

Florida Department of Environmental Protection



Best Management Practices Lake Okeechobee BMAP

June 11, 2013





Presentation Outline

- Summary of urban best management practices (BMPs) that address nutrient loading.
- Examples of BMPs in the Upper and Lower Kissimmee sub-watershed.
- Overview of dispersed water management.
- Other projects information for the BMAP



Urban BMPs Summary



Typical Urban Stormwater BMPs

- Retention BMPs.
- Wet detention ponds.
- Dry detention.
- Baffle boxes (1st generation).
- Nutrient (2nd generation) baffle boxes.
- Swales.
- Alum injection.
- Stormwater reuse.
- Stormceptor devices.
- Continuous deflective separation (CDS) units.





Maintenance and Wastewater BMPs

- Maintenance activities:
 - Street sweeping.
 - Catch basin clean out.
 - BMP cleanout.
- Wastewater projects:
 - Septic tank phase out.
 - Wastewater treatment facility and collection system upgrades.





Provisional BMPs

- Public education and outreach efforts:
 - Participation in Florida Yards and Neighborhoods (FYN) Program.
 - Local ordinances for fertilizer, irrigation, landscaping, and pet waste management.
 - Public service announcements (PSAs).
 - Informational pamphlets and presentations.
 - Websites.
 - Illicit discharge program and call-in number.
- Floating islands/managed aquatic plant systems.
- Aquatic vegetation harvesting.
- Dredging/muck removal.



Example BMPs in the Upper and Lower Kissimmee Sub-watershed



Typical Urban Stormwater BMPs

- From the Lake Tohopekaliga (Toho) Nutrient Reduction Plan (NRP):
 - Retention BMP: Osceola County.
 - Wet detention pond: City of Kissimmee, City of Orlando, Florida Department of Transportation (FDOT) District 5, Orange County, and Osceola County.
 - Dry detention: City of Kissimmee, Orange County, and Osceola County.
 - 2nd generation baffle box: City of Kissimmee, City of Orlando, and Orange County.
 - Swales: City of Kissimmee, FDOT District 5, and Osceola County.



Typical BMPs, continued

- From the Lake Tohopekaliga (Toho) Nutrient Reduction Plan (NRP):
 - Alum injection: Orange County alum injection/ sediment inactivation.
 - Stormwater reuse: Osceola County and City of St. Cloud.
 - Stormceptor device: Orange County.
 - CDS unit: Orange County.
 - Catch basin: City of Orlando and Orange County.
 - Cooperative project: Judge Farms Reuse Facility, larger scale surface water retrofit/alternative water supply, cooperative project through the City of Kissimmee, City of St. Cloud, and Osceola County.



Typical BMPs, continued

- Other BMPs in the Upper Kissimmee sub-watershed:
 - Osceola County – Buenaventura Lakes stormwater treatment expansion. Two ponds are completed and integrated into the master drainage system. The pond areas used to be a golf course.
 - City of St. Cloud – Retrofit nearly all of downtown and adjacent neighborhoods through the creation of linear stormwater treatment facilities along the southern shore of East Lake Toho.





Provisional BMPs

- From the Lake Toho NRP:
 - Public education and outreach (FYN, ordinances, PSAs, pamphlets, website, and/or illicit discharge program):
 - City of Kissimmee.
 - City of Orlando.
 - City of St. Cloud.
 - FDOT District 5.
 - Orange County.
 - Osceola County.





Maintenance and Wastewater BMPs

- From the Lake Toho NRP:
 - Street sweeping:
 - City of Kissimmee.
 - City of Orlando.
 - FDOT District 5.
 - Orange County.
 - Osceola County.
 - Sewer improvements:
 - Osceola County Marydia septic tank replacement program.





Estimated Credits

- For the Lake Toho NRP, the following reductions are expected:

Entity	Total Nitrogen Reduction (lbs/yr)	Total Phosphorus Reduction (lbs/yr)
City of Kissimmee	3,069.9	1,204.1
City of Orlando	7,985.6	2,505.1
City of St. Cloud	2,529.1	220.9
FDOT	1,379.8	416.2
Orange County	225.2	135.5
Osceola County	91,154.3	9,544.1
Total	106,343.9	14,025.9

Note: Not all of the projects included in the NRP were quantified.

