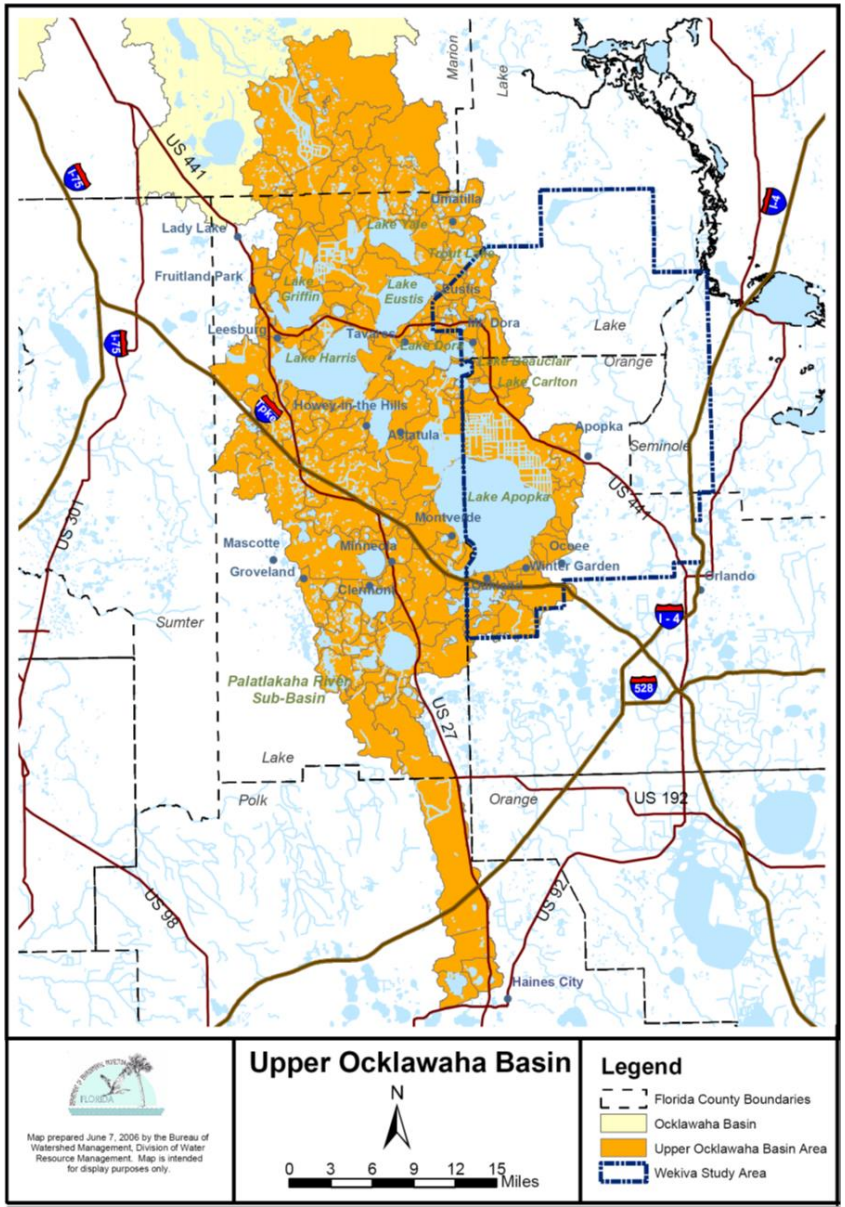
Upper Ocklawaha BMAP Meeting

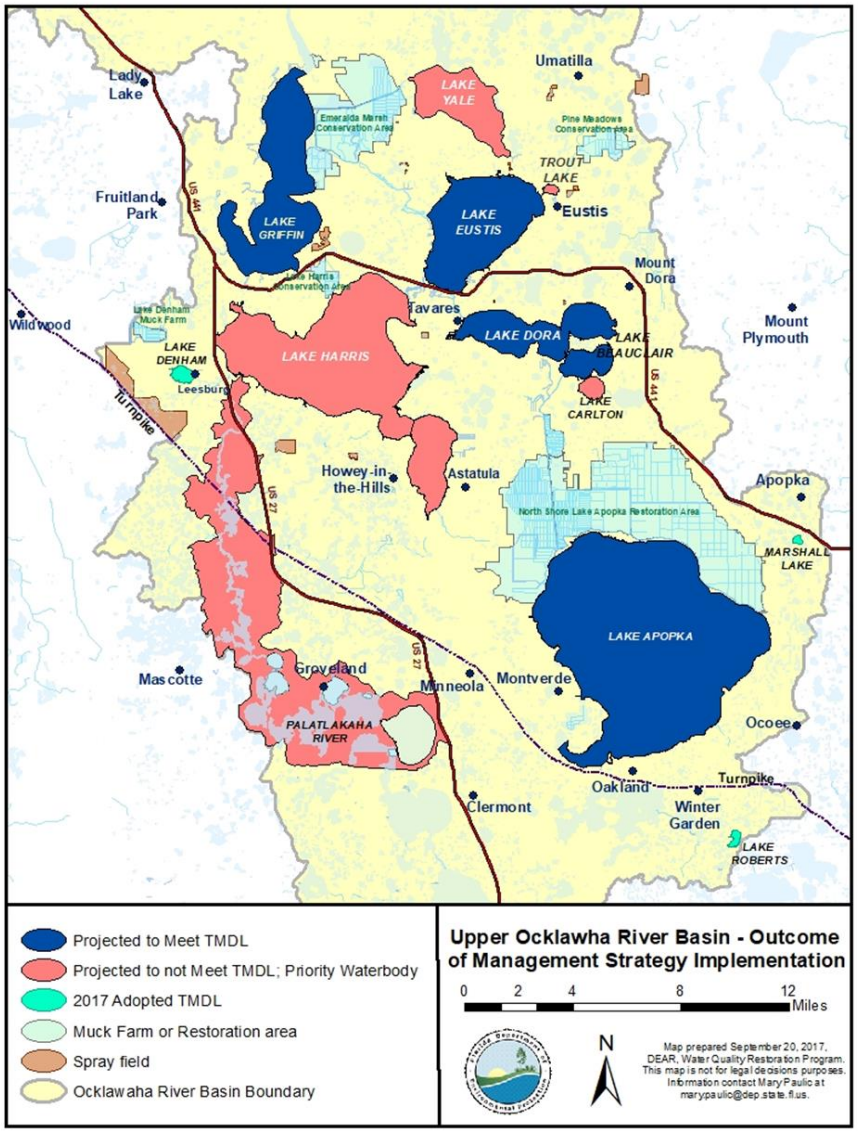
Mary Paulic
Mary.Paulic@FloridaDEP.gov

October 15, 2020

Upper Ocklawaha Basin



Impaired Waterbodies



AGENDA

Welcome and Introductions (*Tiffany Busby*)

Overview of SB 712 *(Kevin Coyne, FDEP)*

Project Updates and Monitoring Overview *(Mary Paulic, FDEP)*

Water Quality and Loading Update *(Rolland Fulton, SJRWMD)*

Verified Impaired Waterbodies within the Upper Ocklawaha Basin (*Kevin O'Donnell, FDEP*)

Improvements to the NuRF *(Jason Danaher, LCWA)*

Harris Chain Management Plan Process (*Scott Bisping, FWC***)**

Other Basin News and Updates (All)

Summary and Next Steps (*Tiffany Busby*)

Project Status and Preparation for 2020 Project Reporting

- Project information reported through December 2019

Project Summary

- Added 26 new projects
  - 4 Education and studies
  - 8 Agriculture best management practices (BMP)
  - 9 Stormwater BMP retrofit/maintenance
  - 1 Reuse
  - 2 Wastewater service area expansion studies
  - 1 Decommissioned sprayfield
  - 1 Wetland restoration
- New total of 439 projects
- Information reported to Legislature through STAR report

STAR Report

- Available at https://floridadep.gov/star
- Reported that
  - 379 projects completed
  - 47 projects underway or planned
  - Allocation of stormwater loadings to local entities are complete for Priority Waterbodies 2017 TMDLs
  - Since BMAP was adopted (2007)13 projects have been canceled.
    - 1 agriculture BMP, Ridge Citrus manual
    - 12 Stormwater rehabilitation

New Project Highlights

Agriculture Best Management Practices (BMPs)

- Agriculture BMPs – improvements in irrigation and fertilizer application
  - GPS guided variable rate spreader for precision fertilizer application
  - Irrigation retrofit with weather station and soil moisture sensors
  - Irrigation conversion to low volume system

