Lake Okeechobee: Floating Plant Management

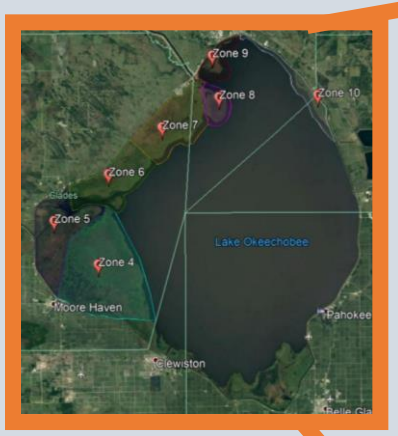
The photos and maps below illustrate the location of Water Hyacinth and Water Lettuce Lake Okeechobee. Google Earth imagery is used solely to show the GPS location of where photos were taken on the lake, the imagery is not used for plant management decisions. Floating plant acreage is estimated to be around 665 acres as of the June interagency flight. Lake Okeechobee being in maintenance control for floating plants will greatly diminish the volume of plants being treated and the amount of herbicide being used on the lake. Maintenance control will also lower, if not eliminate the occurrence of boat ramp, boat locks and canal navigational closures due to floating plant blockages.

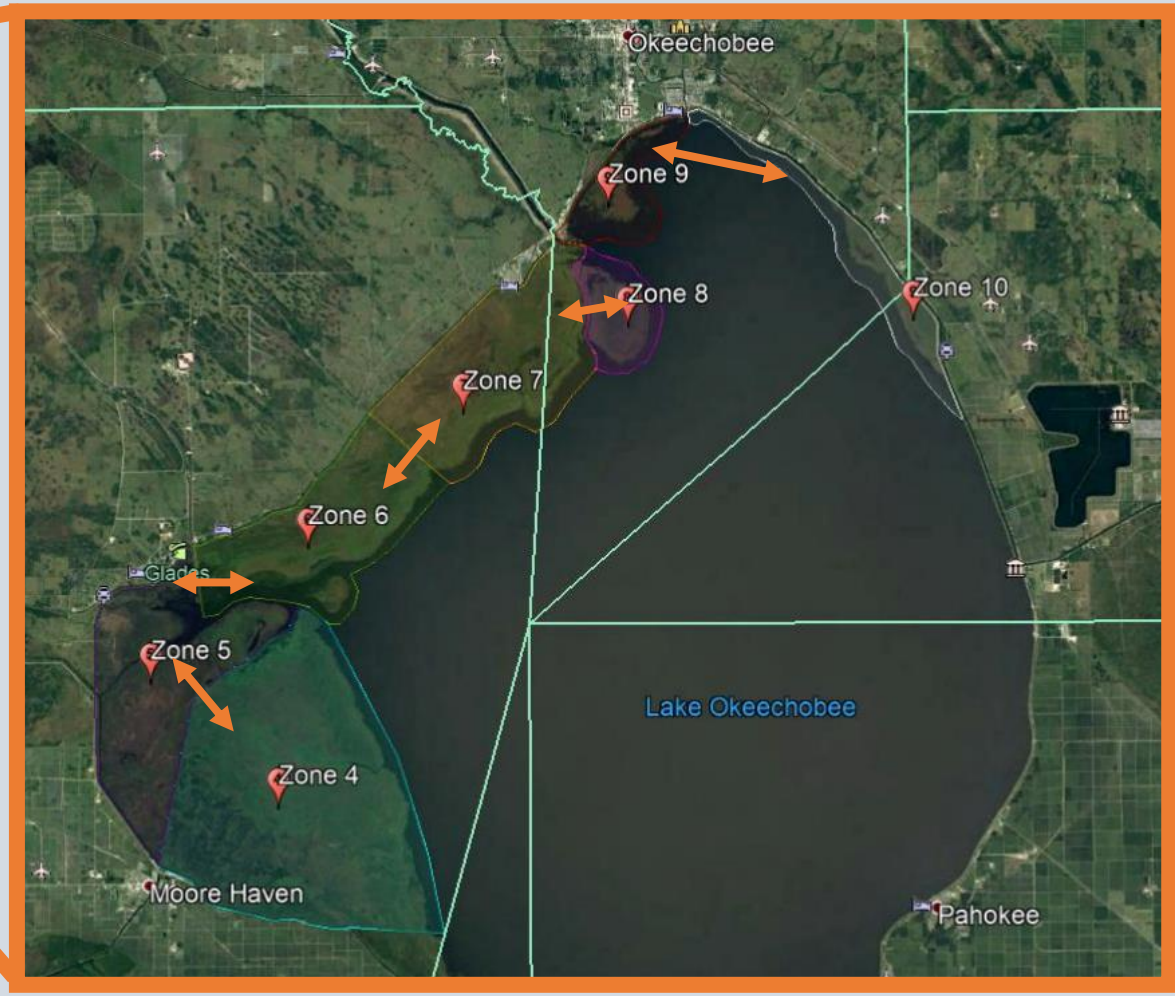
Maintenance control

Maintenance control is a management philosophy of managing invasive plants at the lowest feasible levels. The maintenance control goal for Lake Okeechobee has traditionally been 500 