

Florida Department of Environmental Protection



Division of Environmental Assessment and Restoration

Jackson Blue Spring & Merritts Mill Pond Basin Management Action Plan (BMAP) Apalachicola-Chipola Basin

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PRESENTATION OUTLINE

- BMAP purpose and goal.
- BMAP restoration plan components.
- BMAP functions to achieve restoration.
- Proposed BMAP schedule.
- Stakeholder questions and insights.



Why Jackson Blue Spring

With Numerous 'Blue Springs' Throughout the State, Need for a Naming Convention to Identify a Particular 'Blue Spring'.

- There are 17 'Blue Springs' named in FL.
- These 'Blue Springs' are in 14 counties.
- To allow for unique naming, the county within which the spring resides is used as a prefix.
- For this BMAP will identify as **Jackson Blue Spring**.

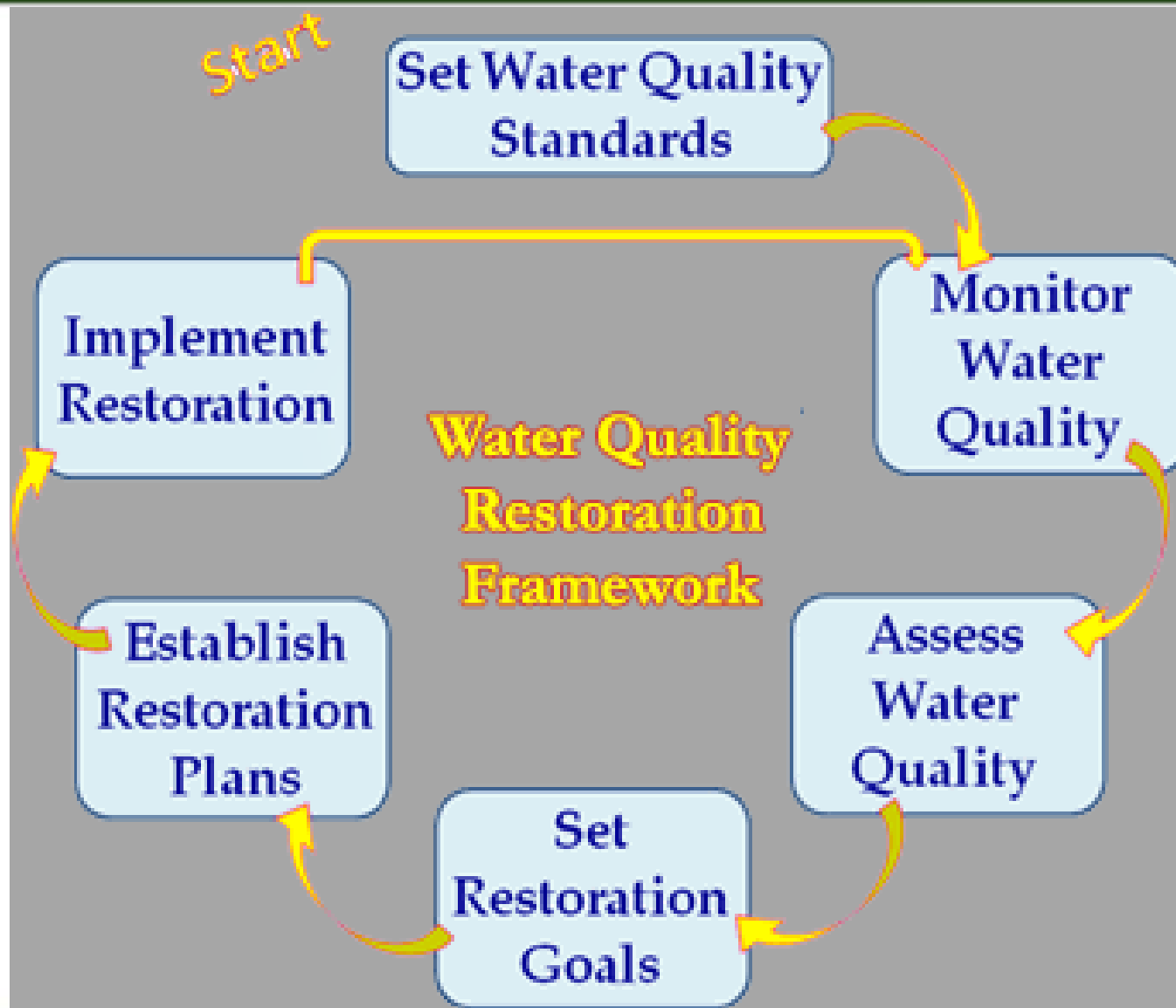




Merritts Mill Pond



DEP Water Quality Restoration Process





Nitrate Concentrations Elevated 2012 - 2014

STATION NAME	SAMPLE COLLECTION DATE	NITRATE VALUE (mg/L)
JACKSON BLUE SPRING VENT	1/30/2012	3.5
JACKSON BLUE SPRING VENT	4/25/2012	3.6
JACKSON BLUE SPRING VENT	7/23/2012	3.6
JACKSON BLUE SPRING VENT	10/23/2012	3.9
JACKSON BLUE SPRING VENT	10/23/2012	3.9
JACKSON BLUE SPRING VENT	1/28/2013	3.5
JACKSON BLUE SPRING VENT	4/24/2013	3.6
JACKSON BLUE SPRING VENT	7/18/2013	4.2
JACKSON BLUE SPRING VENT	10/31/2013	3.9
JACKSON BLUE SPRING VENT	10/31/2013	3.9
JACKSON BLUE SPRING VENT	1/27/2014	3.6
AVERAGE NITRATE = 3.7 mg/L		

ELEVATED NITRATE CONCENTRATIONS CONTINUE in JACKSON BLUE SPRING

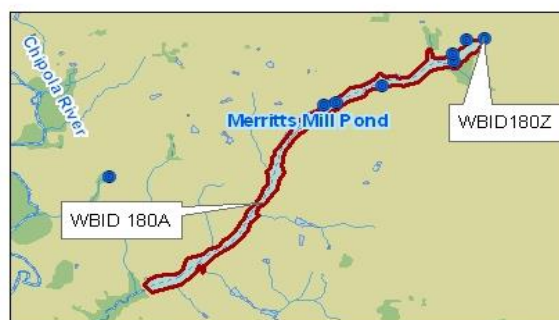
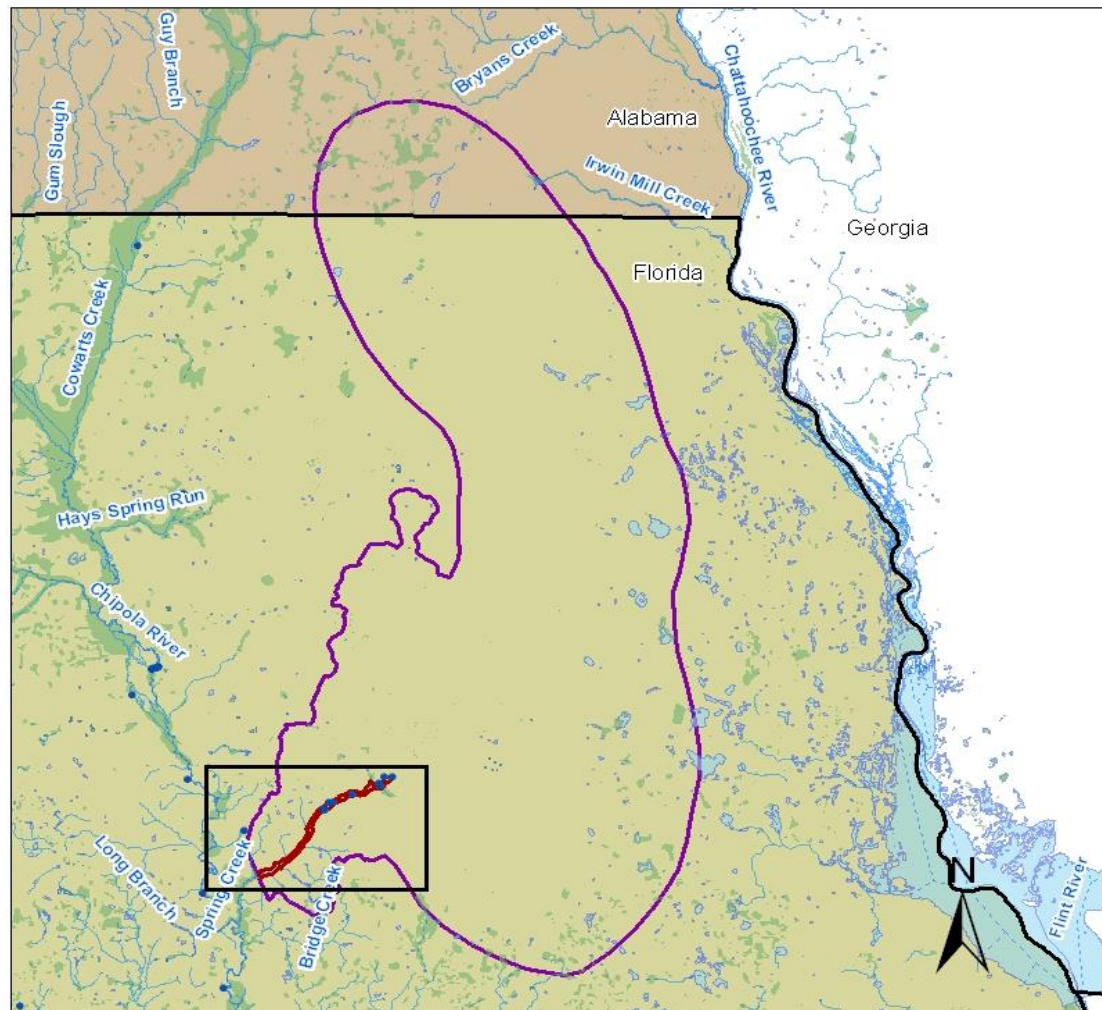


