



*Florida Department of  
Environmental Protection*

# ***Overview of Basin Management Action Plans***

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# ***DEP's Bureau of Watershed Restoration***

Part of Division of Environmental Assessment and Restoration and includes:

- **Watershed Planning and Coordination;**
- **Watershed Evaluation and TMDL ;**
- **Ground Water Management;**
- **Data Management; and**
- **Nonpoint Source Management.**





# ***Basin Management Action Plan***

- DEP's primary method for restoring water quality to an impaired waterbody.
- Prepared after adoption of a TMDL.
- Use a watershed management approach.





## ***Watershed Management Approach***

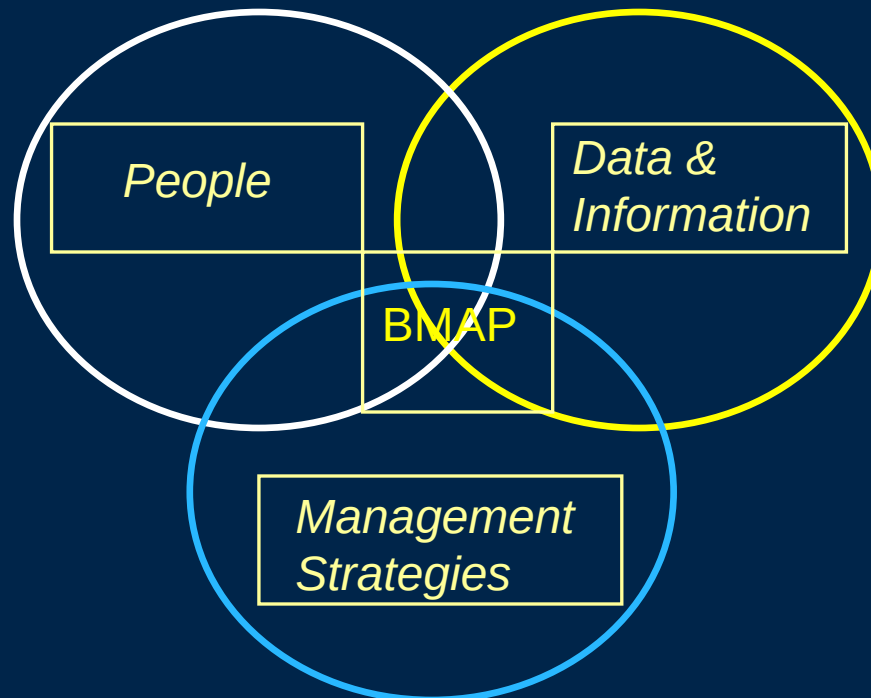
- Management framework that coordinates and integrates programs and activities.
- Resource or place oriented along hydrologic lines rather than program centered.





# ***BMAP Basics***

- The BMAP is a way to bring government, business, community groups, and environmental interests together to solve water quality problems.