New Project Highlights

Stormwater Retrofits

- Lake County Lake Griffin Water Quality Retrofit Baffle Box
- Lake County Little Lake Harris Dirt Road Paving with grass swales and swale blocks
- Leesburg Lake Harris Venetian Center Pond wet detention
- FDOT Lake Harris Regional Pond wet detention
- Fruitland Park Lake Griffin Library Stormwater Pond dry detention

New Project Highlights

Education, Studies, Restoration

- Lake Joanna Water Quality Study
- Lake Carlton BMP Feasibility Study
- Nutrient Pollution Awareness Campaign Outreach
- Lake Denham Muck Farm Remediation
- Upgrade of NuRF Facility

New Project Highlights

Wastewater Management

- Transfer of Umatilla wastewater to Eustis for treatment – reuse
- Bates Avenue Eustis WWTP Expansion Study
- Eustis wastewater service area expansion study – eliminate septic system via connection to central sewer
- Howey-in-the-Hills wastewater service area expansion via connection of Mission Inn to central sewer

Loading Adjustments

Draft Agriculture Reductions

- Draft reductions in agriculture loading from additional BMPs

Basin	Projects	TN lbs/yr	TP lbs/yr
Palatlakaha River	PAL36	4,037	493
Lake Harris	HAR37 and HAR38	212	51
Lake Beauclair	BCL06	816	90
Lake Yale	YALE11	2,274	473
Upper Ocklawaha River Basin	UOB005 and UOB006	80	46
Lake Griffin	GRIF44	84	62

Loading Adjustments

Stormwater Management

- Draft adjustments to stormwater credits

Basin	Projects	TN lbs/yr	TP lbs/yr
Lake Harris	HAR32 and HAR39	123	25
Lake Griffin	GRIF43 and GRIF41	1*	10

*TN reduction not calculated for GRIF 43

Project Funding

- Information about FDEP grant programs is available at https://floridadep.gov/wra
- Nonpoint Source funding programs:
  - Federal Clean Water Act Section 319(h) grants and State Water-quality Assistance grants
  - Submit proposal anytime during the year. Primary review for funding periods are September/October and March/April
  - Local and state governments (including water management district) and public universities are examples of local groups eligible for funding

Project Funding

Examples of Nonpoint source projects

- Demonstration and evaluation of best management practices (BMPs)
- Nonpoint pollution reduction in priority watersheds (e.g., areas with water quality restoration plans, etc.)
  Example includes treatment of impaired waters.
- Green Infrastructure/Low Impact Development for stormwater
- Ground water protection from nonpoint sources
- Public education programs on nonpoint source management ("319 Grant" only)
- Septic to sewer projects ("319 Grant" only)

Looking Forward

- Requests for 2020 project updates will go out about early to mid-November timeframe
- Expect some changes in how project type and status are used
- Importance of providing latitude and longitude information or maps of project area where possible

Monitoring Update

- Recent and historic sampling locations
  - Starts a review of monitoring plan adequacy
  - Purpose/objectives
  - Mapping of sampling locations
  - Analyte list

Purpose of Monitoring

Primary Objectives Stated in 2014 BMAP

- Primary Objectives
  - To determine that target TP and TN (where applicable) concentrations used to develop the TMDLs are being achieved.
  - To determine if expected improvements in other water quality indicators are being achieved, particularly reductions in chlorophyll-*a* concentrations.