Elevated Nitrate - Major Cause of Algal Growth (Mill Pond Sept. 2006)





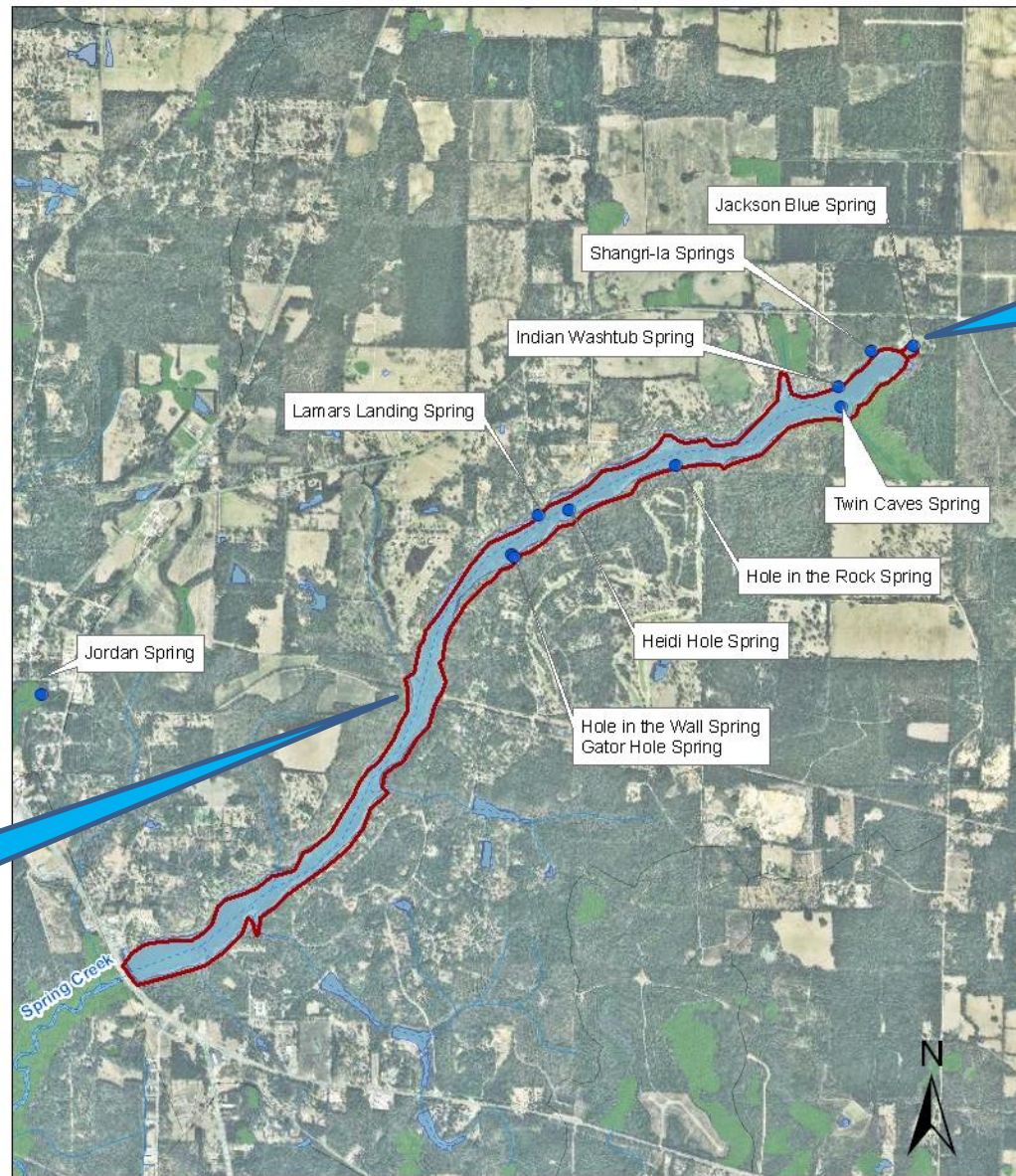
Jackson Blue Spring and Merritts Mill Pond Contributing Area



Location of Impaired Waterbody Segments

180A
– Mill
Pond

180Z -
Spring



0 0.2 0.4 0.8 1.2 1.6 Miles

● Springs (2011)  Impaired WBIDS



Jackson Blue Spring Impaired Waters

- Jackson Blue Spring (WBIDs 180Z – Spring & 180A – Merritts Mill Pond)
 - Impaired waters are to be focus of BMAP restoration efforts;
 - Both WBIDs to be included in BMAP area;
 - Nitrate target to be the same as the TMDL target; and
 - BMAP area needs to include surface and groundwater contributing to impaired waters.



Jackson Blue Spring Nitrate TMDL

Impaired Waters	Parameter	TMDL Nitrate Target (mg/L)	TMDL Nitrate % Reduction		Non – point Source % Reduction
Jackson Blue Spring (WBID 180Z), Merritts Mill Pond (WBID 180A)	Nitrate as monthly average	0.35	90%		90%



OVERVIEW of BMAP DEVELOPMENT PROCESS

Sources & Estimates of Associated Loading

- Identify potential sources
- Continue data collection & review
- Complete additional studies
- Update land use information
- Quantify loading from specific sources

Responsibilities for Load Reductions

- Initial allocations in the TMDL
(point vs. nonpoint)
- Detailed allocations may be developed
- Agriculture Required to Implement BMPs

Management Actions

- Structural and non-structural activities
- May include further studies
- Quantify the benefits of specific actions
- Identify implementation priorities

Mechanisms to Show Progress

- Accountability for reduction actions
- Tracking progress
- Monitoring
- Adaptive management to modify the BMAP



Key BMAP components

- **TMDL reduction target is the focus.**
- **Defines area addressed by BMAP (the potential pollutant contributing area).**
- **Strategies to meet the TMDL target:**
 - **Commitments to pollutant reduction;**
 - **Actions to achieve water quality improvement; and**
 - **Implementation timeline for reduction measures.**
- **Measure progress towards achieving the TMDL target.**

Usual Sources of NO₃

Usual Sources of Nitrate (NO₃):

- Inorganic fertilizer
- Animal waste
- Domestic wastewater: on-site septic systems
- Stormwater runoff
- Atmospheric deposition





NO3 Source Categories

Point sources - sources that deliver pollutants directly to the impaired water via direct outlets:

- NPDES wastewater treatment facilities; or
- NPDES storm sewer facilities (MS4);
- None present in Blue Spring area.