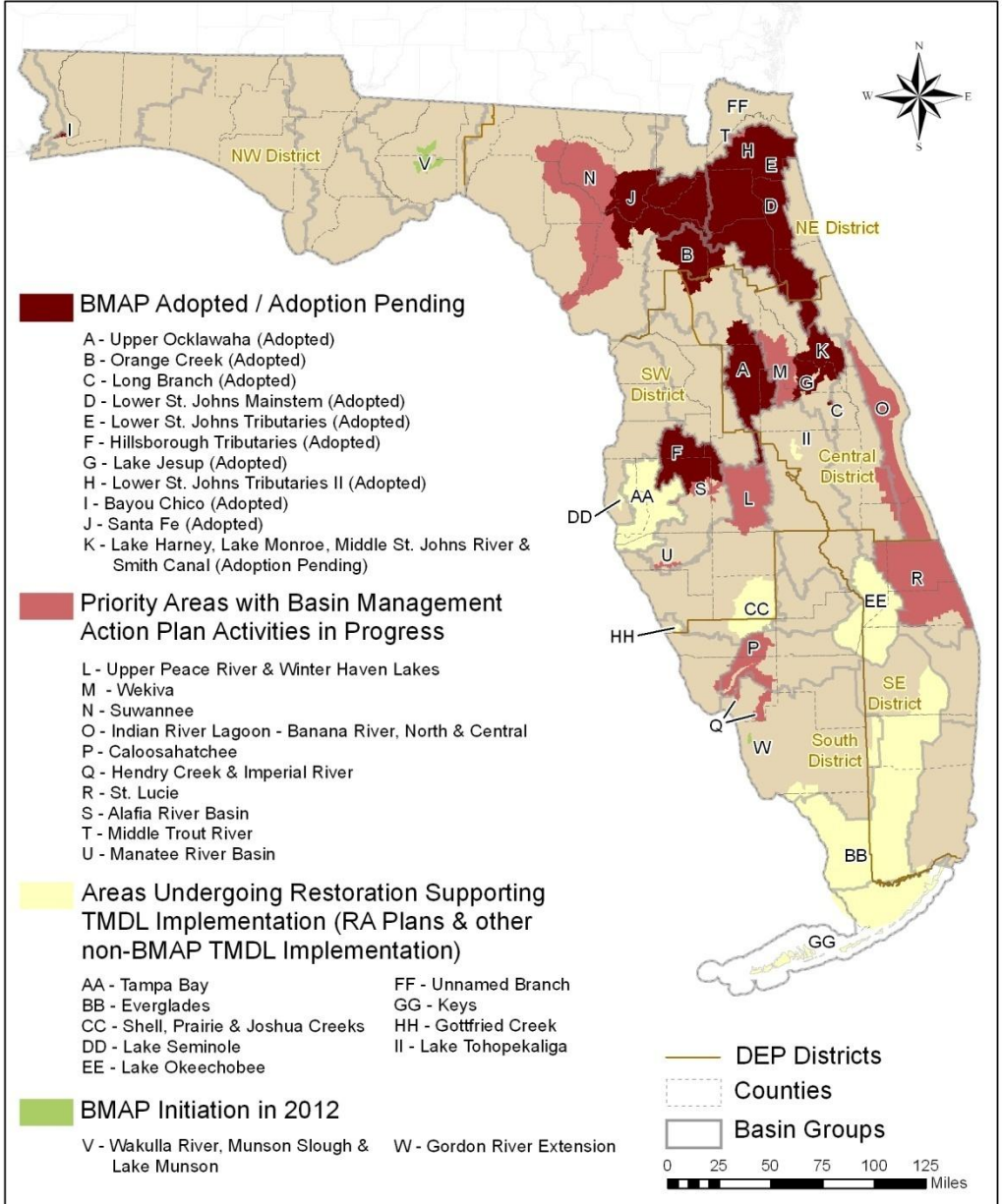




Basins with management plans completed or started.

# New BMAPS in 2013:

- Silver Springs/River
- Rainbow Springs/River
- Wakulla Springs/River
- Lake Okeechobee



Source: Florida Department of Environmental Protection  
Watershed Planning & Coordination Section  
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GIS Contact: Ronald.Hughes@dep.state.fl.us  
<http://www.dep.state.fl.us/water/watersheds/bmap.htm>

**TMDL Project  
Implementation Activities**

  
June 2012





# ***Legal Framework***

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- The authority for BMAPs is found in:
  - Section 403.067, Florida Statutes, known as the Florida Watershed Restoration Act.
- BMAPs are adopted by Secretarial Order.







## ***Section 403.067, Florida Statutes***

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- Spells out issues that are addressed within a BMAP.
- Directs DEP to engage the broadest range of interested parties in process.
  - Water management districts, DACS, local governments, environmental interests.
  - Requires at least one public meeting to present and receive comment on BMAP before adoption.





# *Implementation of BMAP*

- **For point sources (pipes):**
  - Wastewater treatment facilities and municipal separate storm sewer systems (MS4s).
  - Implementation is through their National Pollutant Discharge Elimination System permit.
- **For nonpoint sources, implementation is through the BMAP.**