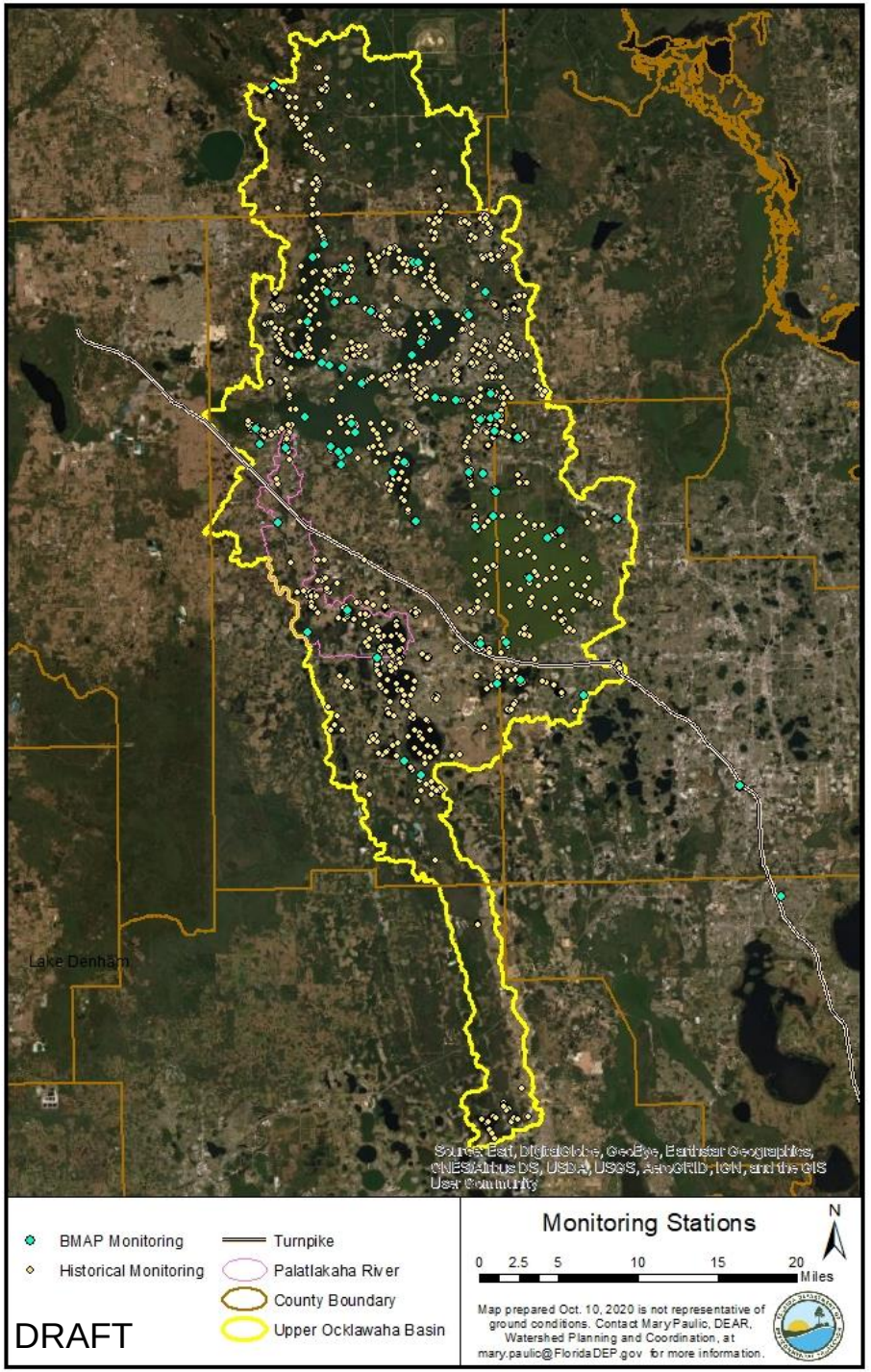
Purpose of Monitoring

Secondary Objectives Stated in 2014 BMAP

- Secondary Objectives
  - To measure tributary loadings.
  - To measure loadings associated with specific sources or projects, as feasible.

Upper Ocklawaha Basin Monitoring Stations

- Since 1956, 1,567 sampling locations identified
- 148 are recent (since 2018)