acres. Managing floating plants at these levels reduces the volume of plants being managed as well as the amount of herbicide being used. Floating plants can double in size every 7-14 days with close to exponential growth potential. When floating plants are out of maintenance control on the lake large volumes of plants can be pushed by wind to block navigational channels, boat ramps/locks and water control structures. These blockages can take weeks and even months at time to clear. The photo on the left shows floating plants beginning to expand in Eagle Bay at a level warranting management as to prevent the potential of the plants expanding to levels shown in the photo on the right from August 2020 interagency flight.

The maps to the right show the FWC IPM managed zones on Lake Okeechobee.

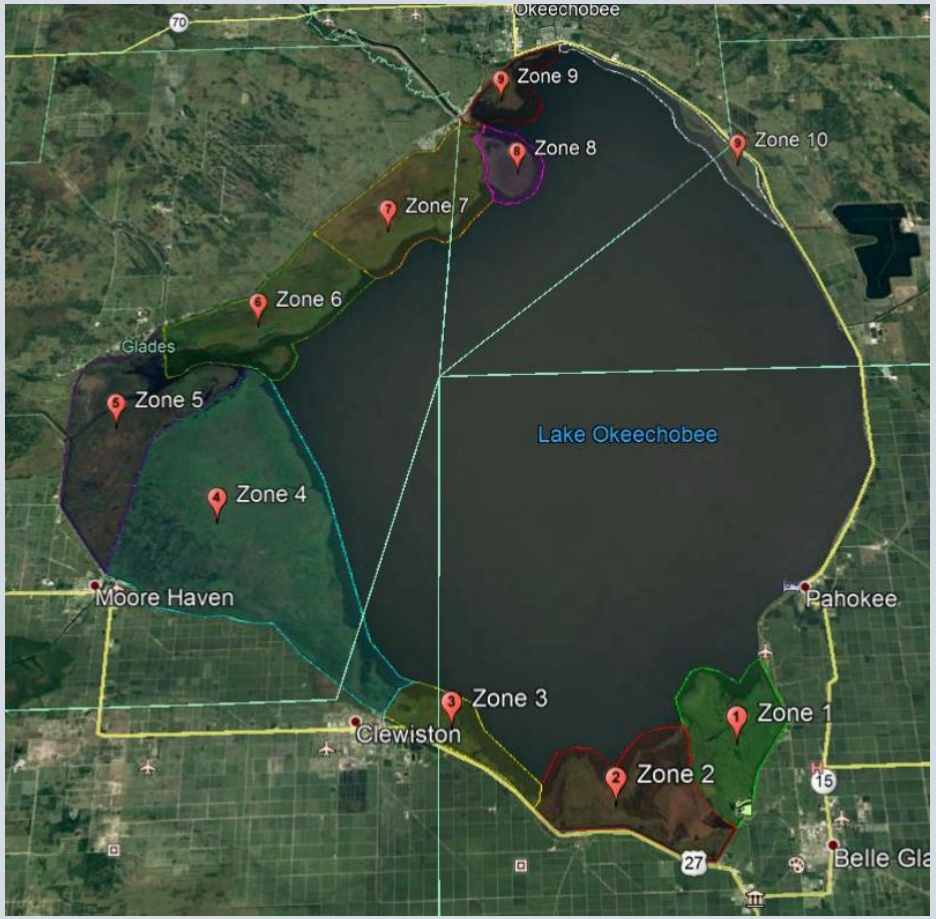
This plan would allow contractors, after approval to rotate between zones. Some zones may take longer than others, but most are expected to be able to be fully swept in 4-6 weeks.