## *What is an MS4 Permit?*

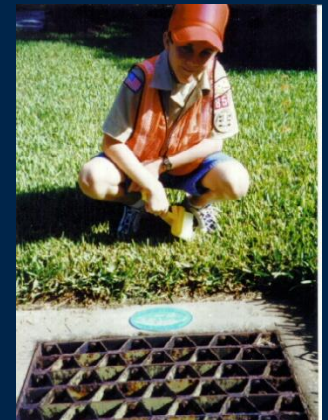
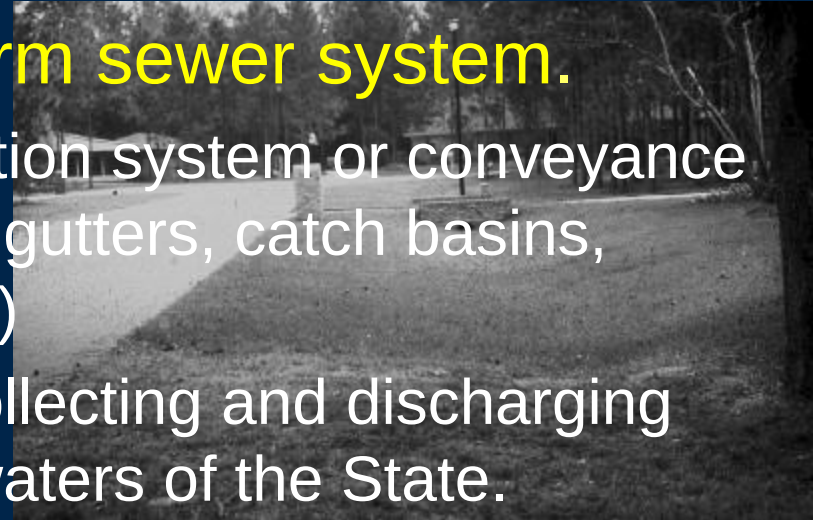
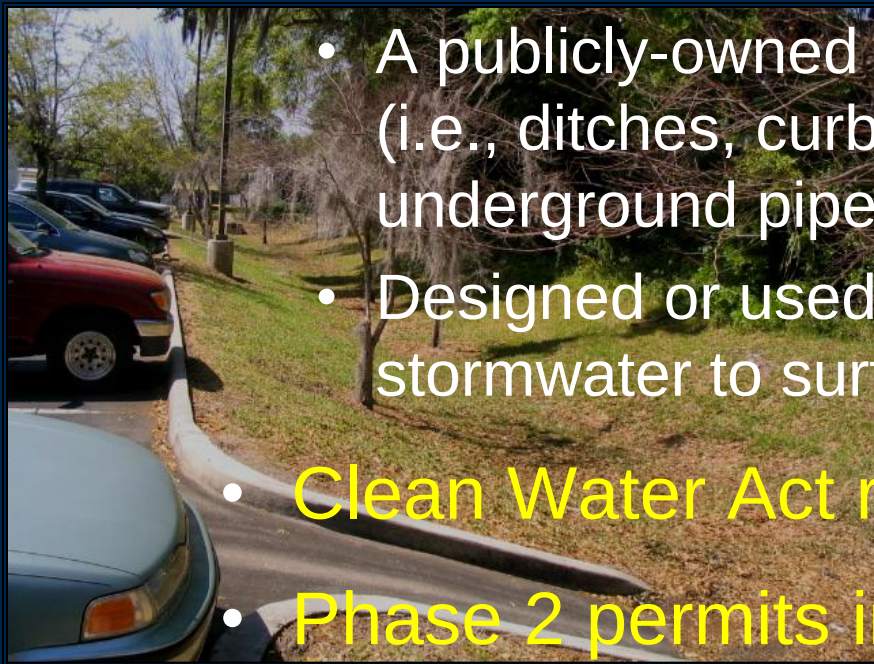
- **Municipal separate storm sewer system.**

- A publicly-owned collection system or conveyance (i.e., ditches, curbs and gutters, catch basins, underground pipes, etc.)
- Designed or used for collecting and discharging stormwater to surface waters of the State.

- **Clean Water Act requirement.**

- **Phase 2 permits in this basin.**

- Pollution prevention program.







## ***MS4 Implementation of BMAP***

- Projects adopted in the BMAP are an obligation of the permit holder.
- MS4 permit holders are Ocala, Marion County, FDOT, and Belleview.





# ***Agriculture Implementation***

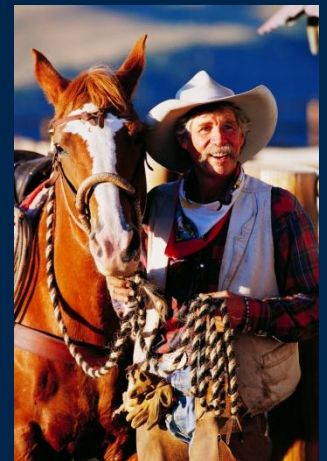
- Agricultural producers are required to implement appropriate best management practices (BMPs) for their commodities.
  - BMPs developed for commercial agriculture.
- Or implement approved water quality monitoring to show they are not having an adverse impact.