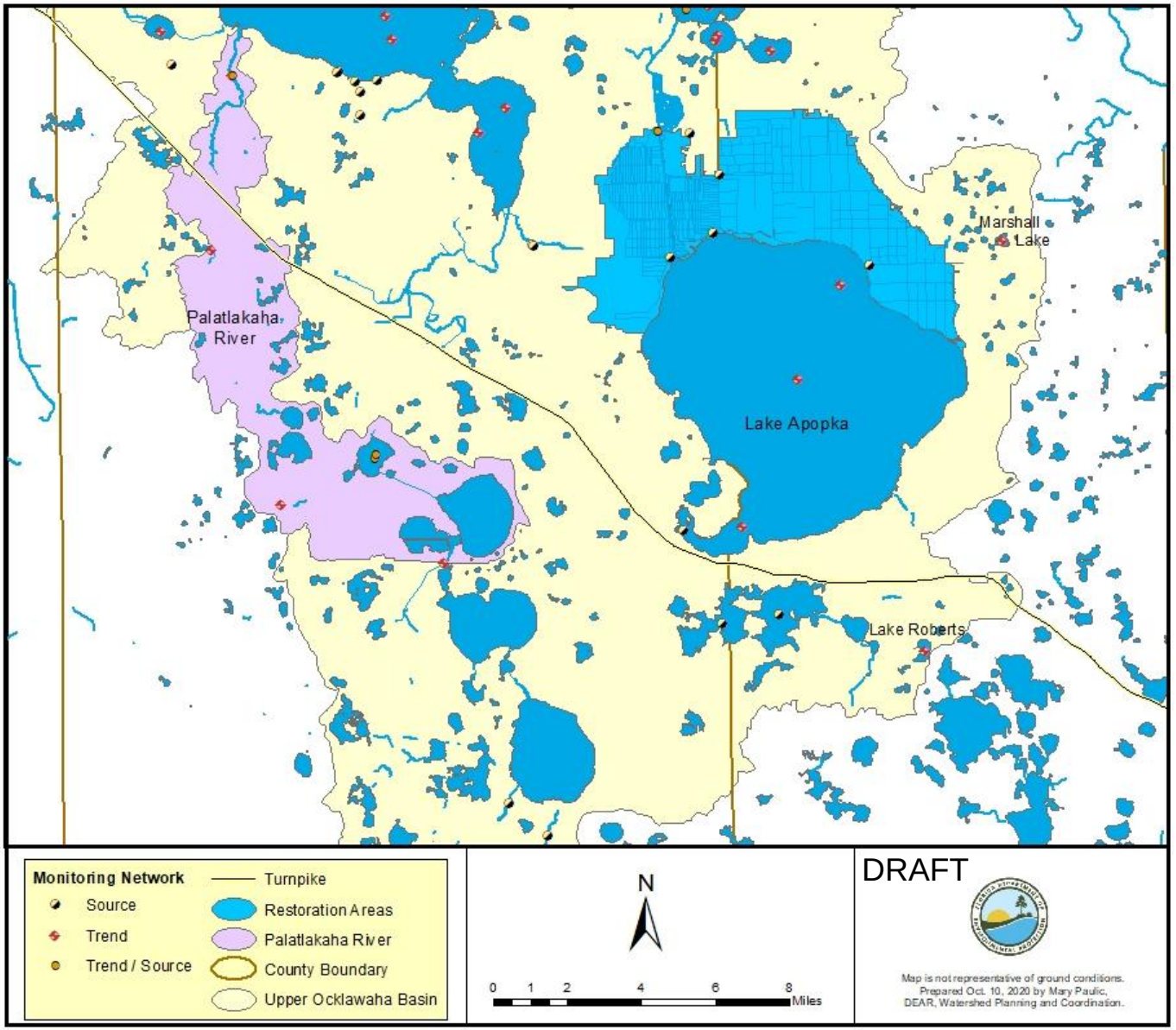


Active Sampling Locations

Status

- Three primary monitoring entities
  - SJRWMD
  - Lake County, includes volunteer network
  - Orange County
  - FDEP does periodically sample in the basin, for water quality but variable by location and analyte
    - FDEP handles biological sampling
  - Lake Watch periodically samples impaired lakes
    - Lake Watch data used as supplemental data
- BMAP stations grouped into Trend and Source networks by objective