This will diminish the number of contractors in one area while also covering more ground. Now that the lake is around maintenance control levels for floating plants, rotating around the lake and keeping plant populations low will allow for increased ability to adjust operations around fishing and hunting activities on the lake. Keeping invasive floating plants at maintenance control levels will lower the volume of plants being managed as well as lower the amount of herbicide being used as well as diminish the number of navigational and boat ramp blockages..

Interagency flight May



Lake Zones	Average
1. Torrey & Kreamer	10.75
2. Ritta	35.5
3. East Wall- Coot Bay	17
4. West Wall – Whidden	291.5
5. Fisheating Bay	28.5
6. Harney – Indian Prairie	134.75
7. Indian P.- Kissimmee	99.25
8. King's Bar	12.625
9. Kissimmee- Taylor Cr.	24
10. Taylor Cr.- Chancey	11.25
TOTALS	665.12

Lake level on 6/11/2021 – 12.6

Flight update

Zone 4 has by far the highest accumulation of floating plants. The nutrient reduction project area near Indian Prairie is the primary influencing factor for the high floating plant acreage in zones 6&7.

Interagency flights are monthly helicopter flights around the lake to estimate floating plant acreage as well as track other projects from the air. Biologists from FWC, USACE and SFWMD attend the monthly flights. While flying through each zone acreage is estimated by each biologist and then averaged. Photographs are taken during the flight to track projects, document an aerial perspective of the lake and assess contractors' work.

How contractors will move zones

Surveys

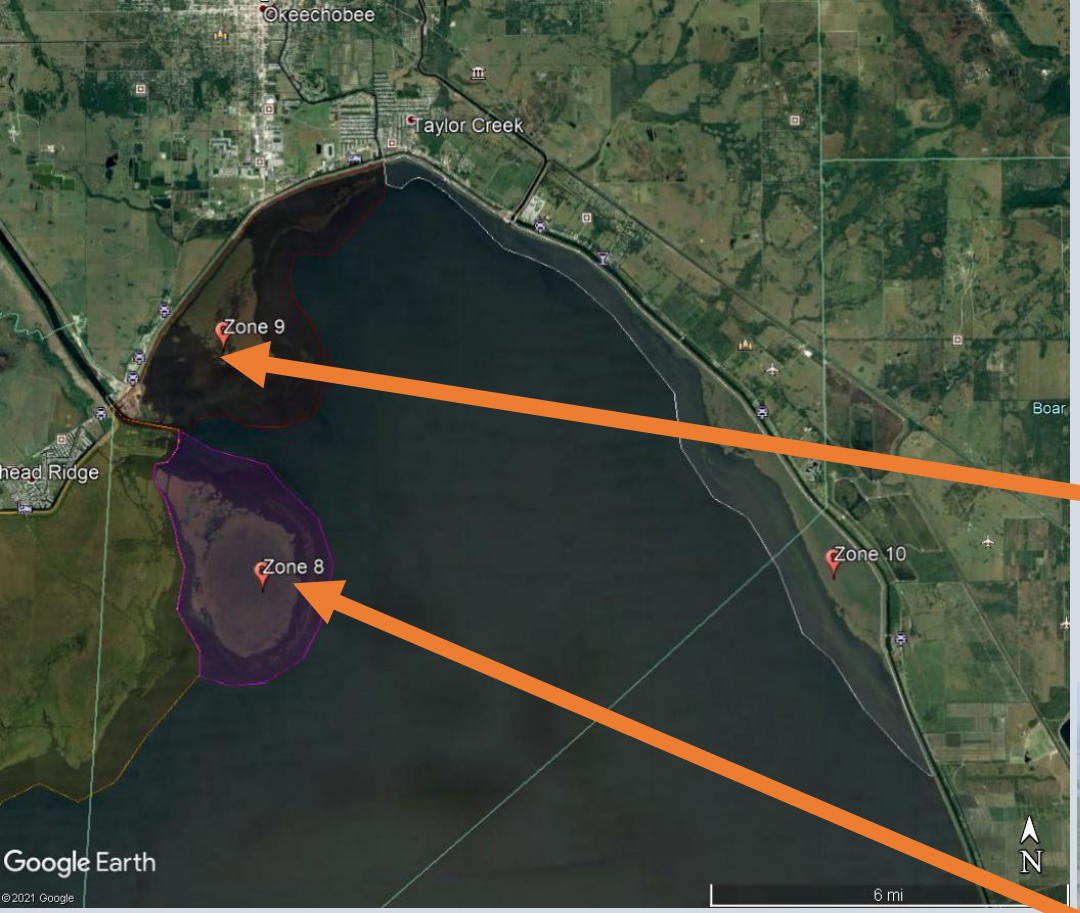
Working Group

FWC Habitat and Species Conservation Division approval

Contractors working the lake will work a particular zone until conditions or timing prompt a move elsewhere. Moving zones on a rotational basis to keep up maintenance control will begin with surveying. Surveys are conducted multiple times a week by airboat and once a month by helicopter.