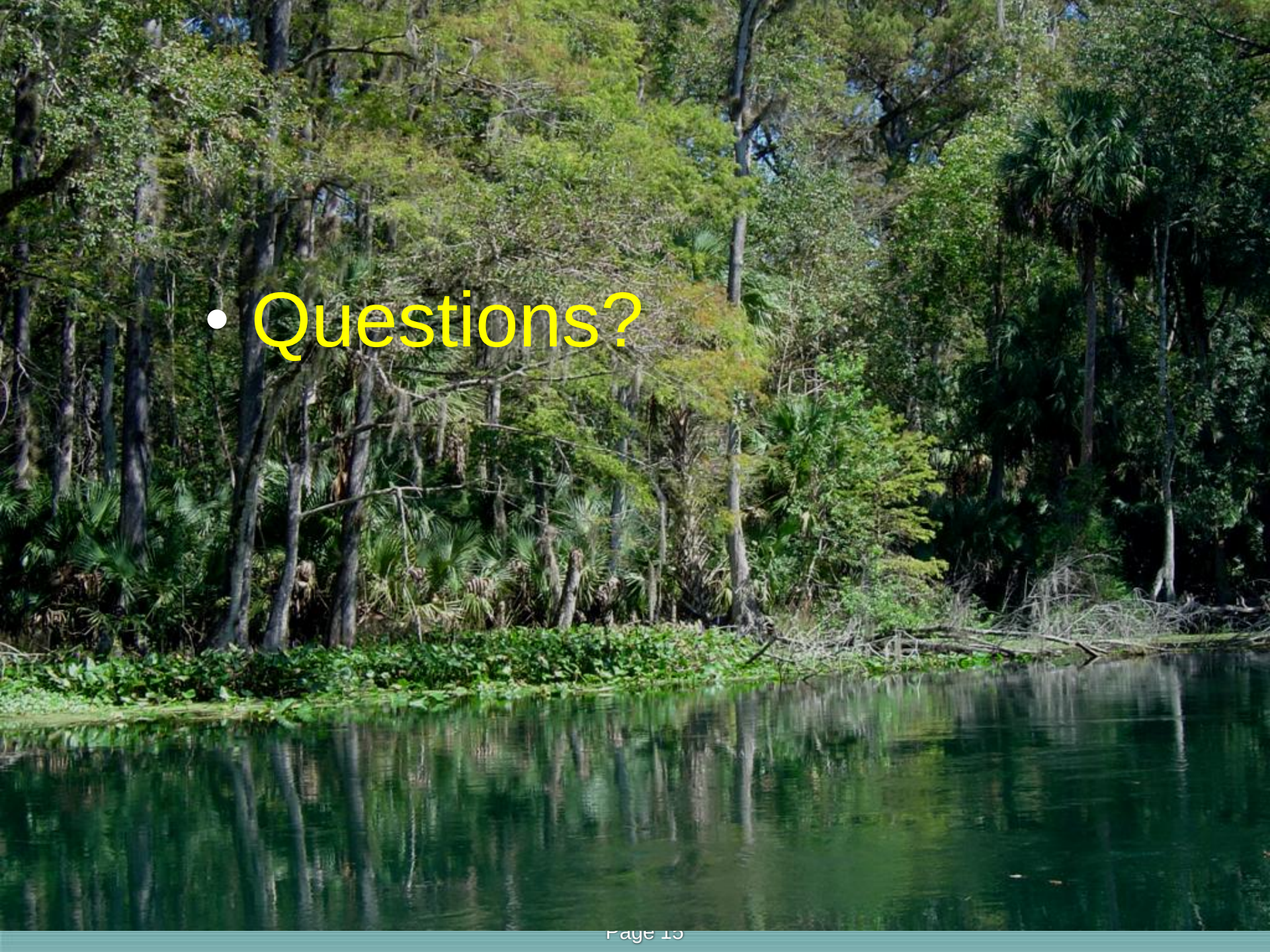


## *Basin Agriculture BMPs*

- Applicable BMPs for the basin:
  - Equine
  - Cow-Calf
  - Vegetable and Row Crops
  - Silviculture
  - Sod
  - Specialty Fruit and Nut
  - Container Nurseries
  - Citrus





A photograph of a dense, green forest with a body of water in the foreground. The water is calm and reflects the surrounding trees and foliage. The forest is composed of various types of trees, including tall, thin trunks and dense green canopies. The overall scene is peaceful and natural.

- Questions?





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# ***Silver Springs Basin Management Action Plan Fundamentals***

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## ***Silver Springs BMAP Development***