Nonpoint sources - the vast majority of the sources in this area; nitrate delivered to springs via runoff or ground water transport.



Pollutant Sources

Initial steps in BMAP development is to develop a detailed understanding of pollutant (nitrate) sources contributing to the impaired waters:

- **Understanding the surface and ground water routes of nitrate (NO₃) transport to the system;**
- **Develop a thorough inventory of significant pollutant sources and their contribution of NO₃; and**
- **Compile a Nitrogen Source Inventory to estimate loads from source categories.**



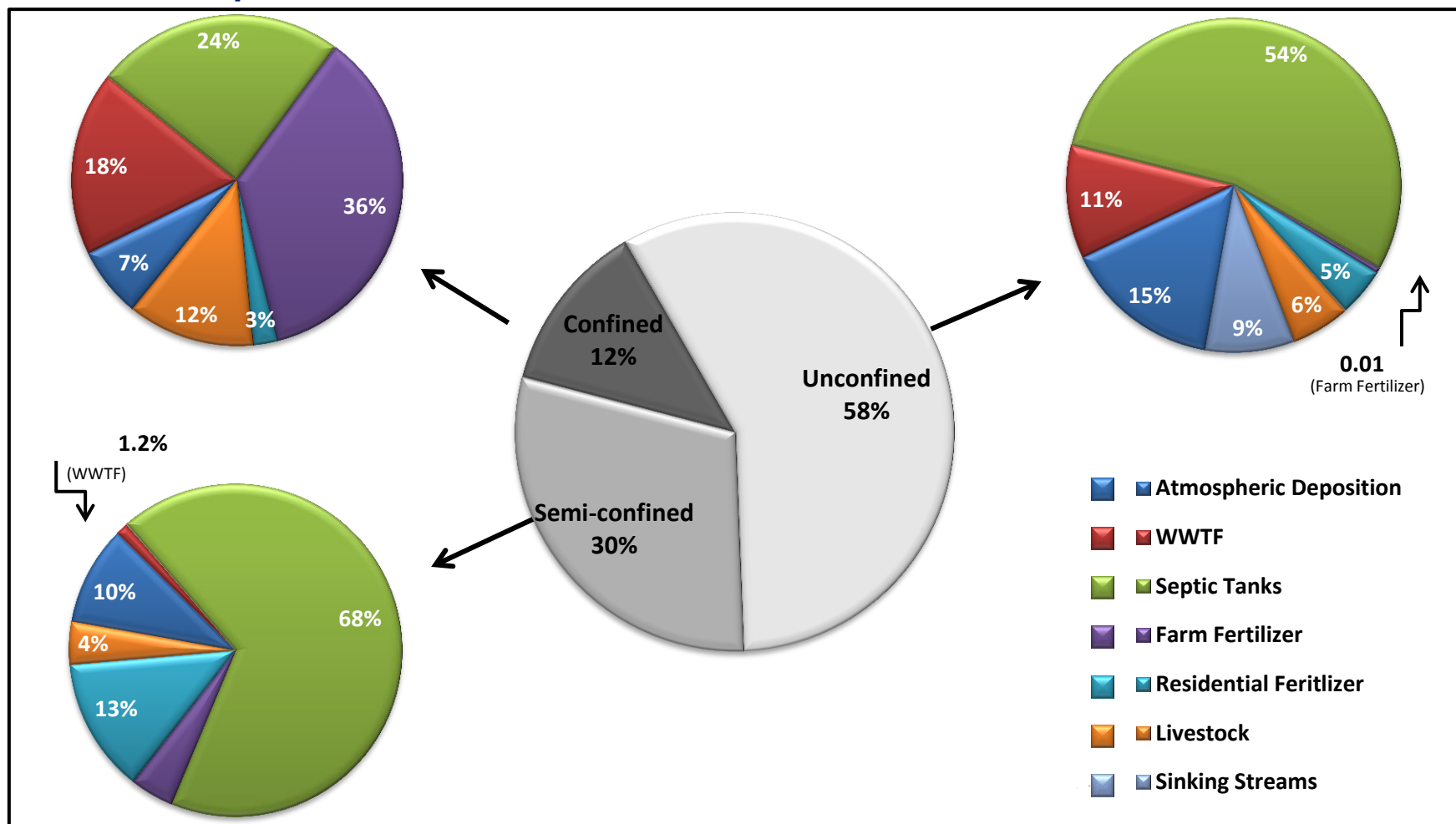
Nitrate Source Tools

Agricultural Nitrate Source Tools:

- **Agricultural Best Management Practices (BMPs)**
- **BMP Cost Share Implementation Programs:**
 - **State Springs Funding Allocations – administered thru the MFWFMD;**
 - ❖ Funding available in the amount of
 - **BMP Cost Share Implementation Funding - administered thru DACS;**
 - ❖ Funding available in the amount of

Nitrogen Source Inventory Example

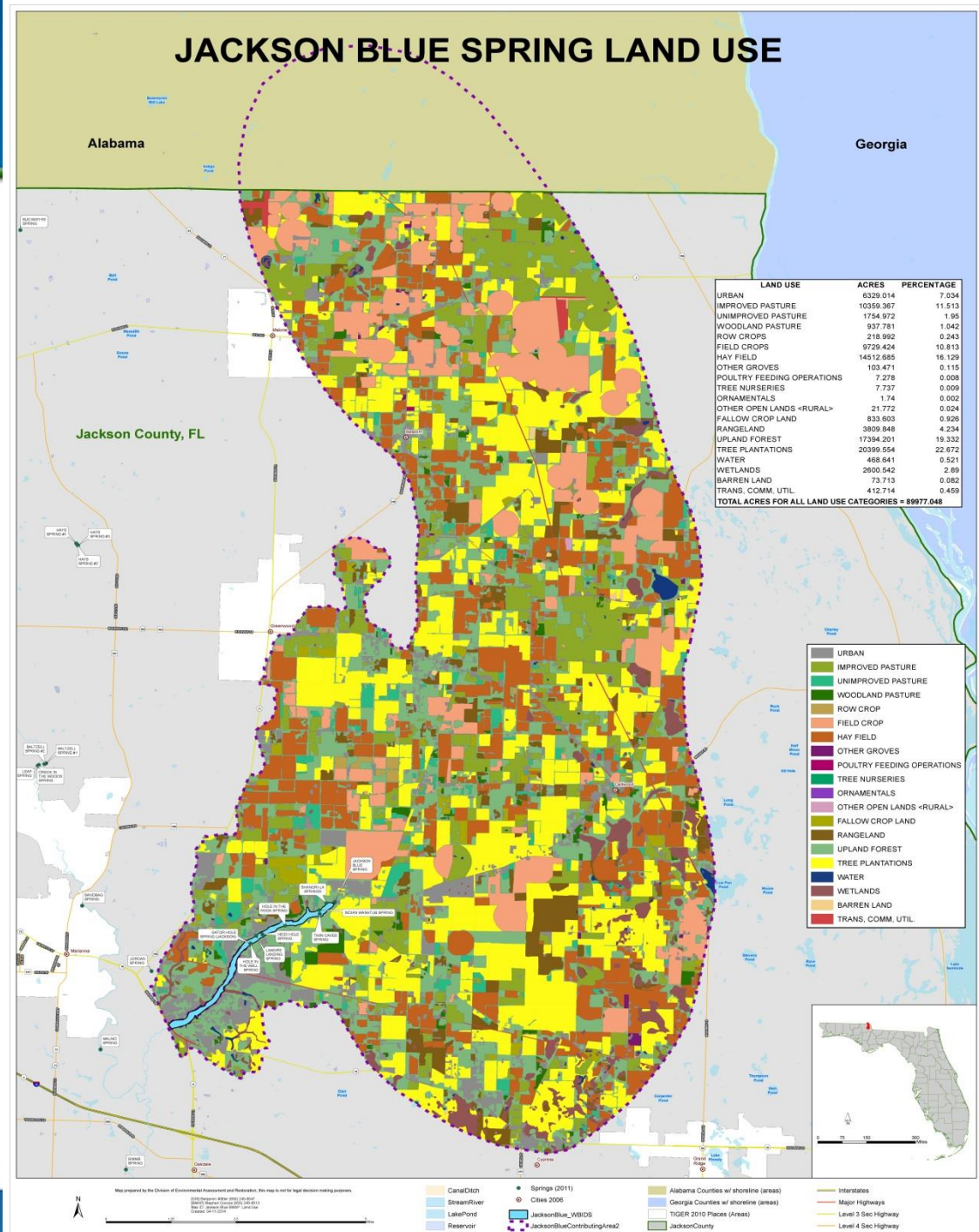
Wakulla Springs Contributing Area Example – Estimated nitrogen loads to Floridan Aquifer