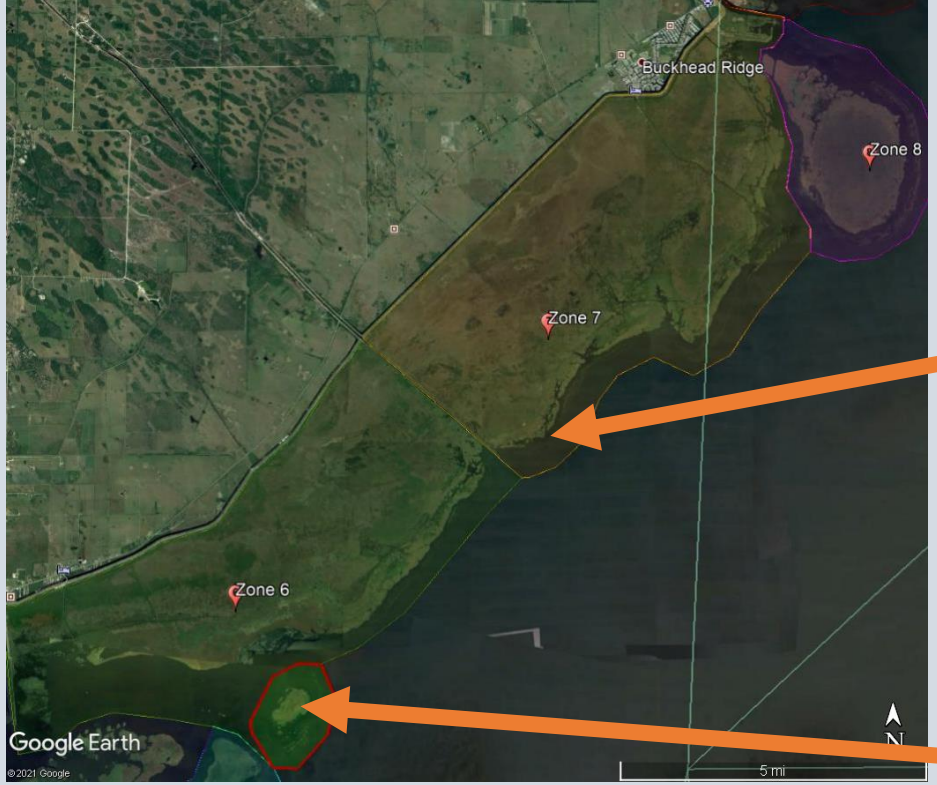
Surveys will then be used to create a brief zone update for where contractors will be moved to which will show the current conditions, plant hotspots and an estimate for the length of time contractors will be present. This will then be sent to an interagency working group of biologists from FWC, the US Army Corps of Engineers and the South Florida Water Management District for comments, alterations or changes based on stakeholder driven projects, hunting areas, fishing events, ongoing operations, etc.

Once the zone movement update has been through the comment and correction period with the working group it will be sent up for a final division approval before the work in the new zone can be scheduled. This process will be repeated for any change to ongoing plant management operations.



The top photo shows floating plants beginning to expand within Eagle Bay Island in zone 9. The bottom photo shows the northeastern tip of King's Bar in Zone 8 where both Water Lettuce and Hyacinth build up.

Proactively managing floating plants can prevent incidences like ones shown in the above photos. The photo on the left shows the Okie-Tantie Airboat ramp (blue arrow) blocked with floating vegetation taken on the August 6th, 2020 interagency flight. The photo on the right was taken on the same interagency flight and shows the Lock-7 boat ramp (blue arrow) in Eagle Bay completely blocked by floating plants. This was the result of the lake being out of maintenance control. The Okie-Tantie boat ramp blockage was cleared relatively quickly but the Lock-7 ramp blockage took 2-3 months to completely manage and restore public use. Treating floating plants before they become an issue like the ones pictured above not only reduces the number and frequency of boat ramps, boat locks and navigational blockages but also drastically reduces the amount of herbicide used on the lake to manage floating plants.