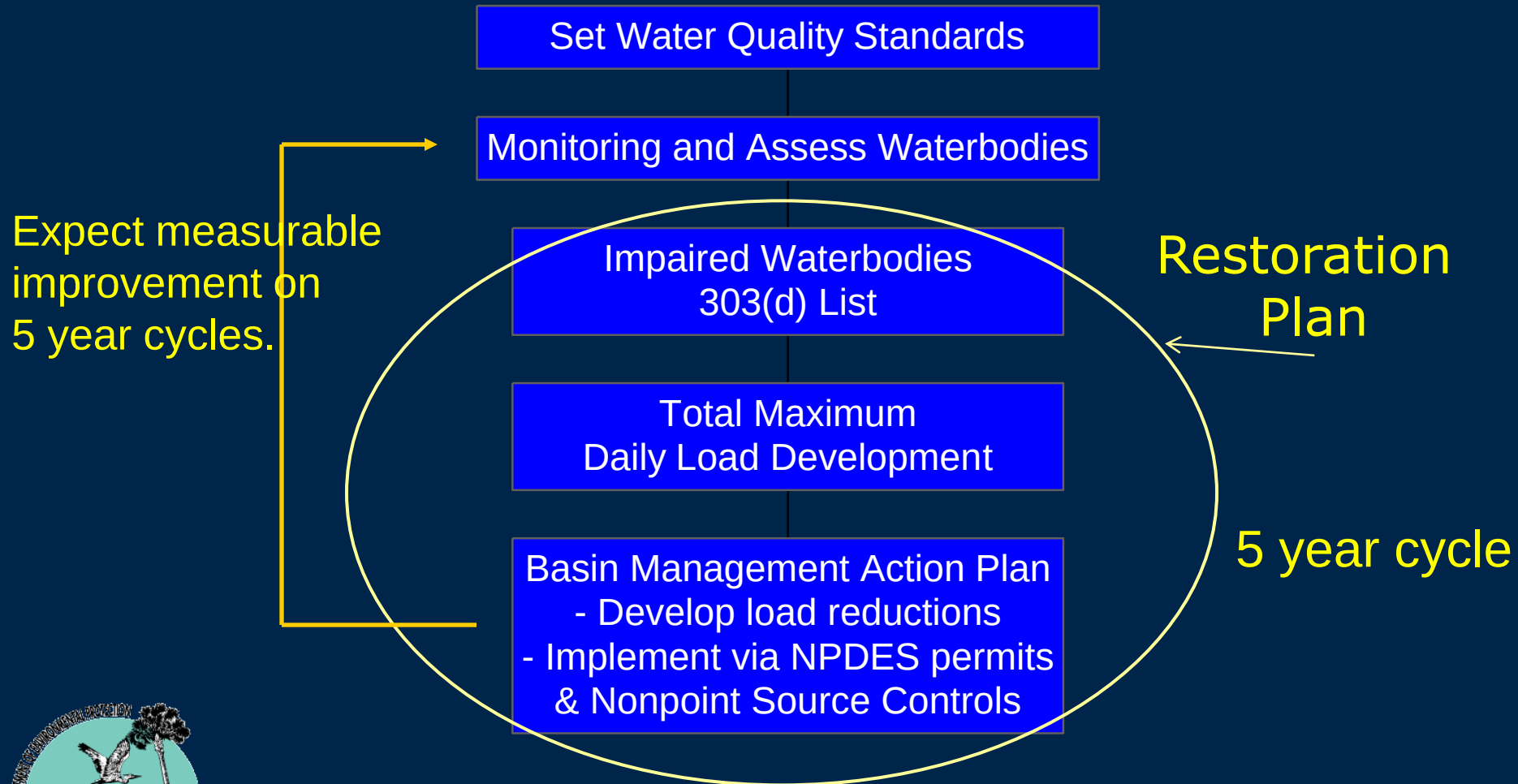
- The Silver Springs BMAP will be developed collaboratively with local stakeholders.
  - Through open meetings with public involvement.
  - Joint decision making with local partners.
- BMAPS are part of a larger cycle of water quality evaluation and assessment.







# CWA/TMDL/BMAP Process





# ***Key BMAP Components***

- Requirements defined under Florida Statute.
- Meeting these requirements will require us to address several important questions about the basin.
  - Do investigative work.





## ***Key BMAP Components (cont)***

- **TMDLs being addressed.**
  - A BMAP may address multiple TMDLs and multiple waterbodies.
  - One BMAP will cover all 3 impaired WBIDs in this basin.
- **Assumptions and /or considerations that were made to develop the TMDL.**









## ***Key BMAP Components (cont)***

- **Identify stakeholders.**
  - Who needs to be part of discussion?







## ***Key BMAP Components (cont)***

- **Identify sources of nitrate.**
  - Where are they located?
  - Priority of importance.



- **Future Growth:** How will we address potential additional loadings from future development in the basin?







## ***Key BMAP Components (cont)***

- Identify projects that will reduce nitrate and help meet the TMDL.
- Project information includes:
  - Implementation schedule;
  - Who will complete project?;
  - Funding for projects; and
  - Expected water quality improvement.





## ***Key BMAP Components (cont)***

- **Projects can include:**
  - Stormwater best management practices;
  - Wastewater upgrades;
  - Public education and outreach; and
  - Ordinances.
- **Important question about projects that needs to be answered.**
  - What is sufficient effort that will achieve reduction in ground water concentration of nitrate?





## ***Key BMAP Components (cont)***

- Process to assess progress towards achieving the TMDL, and includes:
  - Monitoring plan;
  - Project reporting;
  - Annual follow-up meetings; and
  - Evaluate progress made to achieve TMDL every 5 years.
- Appendices with supporting information.







## *Opportunities and Challenges*

- This is a ground water basin.
  - Travel time of water may be more important than distance from spring.
  - Karst topography and associated sinkholes and underground conduits.
- Closed basins that drain internally. In some cases water is directed to wells.
  - Source of nitrate may be far away from springs.





# *Opportunities and Challenges*

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- Wastewater discharges are permitted as ground water discharges not through surface water discharge permits.
  - Different nitrate permit levels than spring criteria.
  - Not considered a loading in the TMDL.