Monitoring Stations
Lake Apopka and Palatlakaha River

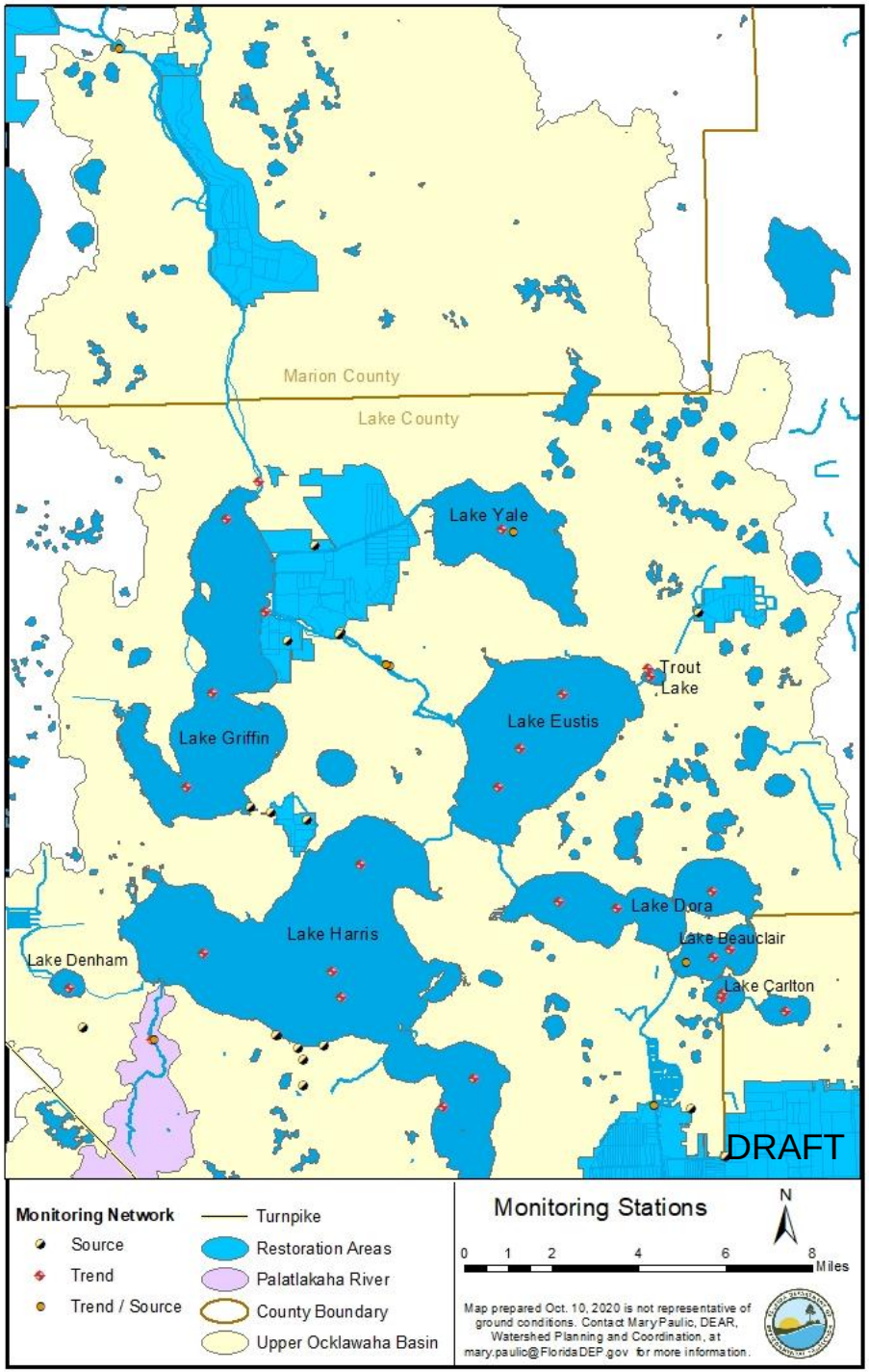


Draft Summary of Monitoring Locations

Lake Apopka and Palatlakaha River

Sub-basin	Organization	Number of Trend Stations	Number of Source Stations	Sampling Frequency	Analytes
Lake Apopka	SJRWMD	3	6	Varies; Trend monthly	Field parameters; Water chemistry; Chlorophyll-a; Secchi depth
Lake Apopka	Lake County	1		Quarterly	Field parameters; Water chemistry; Chlorophyll-a; Secchi depth
Marshall Lake	Orange County	1		Quarterly	Field parameters; Water chemistry; Chlorophyll-a; Secchi depth
Johns Lake	Orange County	2		Quarterly	Field parameters; Water chemistry; Chlorophyll-a; Secchi depth
Lake Roberts	Orange County	1		Quarterly	Field parameters; Water chemistry; Chlorophyll-a; Secchi depth
Palatlakaha River	Lake County	5	2	Quarterly-Monthly	Field parameters; Water chemistry; Chlorophyll-a; Secchi depth
Palatlakaha River	SJRWMD	2		Bimonthly	Field parameters; Water chemistry; Chlorophyll-a; Secchi depth