Top right photo shows the southern end of Zone 7 where floating plants have not been managed for over a year. A mechanical project is expected to take place in this location in spring 2021. The bottom photo show Bird Island where an ongoing research moratorium project is ongoing. No floating plant management treatments are to take place while being monitored long term.

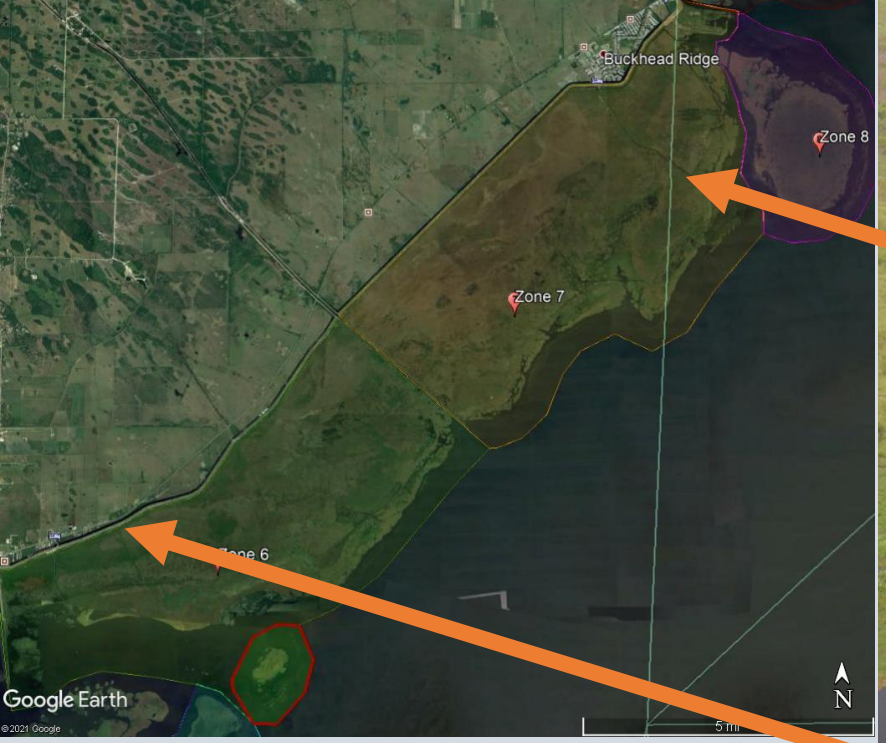


Photo to the right shows Pierce Canal clogged with around 20+ acres of floating plants. Keeping floating plants at maintenance control levels will prevent massive blockages like this one which took over a month to clear. High floating plant levels also resulted in multiple blockages of the Dyess Ditch boat ramp like the one pictured bellow from October 2019.