# *Opportunities and Challenges*

- Extensive scientific study has already been undertaken in basin.
  - Bibliography of completed studies.
  - Dye trace studies to follow ground water movement from Orange Lake, Appleton Museum, Pontiac Sink, and Tuscawilla Park.
  - This will help us identify needed management actions.
- Opportunity to identify additional data needs and gaps in understanding.







# ***What have we been doing?***

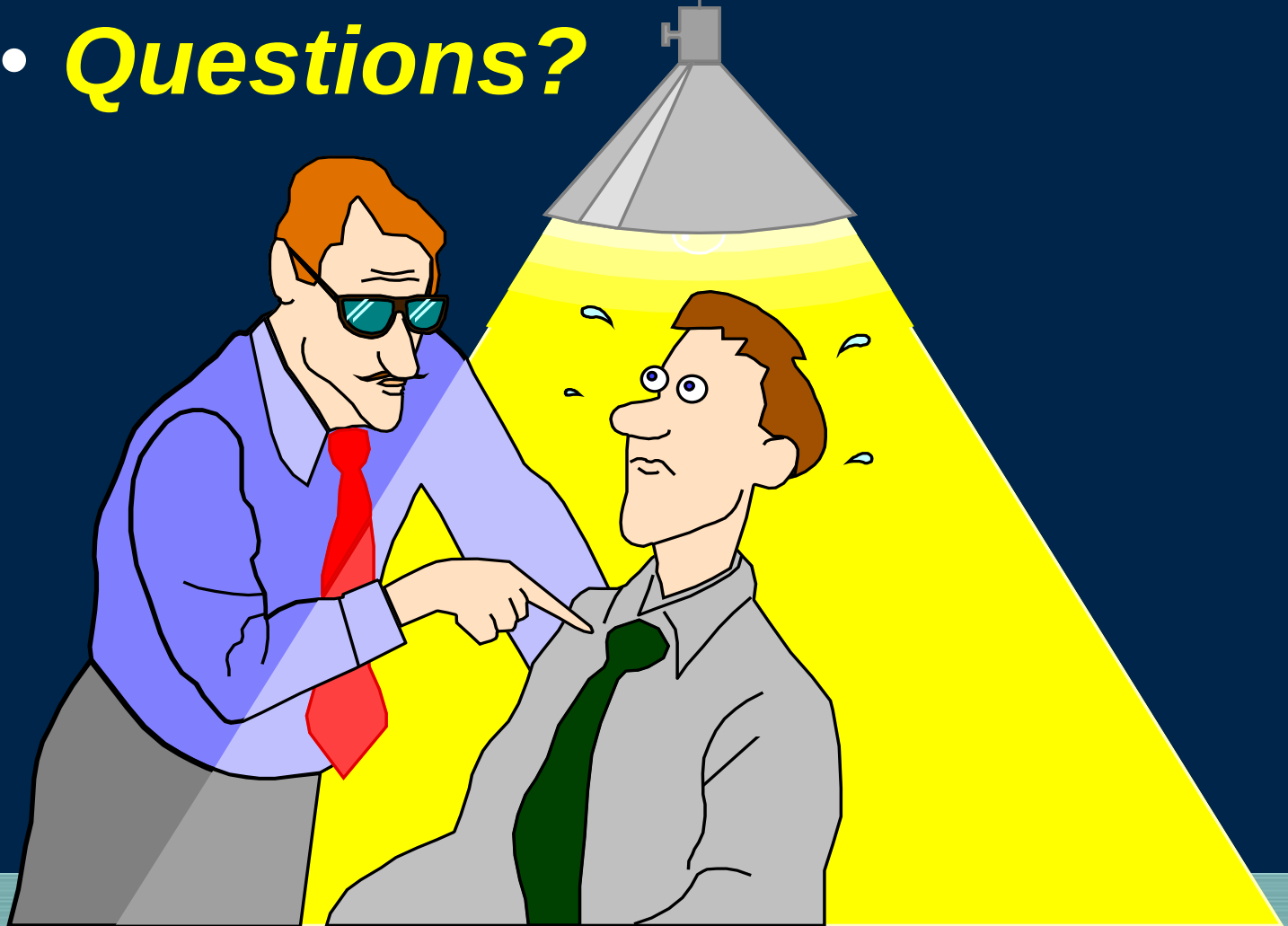
**Since the TMDL workshop in July 2012.**

- Intergovernmental briefing held in July 2012.
- Toured Silver River and springs.
- DEP has met with SJRWMD.
- Windshield tour of agriculture in basin.
- Met with Marion County Utilities and Ocala Utilities
- Wastewater project initiated with Marion County Utilities.





