

East Lake Tohopekaliga Drawdown and Habitat Enhancement

Project completed Summer 2020

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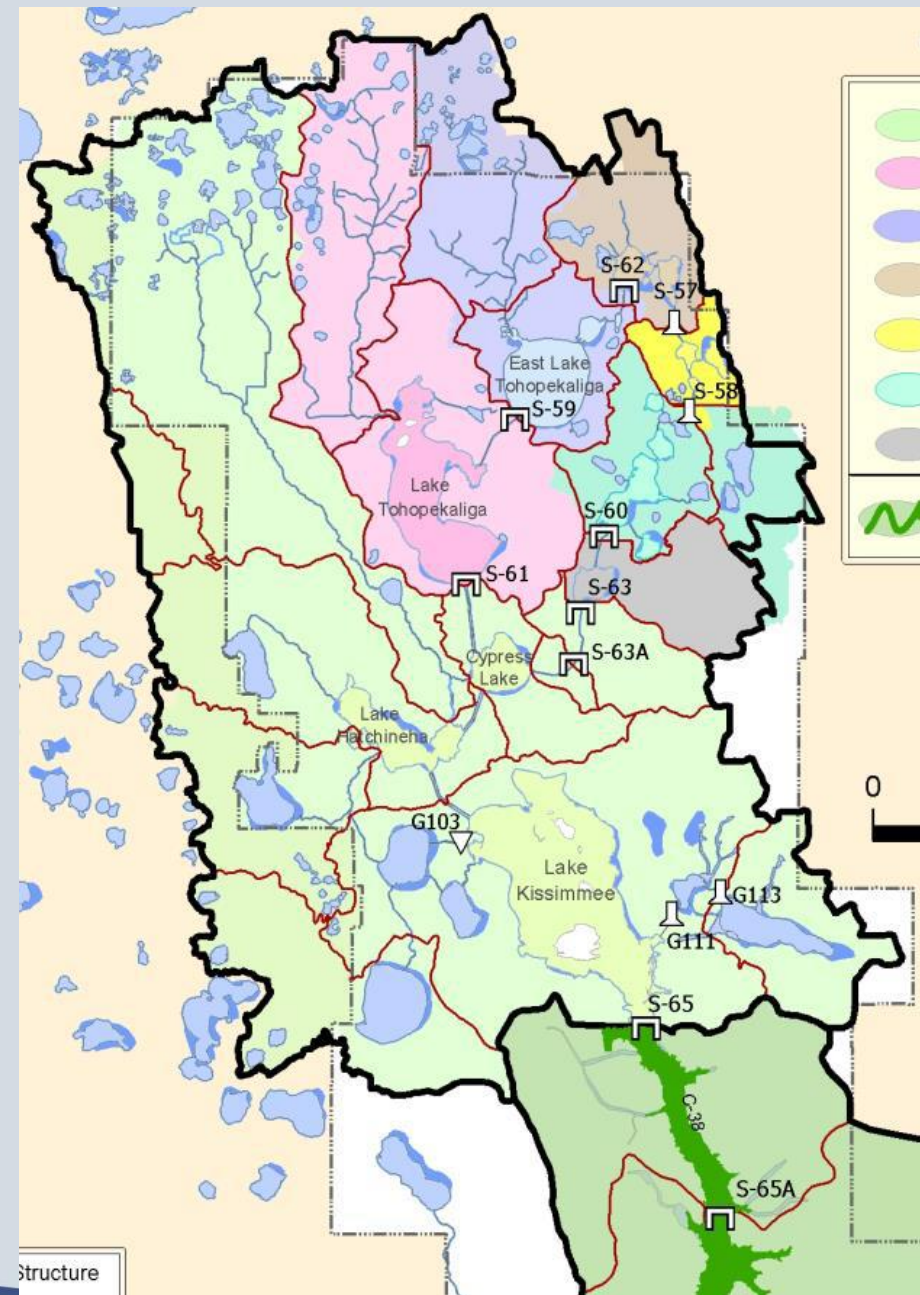