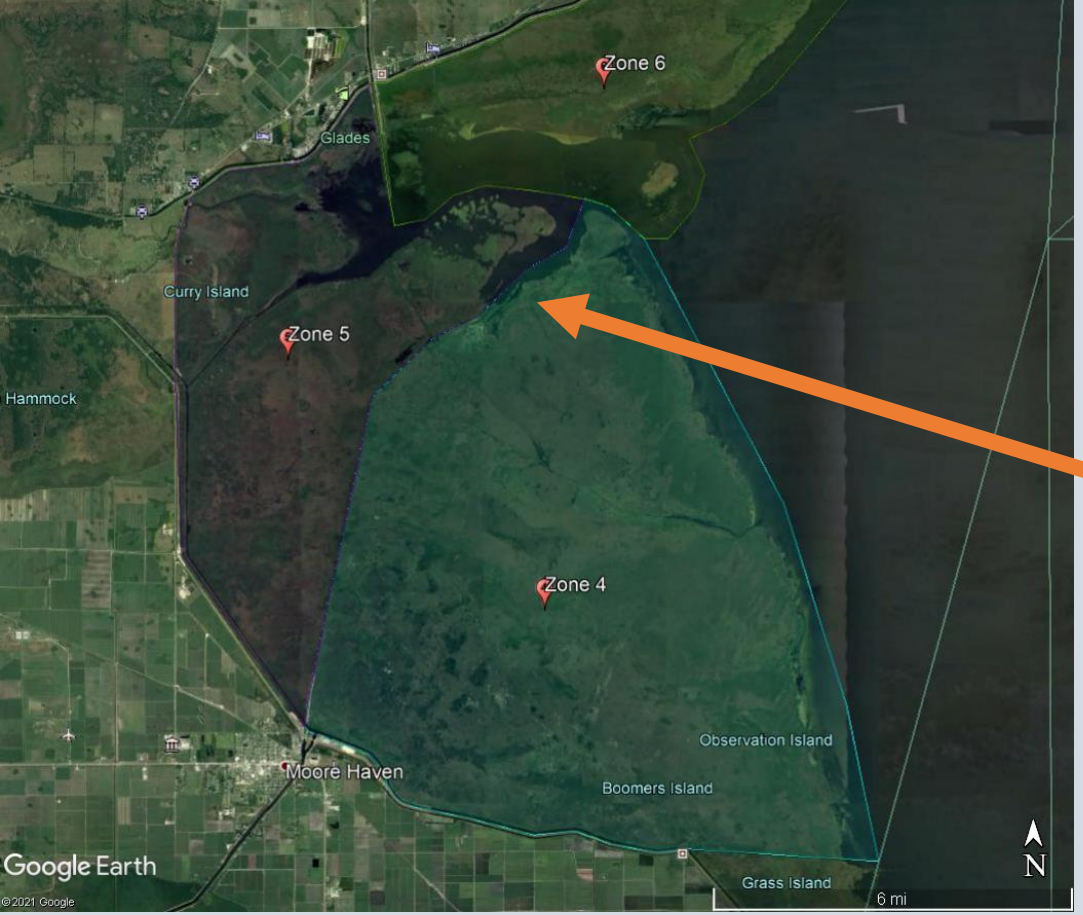
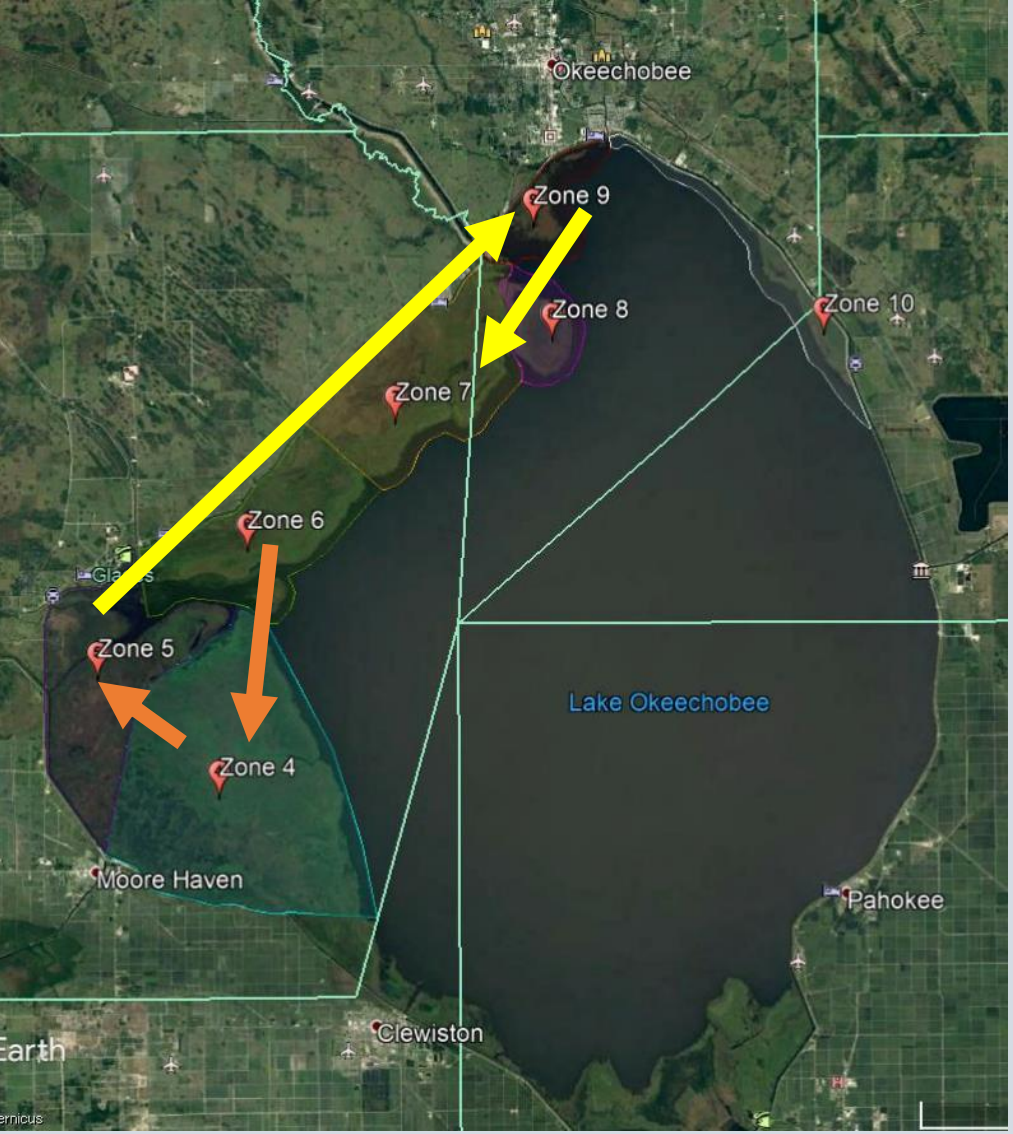


Photo to the right shows part of a large accumulation of floating plants built up along the northern edge of Zone 4.

Floating plant plan



AAM will move from zone 6 to zone 4. Most of the work in Zone 4 will take place along the marsh edge where large mats of floating plants have accumulated and are expanding over SAV beds. Zone 4 is expected to take 8-10 weeks to fully sweep.

After zone 4 is in a manageable state AAM will then move to zone 5 to primarily sweep the Monkey box to keep the area in good shape for the fall.

FWC contractor Aquatic Vegetation Control is managing Luziola subintegra in Fisheating Bay in zone 5 will move to manage floating plants and Luziola subintegra in zone 9. Zone 9 is expected to take 4-6 weeks to fully sweep.

After zone 9 has been swept AVC will move to zone 7 to manage floating plants.

This move will help spread contractors out around the lake and should keep floating plants at a manageable state going into the summer.

Zone 4

current work area (AAM)

Photo shows one of the areas needing a re-treatment on the marsh edge in the western marsh. This zone contains a majority of the lakes floating plant acreage with 291 acres. Finishing up the treatment here will help native SAV beds expand.

Zone 5

Future work area (AAM)

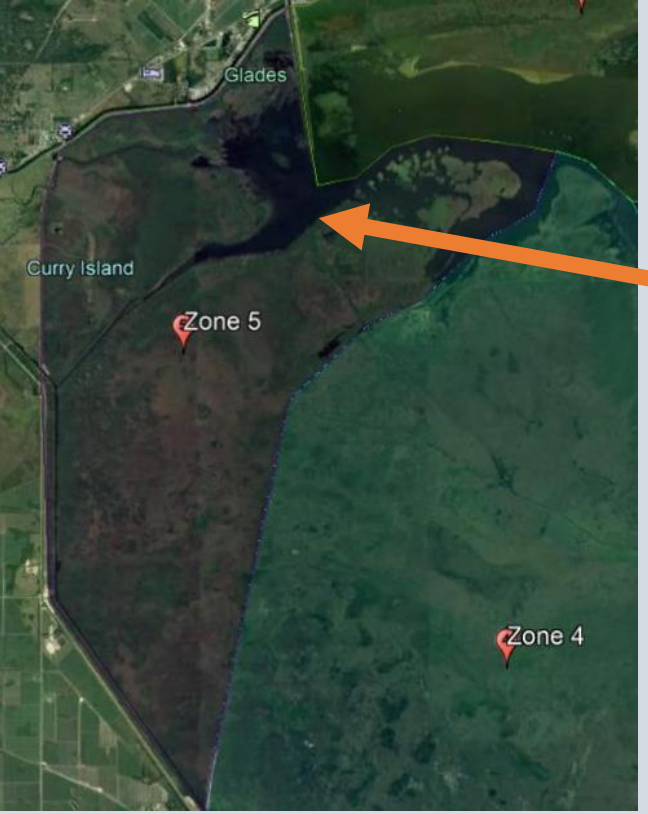
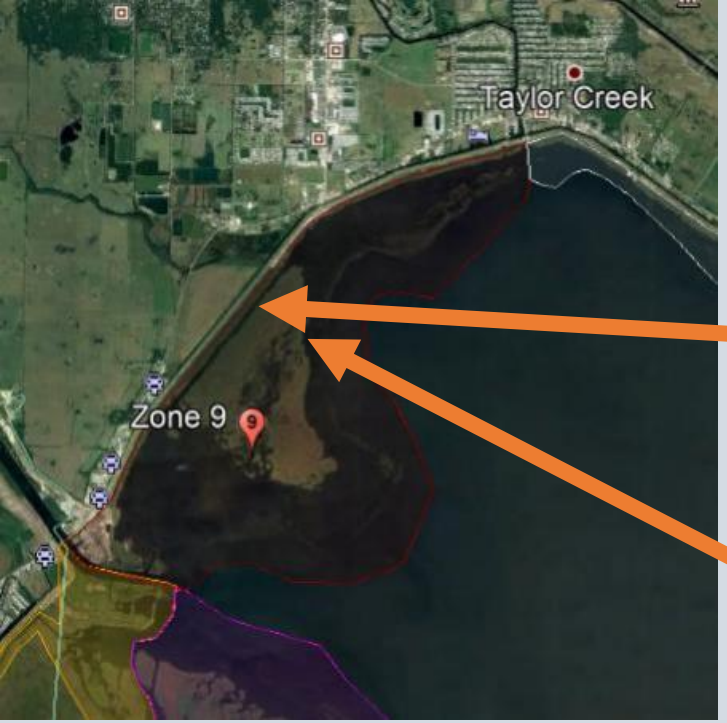