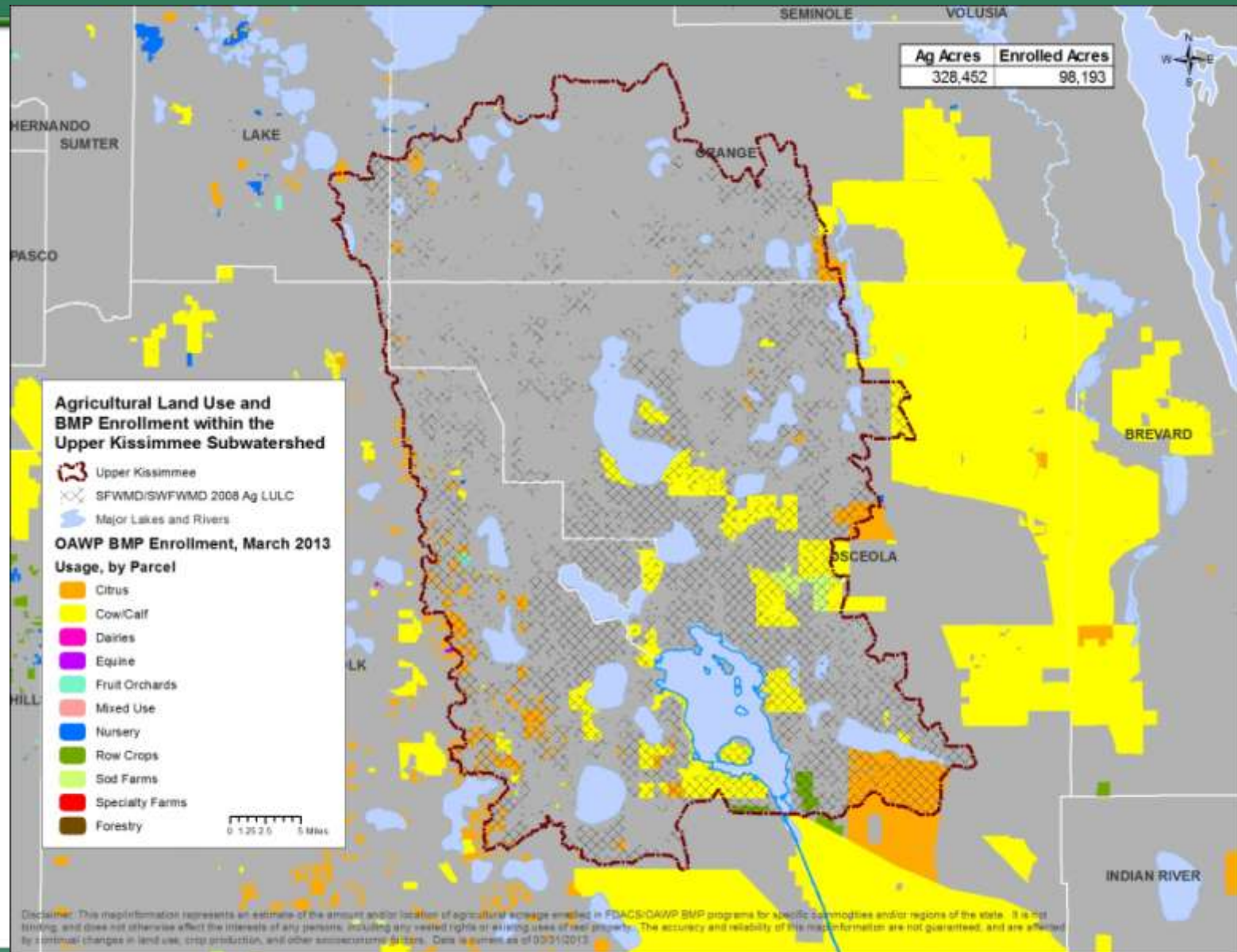


SFWMD Cost-Share Projects

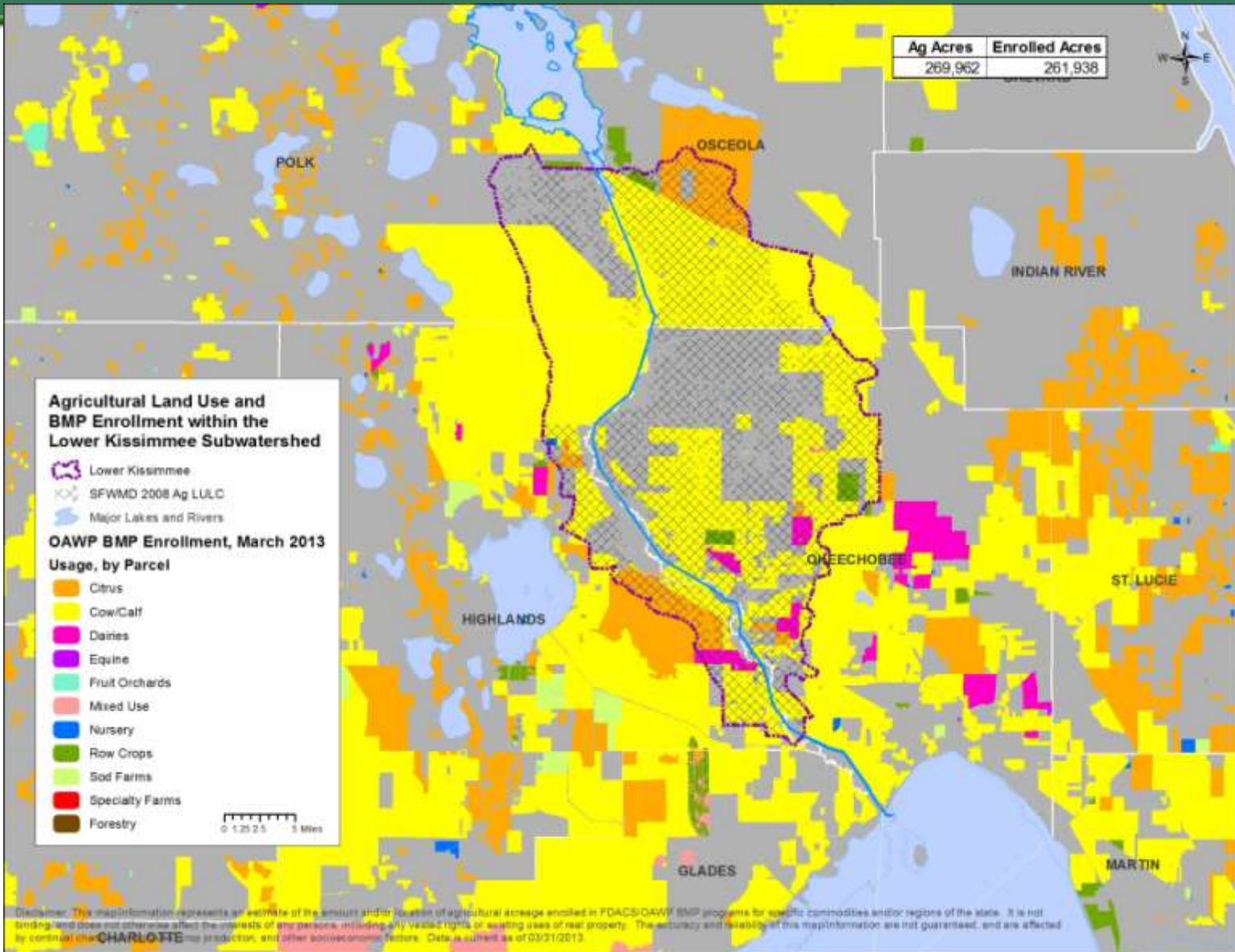
- SFWMD has provided cost-share funding over the last several to local governments on projects in the Upper Kissimmee sub-watershed:
 - Water quality – 23 projects
 - Alternative water supply – 13 projects
 - Flood protection – 26 projects



Agricultural BMPs



Agricultural BMPs, continued





Dispersed Water Management



Dispersed Water Management

- Definition:
 - Shallow water distributed across parcel landscapes using relatively simple structures.
- Components of dispersed water management include:
 - Water storage.
 - Cost-share cooperative projects.
 - Easements.
 - Payment for Environmental Services (PES).



PES

- Practice of offering incentives to landowners in exchange for managing their land to provide an ecological service.
- Projects solicited from interested and eligible landowners to retain water and nutrients above and beyond permitted requirements to benefit Lake Okeechobee and the Caloosahatchee and St. Lucie Estuaries.
 - Projects from the first solicitation have been constructed.
 - Projects received in the second solicitation are currently being evaluated.



Other Project Information for the BMAP



Funding Sources for BMAP Projects

- Funding sources:
 - Section 319 Grant.
 - TMDL Grant.
 - State Revolving Fund Loan.
- Projects listed in a BMAP receive extra points in the scoring for these funding sources.
- <http://www.dep.state.fl.us/water/waterprojectfunding/docs/WaterFundingAssistanceHandout2013.pdf>.



Cooperative Projects

- Cooperative projects between two or more BMAP stakeholders are encouraged:
 - Provides more options for project locations.
 - Work together to identify “hotspots” or problem areas in the watershed.
- Do municipal separate storm sewer system (MS4) groups meet regularly in this area?
- Evaluating state-owned lands for restoration activities.



Innovative Technologies

- Department created a standardized process for entities to request an agency review of a proposed strategy.
- This process helps to facilitate the adoption of effective technologies for pollutant source control and remediation.
- Proposals receiving a favorable review will be included in a library of accepted technologies published on the Department's website.
- The application form and instructions are posted at http://appprod.dep.state.fl.us/labs/cgi-bin/tech_portal/tech_library_intro.asp.



BMAP Approach

- Two-pronged approach for Lake Okeechobee BMAP development
 1. Projects.
 2. Data analysis.
- The focus is on projects to start obtaining funding.
- The data analysis portion is important and will occur concurrently with project evaluation but will be a secondary goal of the BMAP.



BMAP Approach, continued

- Next Steps:
 - Completed projects and programs.
 - Planned activities.
 - Tools to evaluate locations for water storage or treatment projects.
- The Department will provide more details on project collection after this meeting.



Questions

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