Geography

- Osceola County
- Kissimmee Chain of Lakes
- Most populated area of Upper Kissimmee Basin
- Bogggy Creek is primary tributary of East Lake
- East Lake Toho is 11,968 acres, 2nd largest lake in Osceola behind Lake Toho
- The two lakes are link together by Canal 31/St. Cloud Canal that is approximately 3 miles long and controlled by the S-59 structure

Project Background

- Water level stabilization and pollution from development are major contributors to deteriorating aquatic habitat which requires littoral zone rehabilitation
- Long term benefits include organic sediment and nuisance vegetation reduction; improved recreational fishery habitat and littoral zone water quality conditions; improved Everglade snail kite foraging habitat; and improved navigation and boat access
- Habitat restoration project was previously implemented on East Lake Toho in 1989. Extreme drawdown coupled with organic sediment removal, burning, and disking was used to restore aquatic habitat which had severely deteriorated due to long-term stabilization of water levels. The 1989 effort restored 882 acres of lake-bottom along with 13.9 miles of lakeshore. Approximately 305,000 cubic meters of organic sediments was scraped and hauled from the lake's littoral zone, particularly along the western shore.



Project Concerns/Issues

- Gravity drawdown not available due to downstream stages, utilization of pumps required for drawdown, 400 cfs capacity > 250M gallons per day.
- Drawdown of Lake Runnymede could result in creation of floating tussocks, sheet piling needed to maintain water levels in Lake Runnymede during drawdown.
- Nearby upland disposal not available for spoils, requiring construction of in-lake disposal islands.
- Snail Kite Nesting
- Archaeological Resources
- Weather



Construction Commencement

- Install steel plate weir at Lake Runnymede box culvert in November 2019
- Pumps mobilized in December 2019, begin 24/7 pumping
- Archaeological survey on lake bottom conducted February/March 2020
- Equipment on lake bottom March 2020