Photo to the right shows thick band of floating plants building along the edges of a spoil island. Floating plants tend to build up in the western side of the lake in the summer. After zone 4 has been completely swept sweeping through zone 5, focusing on the southern end of zone 5 should keep management ahead of this seasonal accumulations of floating plants.

Zone 9

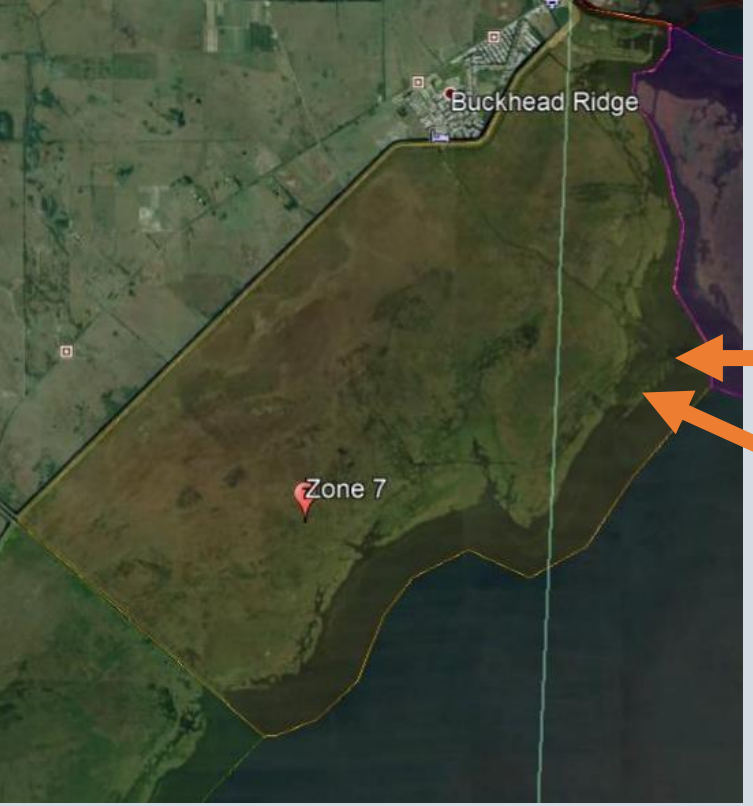
current work area (AVC)



Middle photo shows part of a 25 acre band of floating plants lining government cut which move back and forth with wind. Without management these plants can expand, cut off navigation and block nearby boat ramps. Bottom right photo shows eastern side of Eagle Bay Island where 15 acres of floating plants are located either on edge of the Island or along the shoreline. The shoreline can be seen in the top right photo taken by on airboat survey.

Zone 7

next work area (AVC)



Top right photo shows the end of the Pierce Canal where several mats of floating plants are covering and shading out native SAV. Bottom photo shows some of these same floating plants covering native SAV from airboat survey. Managing these areas will keep the area in maintenance control and will prevent blockages, navigational issues and larger treatments in the future.