Monitoring Stations
Harris Chain of Lakes



Draft Summary of Monitoring Locations

Lake Harris, Lake Carlton, Lake Beauclair

Sub-basin	Organization	Number of Trend Stations	Number of Source Stations	Sampling Frequency	Analytes
Lake Harris	SJRWMD	1	2	Varies Monthly-Bimonthly	Field parameters; Water chemistry; Chlorophyll-a; Secchi depth
Lake Harris	Lake County	6		Quarterly-Monthly	Field parameters; Water chemistry; Chlorophyll-a; Secchi depth
Lake Harris Springs	SJRWMD		4	Biannually	Field parameters; Water chemistry; Secchi depth
Lake Harris Springs	Lake County		4	Quarterly	Field parameters; Water chemistry; Chlorophyll-a; Secchi depth
Lake Denham	SJRWMD	1		Bimonthly	Field parameters; Water chemistry; Chlorophyll-a; Secchi depth
Lake Carlton	SJRWMD	1		Bimonthly	Field parameters; Water chemistry; Chlorophyll-a; Secchi depth
Lake Carlton	Orange County	2		Quarterly	Field parameters; Water chemistry; Chlorophyll-a; Secchi depth
Lake Beauclair	SJRWMD	1		Monthly	Field parameters; Water chemistry; Chlorophyll-a; Secchi depth
Lake Beauclair	Orange County	1		Quarterly	Field parameters; Water chemistry; Chlorophyll-a; Secchi depth
Lake Beauclair	Lake County	1		Quarterly	Field parameters; Water chemistry; Chlorophyll-a; Secchi depth

Draft Summary of Monitoring Locations

Lake Dora and Lake Eustis

Sub-basin	Organization	Number of Trend Stations	Number of Source Stations	Sampling Frequency	Analytes
Lake Dora	SJRWMD	1		Monthly	Field parameters; Water chemistry; Chlorophyll-a; Secchi depth
Lake Dora	Lake County	2		Quarterly	Field parameters; Water chemistry; Chlorophyll-a; Secchi depth
Lake Eustis and Haynes Creek	SJRWMD	2		Monthly	Field parameters; Water chemistry; Chlorophyll-a; Secchi depth
Lake Eustis and Haynes Creek	Lake County	4		Quarterly	Field parameters; Water chemistry; Chlorophyll-a; Secchi depth
Trout Lake	SJRWMD	1	1	Bimonthly	Field parameters; Water chemistry; Chlorophyll-a; Secchi depth
Trout Lake	Lake County (volunteers)	1		Monthly	Field parameters; Water chemistry; Chlorophyll-a; Secchi depth

Draft Summary of Monitoring Locations

Lake Yale, Lake Griffin, Ocklawaha River

Sub-basin	Organization	Number of Trend Stations	Number of Source Stations	Sampling Frequency	Analytes
Lake Yale	SJRWMD	1	2	Bimonthly	Field parameters; Water chemistry; Chlorophyll-a; Secchi depth
Lake Yale	Lake County	1		Monthly	Field parameters; Water chemistry; Chlorophyll-a; Secchi depth
Lake Griffin	SJRWMD	3	5	Source varies Trend is Monthly - Bimonthly	Field parameters; Water chemistry; Chlorophyll-a; Secchi depth
Ocklawaha River	Lake County	1		Quarterly	Field parameters; Water chemistry; Chlorophyll-a; Secchi depth
Ocklawaha River	SJRWMD	1		Monthly	Field parameters; Water chemistry; Chlorophyll-a; Secchi depth

Core Monitoring Analytes

As Listed in 2014 BMAP

Core Water Quality Indicators	Lakes	Canals	Palatlakaha River
Biochemical Oxygen Demand (BOD)	-	-	√
Chlorophyll-*a*	√	√	√
Dissolved Oxygen	-	-	√
Stream Condition Index (SCI)	-	-	√
Total Nitrogen (TN)	√	√	√
Total Phosphorus (TP)	√	√	√
Trophic Condition per Trophic State Index (TSI)	√	-	-
Lake Vegetation Index (LVI)	√	-	-
Phytoplankton Enumeration and Identification	√	-	-

Supplemental Monitoring

As listed in 2014 BMAP

Supplemental Water Quality Indicators	Lakes	Canals	Palatlakaha River
Algal Biomass	√	-	-
Alkalinity	√	√	√
Clarity Measured as Secchi depth	√	√	√
Color	√	-	-
Conductivity	√	√	√
Dissolved Oxygen	√	√	-
pH	√	√	√
Temperature	√	√	√
Total Organic Carbon (TOC)	√	√	-
Total Suspended Solids (TSS)	√	√	√
Turbidity	√	√	√
Unionized Ammonia	√	√	√
Field Conditions during Sampling	√	√	√