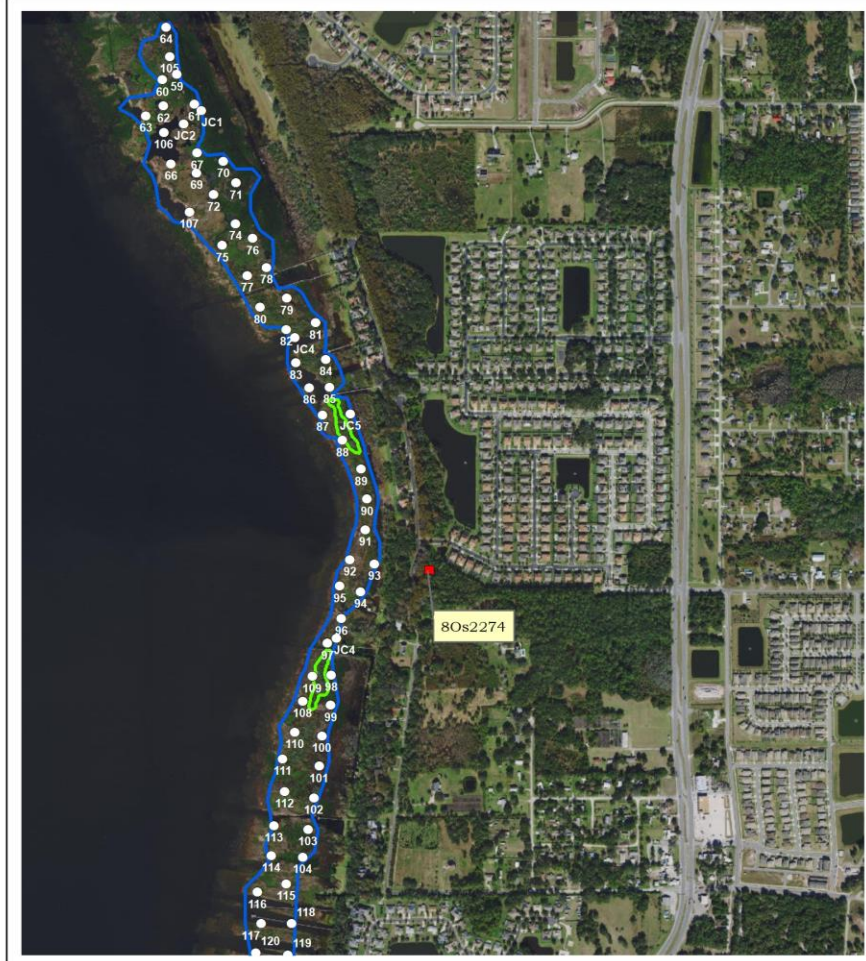
Drawdown Phase



Performance Testing and Calibration

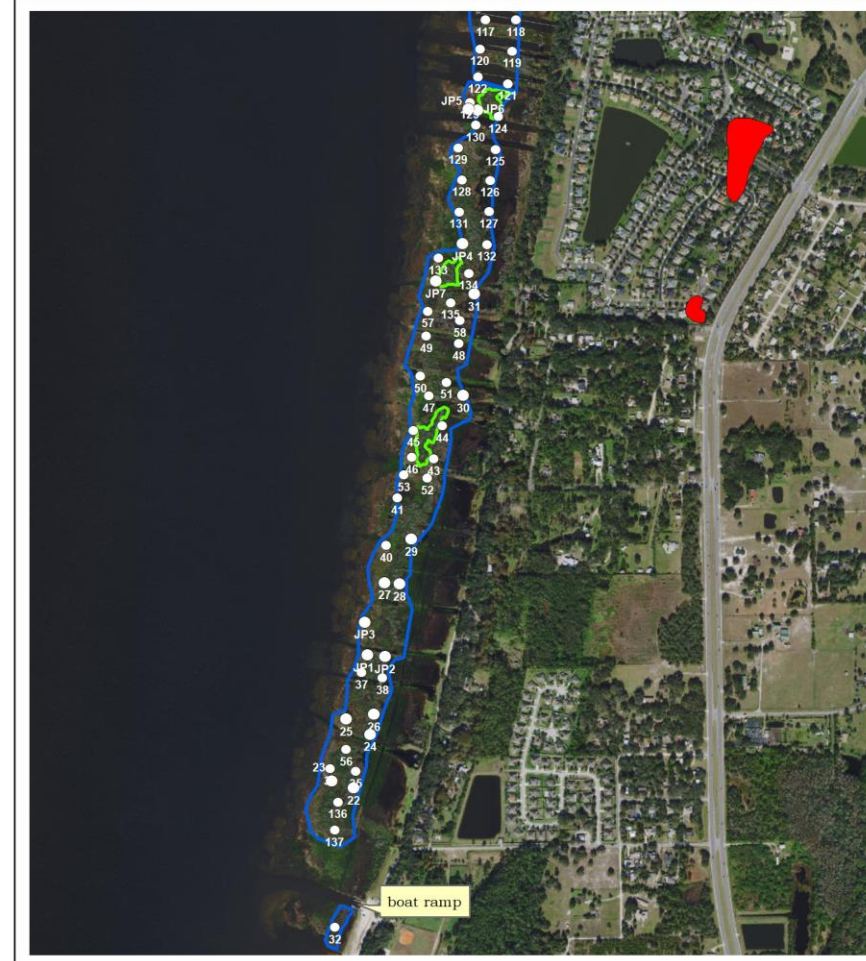


Archaeological Survey



N East Lake Tohopekaliga
 Osceola County, Florida
 Township 25 South, Range 30-31
 East
 Base map: ESRI aerial imagery, Jan 2019
 0 100 200
 Meters

- Legend
- scrape area
 - islands to remain
 - archaeological site
 - historic resource
 - historic structure
 - negative shovel test



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Commencement of Work on Littoral Zone



Scrape and Scrape...and Scrape...and Haul...



Begin Forming Spoil Islands



Additional Habitat Management Activities



Continued Scraping and Hauling.....



Cleaner shorelines...



Improved access....



Aerial view...



Island Grading and Stabilization



Lake Re-Fill



Post-Project Re-Vegetation



Post-Project Re-Vegetation



Post-Project Re-Vegetation



Project Summary

- >110,000 Cubic Yards of Organic Sediments Removed
- Two Spoil Islands of Approx. 3.5 acres/each
- 3.5 miles (145 acres) of Littoral Zone Enhanced along the Eastern Shoreline
- Planted 30,000 *Sagittaria lancifolia* (Duck Potato) and 46,000 *Paspalidium geminatum* (Kissimmee Grass) plugs in May 2021



Questions?

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