- *Questions?*





# ***Approach to the Silver Springs BMAP***

Mary Paulic

Basin Coordinator

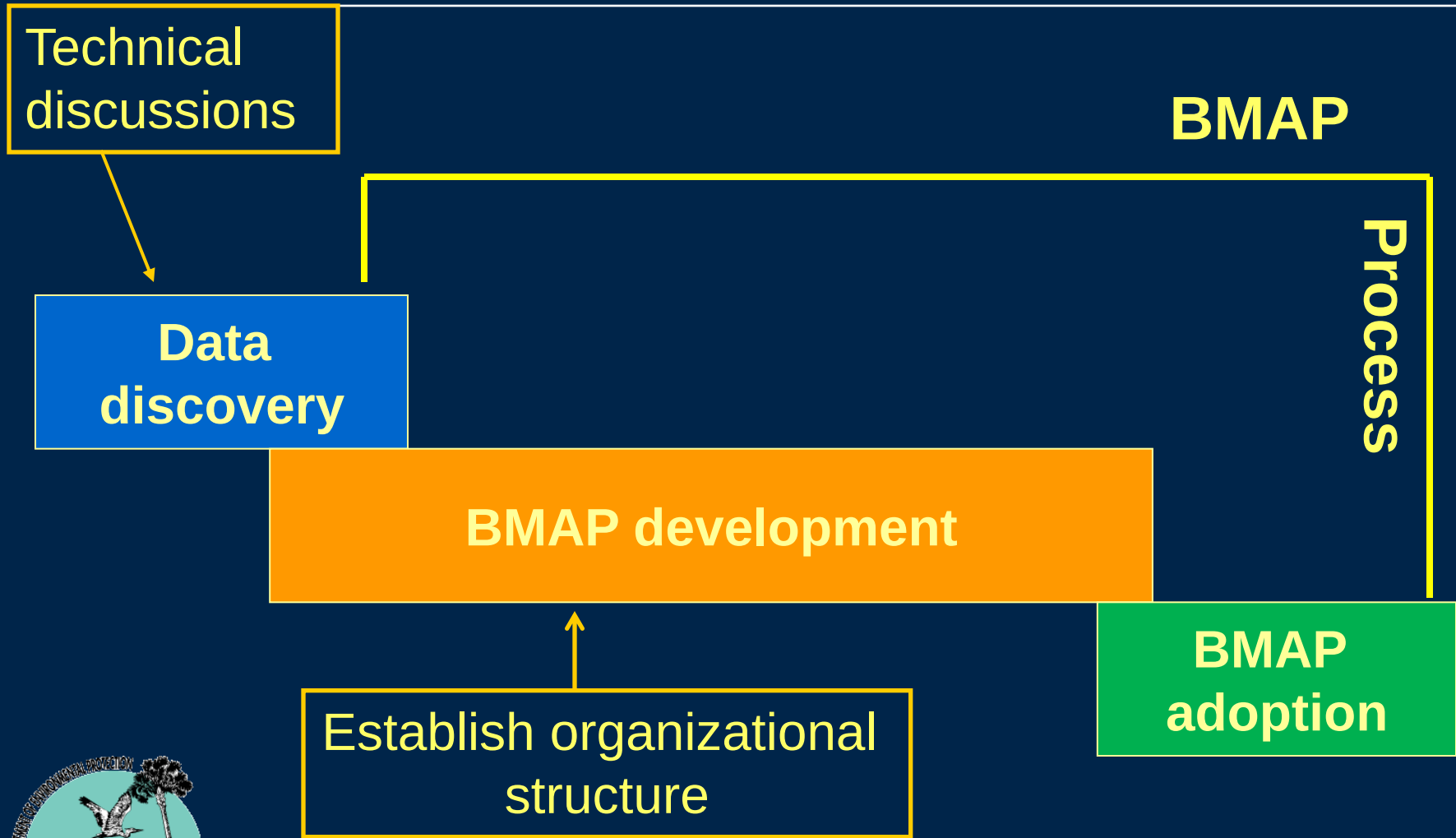
[Mary.paulic@dep.state.fl.us](mailto:Mary.paulic@dep.state.fl.us)