Analyte Checklist

DRAFT Review

Entity	Core Lakes	Supplemental Lakes
SJRWMD	All	All
Lake County	All	No TOC, no unionized ammonia
Orange County	All	No TOC

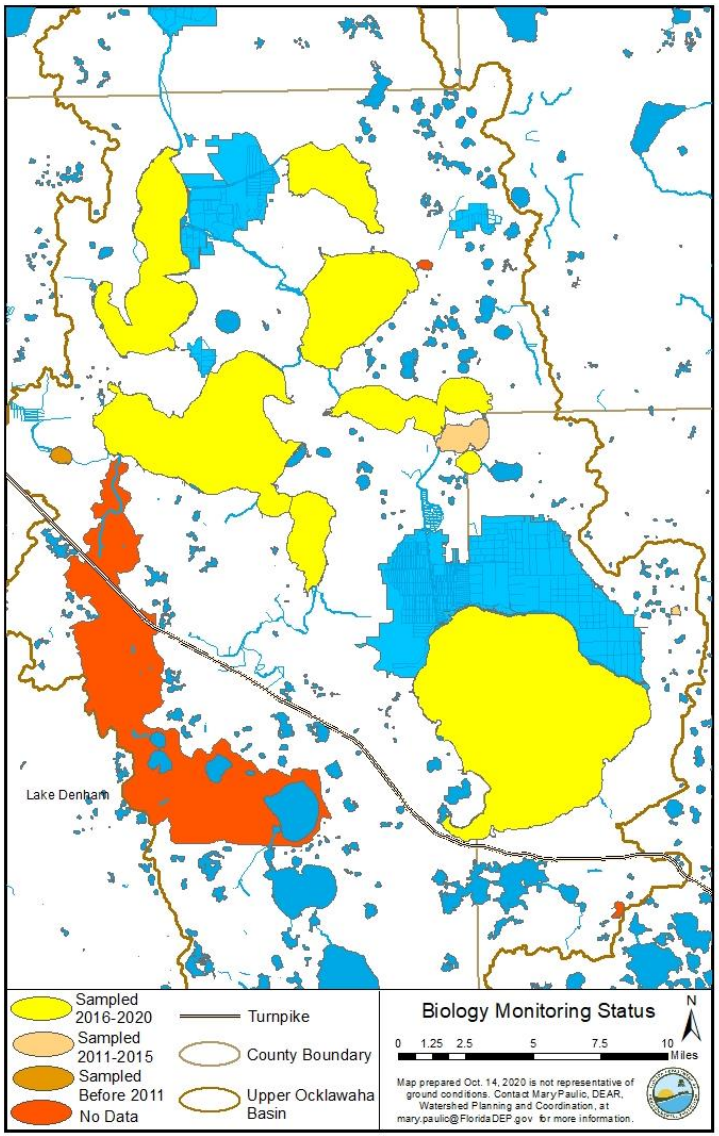
Entity	Palatlakaha Core	Palatlakaha Supplemental
Lake County	No BOD	No Unionized ammonia
SJRWMD	No BOD	All

Biology Status

Lake Vegetation Index or Stream Condition Index

DRAFT

Waterbody	Year of Last Testing	Number of Tests Since 2000
Lake Apopka	2018	5
Lake Beauclair	2013	5
Lake Carlton	2019	4
Lake Dora	2019	5
Trout Lake	None	None
Lake Eustis	2016	4
Lake Yale	2018	5
Lake Harris/Little Lake Harris	2020	10
Lake Denham	2010	3
Lake Griffin	2017	6
Marshall Lake	2011	2
Lake Roberts	None	None
Palatlakaha River*	Habitat only, No SCI	None



Analyte Evaluation

Suggested Changes

- Color and alkalinity as core analytes
- BOD is tied to the Palatlakaha River TMDL, but there are also TN and TP reductions
- Drop unionized ammonia from supplemental?
- Drop Tropic State Index
- Phytoplankton enumeration has been dropped
  - Does it need to be reinstated?
- Small lakes need biological sampling.
  - Are local agencies trained in SCI and LVI?

Questions


FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION