke sensitive areas (roads, neighborhoods, etc.) are just a few of the variables that need to be taken into consideration. We have attempted 4 burns since December, one got cancelled due to rain, another was cancelled due to personnel issues, and one was cancelled and another postponed because the Forest Service was not authorizing burns due to other wildfires limiting their available resources. They can't authorize a burn when they don't have enough resources to help us in case something goes wrong. We have a very small burn team and always need outside help, so it makes things more difficult when you have to depend on others for assistance. It takes a good amount of work to organize a burn, especially when burning large parcels in the lake. Our next plan is to break up our burn zones further, hoping that if we have smaller acreage we'll have more opportunities to burn.
- What are the benefits of burning the cattails (our hardline) to allow other plants to grow?
 - **FWC response:** By burning cattail we help reduce the amount of vegetation that decays in the lake.

NUTRIENTS

- 1-6 million spent on weed control in last 5 years. How much was spent on phosphorus pollution that comes in from Kissimmee River in last 5 years?
 - **FWC response:** We don't know the total amount spent by the various agencies. There are several projects in the Okeechobee watershed intended to help reduce phosphorus. Florida Department of Environmental Protection, Florida Department of Agriculture and Consumer Services, South Florida Water Management District, and other agencies are currently undertaking a Basin Management Plan with the goal of reducing nutrient inputs into the lake.
- Do we know how our herbicides are reacting with the chemicals/substances that are coming down the Kissimmee River?
 - **FWC response:** We are not aware of any chemicals or substances that are coming down the Kissimmee River. The herbicides we use do not persist in the environment for very long.
- What estuaries do the phosphates come from?
 - **FWC response:** We are unsure of the intended meaning of this question. An estuary is an area where a freshwater river meets a saltwater tidal area. Phosphates come from sources such as fertilizers and detergents/soaps and they are also naturally occurring in

sediments. There is no direct relationship between estuaries and the release of phosphates.

OPTIONS BESIDES SPRAYING

- You are telling me that you cannot put machines in Kissimmee River, Indian Prairie, Harney Pond, etc. to trap hyacinth coming into the lake which is where most of it comes from
- Ineffective mechanical work. Use conveyer system at choke points
- Why not new technology? Drones can do spraying very accurately?
- More scrapes
- Disposal on private land possible
 - **FWC response:** We look at new technologies when available, but currently are not aware of any work where drones are used to do the actual spraying. We do use airboats and helicopters and can use GPS to get accurate areas and coverage. We have been consistently trying to reduce the amount of invasive floating plants that enter from these inputs by managing them before they enter the lake. South Florida Water Management District has also installed conveyer systems at several pump stations around the lake to trap these invasive plants before they can reach the lake. FWC has organic sediment removal (scrapes) projects planned for low water periods. These projects have tremendous ecological value, but they are very expensive and rely on extreme and prolonged low lake levels. These are not the type of projects that can be accomplished on a regular basis, but instead occur when water levels allow.

FISH & WILDLIFE

- With all of the negative connotation coming from both coasts that are accusing Lake Okeechobee and surrounding farmers causing it, is the FWC doing anything to promote Lake Okeechobee as a viable fishery? If not, why aren't we if FWC is doing all this for cleanliness of the waterway?
 - **FWC response:** FWC has promoted the excellent Lake Okeechobee fishery, and will continue to do so. Some actions are less visible than others, such as working with media and tournament organizations to get local, state, and national attention on the high-quality fishing available on Lake Okeechobee. The lake is also listed on three of our "Top Spots" lists ([visit them here](#)), which Google Analytics show to be quite effective at communicating our message thanks to high visitation rates. [TrophyCatch](#) is another way we're promoting bass fishing across Florida, including Lake Okeechobee.
- What happens to the big females and eggs after hauling them around in the livewells all day?
 - **FWC response:** In our answer at the meeting we potentially overstated survival of bass weighed-in during tournaments. In published studies, many of which were not conducted in Florida, tournament mortality has been highly variable and related to water temperature, time of year, and other factors. In these studies, this mortality ranged from 1% to as high as 76%. FWC has continuing research underway looking at

conditions bass experience in livewells during summer tournaments in Florida. The intention is to formulate suggestions for tournament anglers to further minimize mortality following weigh-in.

- Is Lake O stocked?
 - **FWC response:** In general, no it isn't; it isn't needed for Largemouth Bass. Lake Okeechobee is a healthy, vibrant system with extensive marsh and littoral areas that provide ample spawning and foraging habitat. That said, in 2009 in Cody's Cove and in 2010 in Tin House Cove, some experimental stocking occurred with bass from the Florida Bass Conservation Center as part of a research effort. Sunshine bass (hybrid striped bass) are stocked at the Kissimmee River and the Caloosahatchee River, and some of those fish make it into the lake.

- Are bass produced in Florida?
 - **FWC response:** Yes, FWC produces Largemouth Bass fingerlings at both of our freshwater hatcheries, Blackwater Fisheries Research and Development Center and the Florida Bass Conservation Center. To learn more, [click here](#). There are also private hatcheries that produce bass in Florida for stocking private waters.

- Where are the bream? They have no spawning areas.
 - **FWC response:** Members of the sunfish family spawn by fanning out distinctive nests over firm, for example sandy or marl, bottoms, frequently in shallower protected areas, sometimes in large groups of nests. Standard sampling (electrofishing and angler survey) suggests that Lake Okeechobee bluegill and redear sunfish abundance and catch, while variable annually, are within a typical or expected range.

- What is the haul seine boundary?
 - **FWC response:** The boundary is lakeward of a set of delineated GPS coordinates incorporated in the haul seine permit, except for certain areas within the lake as indicated in Florida Administrative Code 68A-23.012 Special Regulations on Lake Okeechobee. There are two sets of GPS boundaries specifically for water levels above and below 11.0 feet NGVD. If you'd like more specific information on the haul seine program in Lake Okeechobee you can contact the fisheries biologist for the lake.

- When do snail kites nest?
 - **FWC response:** Snail Kite nesting has been documented in all 12 months in Florida, but the majority of nesting occurs between the months of March and June. When and how long Snail Kites will nest is dependent on water levels and snail availability.

- If predation occurs, will snail kites re-nest?
 - **FWC response:** Yes, as long as there are still good water levels and food conditions. If conditions are still good after raising a successful nest, Snail Kites will try to nest again.

- Are the exotic snails affecting the snail kites?

- **FWC response:** When the exotic apple snails first appeared in Florida there was a great deal of concern that Florida Snail Kites, particularly juveniles, wouldn't be able to get the snails out of their shells because of their larger size compared to the Florida apple snail. However, the kites quickly figured out that there are plenty of exotic snails of all sizes out there and started taking snails that were more similarly sized to the Florida apple snail. Snail Kites now appear to feed indiscriminately on both Florida and exotic apple snails but the exotic snail has a longer lifespan, produces more young, and can tolerate a wider range of habitat conditions, so it is often more abundant in wetlands around Florida. What we don't have enough information on, however, is whether the exotic apple snail is causing changes in the vegetation of Lake Okeechobee (and other wetlands) that could be having negative impacts to Snail Kites and other wildlife.

SUGGESTIONS FOR TASK FORCE

- I think appointing fishermen from Clewiston and Okeechobee to be on the task force to be part of the decision making would be a huge asset to the task force for the fishermen's point of view
- Can we work together? Task force? Focus groups?
- Have focus groups around the lake where anglers meet, then the representative of each can join task force meetings to give their collective input.
 - **FWC response:** We welcome public participation in this process and would love to have their participation. The local management group and Interagency Task Force can help with this process; the Task Force has bi-monthly meetings in which the public are welcome. Please see link for meeting dates: <https://www.floridainvasives.org/okeechobee/>. One of our goals as we started this process was to have a sustained and positive engagement with Lake Okeechobee stakeholders. We plan to have additional meetings by which to accomplish this.

MEETING STRUCTURE

- How many more open meetings this year? We need more!
- Will you ask for meeting evaluation after this meeting
- We came to give you input, not for a lesson we all already know. We are the ones out there everyday seeing what is happening
- This forum/style doesn't work
- Need moderator
- For the lay public, have common names or a picture of the plant so they are aware of what we are talking about.
 - **FWC response:** We thank everyone for their participation in the meeting. While we can agree that everyone's expectations were not fully met, we believe we did have a productive meeting and took a valuable first step. We hope this follow up document and meeting summary helps continue and further the discussion. FWC has conducted our own evaluation of the meeting, and will use that in our efforts to plan the next meeting(s). We will also incorporate the suggestions and comments (written and

verbal) we received during the evening. We have not set a specific number of additional meetings to hold or a specific date for the next one.

OTHER

- Will you ever reopen Moorehaven canal where cable cross canal between Moorehaven and Lakeport?
 - **FWC response:** If you are referring to the current work along Moorehaven canal, Glades County is the responsible agency for this project. FWC has not been involved in these closures.
- I was 38 years old when I moved to Florida – I am now 74. Same problems then as now. Are we winning or losing this game?
 - **FWC response:** Winning. Lake Okeechobee is a healthy and vibrant system. Snail Kite nesting hit a peak for recent history this past season; crappie abundance is increasing, as are catch rates, following hurricane impacts; forage species are increasing; bass fishing is good, and the lake continues to support over 500 tournaments a year. Every year can't be the best, but our progress and management are in the right direction.

ADDITIONAL COMMENTS

- The lake quality has been going down in the last five years
- There is muck all over the lake
- If the lake hits 10' -> redneck burn
- Create new trails – talked to Brent
- Continue to keep trails and access areas open
- Have a pamphlet at marinas that explains what we are doing.
- Lack of LE on the lake
 - **FWC response:** Thank you for your participation in the meeting and your specific comments. We will share these comments with appropriate staff for consideration in our planning efforts.
- Provide an avenue to allow stakeholders to report potential violations or concerns (potentially online).
 - **FWC response:** If you suspect a fish, wildlife, boating, or environmental law violation, report it to the FWC's Wildlife Alert Program: 888-404-FWCC (3922); on cell phones *FWC or #FWC; online at <http://myfwc.com/contact/wildlife-alert/online/>; via text/email at Tip@MyFWC.com. For other concerns, please contact our local biologists directly (information can be found in contact sheet included with this document).

LAKE OKEECHOBEE CONTACTS

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