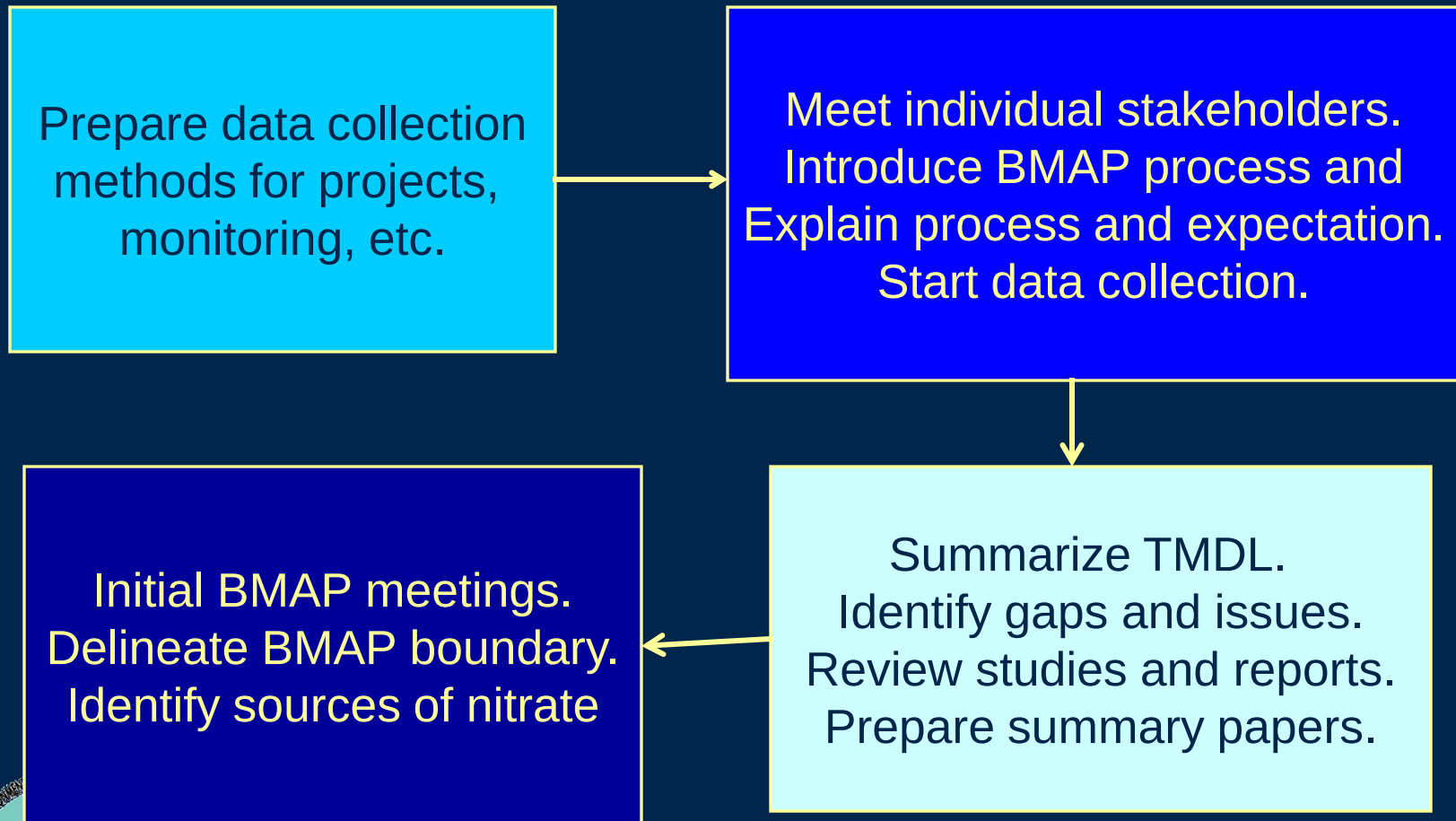


# ***BMAP Approach***





# ***DATA DISCOVERY***





# *Operating Procedures*

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- Marion County is DEP's contractor assisting with:
  - Meeting preparation and facilitation;
  - Note taking; and
  - Collection of data.
- The County has a second role or multiple roles as a stakeholder.
  - Representation by different staff.







# *Operating Procedures (cont)*

- **Government in the Sunshine**
  - Open meetings.
  - Noticed in Florida Administrative Record.
- **Communication**
  - **Email notification** of meetings and periodic updates of activities – Thoughts?
  - **DEP website** notification of meetings.
  - **FTP site** for transfer of materials.
    - Meeting folder.
    - Library folder.
  - Silver Springs Website under consideration.





## ***Website and FTP Addresses***

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- <http://www.dep.state.fl.us/water/watersheds/bmap.htm> - website for meeting announcements.
- [http://www.dep.state.fl.us/water/tmdl/final\\_tmdl.htm](http://www.dep.state.fl.us/water/tmdl/final_tmdl.htm) - website for TMDL documents, under Ocklawaha Basin.
- [http://publicfiles.dep.state.fl.us/DEAR/BMAP/Silver\\_springs/](http://publicfiles.dep.state.fl.us/DEAR/BMAP/Silver_springs/) - FTP site for meeting notes and presentations.





# *Stakeholders*

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- Who is a stakeholder? Who needs to be involved?
  - Local partners include Ocala, Marion County, agriculture interests, environmental interests, silviculture interests, SJRWMD, FDOT, FWC, Silver River State Park, Silver Springs attraction, community interests and others.
- Stakeholders not present?
- Participation by other interested parties?





## *Next Steps*

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- Stakeholder interviews
- Next meeting(s)
  - March and April, set dates.
  - Topics.
    - Delineation of BMAP boundary.
    - Identify stakeholders.
    - Initiate discussion of nitrate sources.