Preliminary Land Use in BMAP Area

- 23% Tree Plantations
- 19% Upland forest
- 16% Hay Field
- 12% Improved Pasture
- 11% Field Crops
- 7% Urban
- 4% Rangeland
- 2% Wetlands
- 2% Unimproved Pasture
- 1% Woodland Pasture
- 1% Fallow Crop Land

[Based on 2009 – 10 Land Use Data]





Agricultural Activities Compliance with the TMDL

For Agricultural Activities to Demonstrate Compliance with the TMDL Reduction Requirements:

- Agricultural producers required by statute to implement appropriate best management practices (BMPs) for their commodities; or
- May choose to implement a FDEP designed water quality monitoring plan to demonstrate compliance with the required TMDL reduction.



Agricultural Activities

Compliance with the TMDL (cont.)

Some agricultural producers within area are already implementing pollutant reduction BMPs:

- BMPs and manuals are available and in use for various commercial agricultural commodities;
- Already have 29% of eligible agriculture commodities enrolled in use of BMPs; and
- Significant agricultural environmental stewardship effort already present in advance of BMAP requirement.



BMAP- In Summary

- **BMAPs provide a legal framework for water quality restoration:**
 - Target specific goals, projects, and timelines;
 - Include measurement of success; and
 - Opportunities for funding for willing partners.
- **There is flexibility – consensus driven**
- **BMAPs will always depend on local commitment**



Tentative BMAP Schedule

■ July

- Hydrogeology
- Aquifer Vulnerability & Ground Water Travel
- Spring Contributing Area Boundary – BMAP Area

■ August

- Effective NO₃ Reduction Strategies
- Agriculture BMP-NOI responsibilities within BMAP area
- Springs Funding Opportunities for NO₃ Reduction Strategies



Tentative BMAP Schedule (cont.)

■ **September**

- DEP N Source Inventory Tool Results
- Priority Sources for NO₃ Reduction Activities

■ **October**

- Review BMAP Contents
- Present Draft BMAP
- Final Public meeting

■ **Nov/Dec**

- Adoption of Final BMAP



STAKEHOLDERS To Do

- Be sure we have your name and email on the sign-in sheet to receive notice of future meetings.
- Please continue to participate in future BMAP meetings.
- Spread the word to other interested individuals to become participants.



BMAP Participation

- **Look for notice of future BMAP meetings:**
 - By email to those on our contact list;
 - Meeting notices posted on BMAP web site:
<http://www.dep.state.fl.us/water/watersheds/bmap.htm>; and
 - Meeting notices posted in Florida Administrative Register.

- **Spread the word to others interested to send us their contact information:**
 - Stephen.Cioccia@dep.state.fl.us ; and
 - Coordinator contact also listed on bottom of meeting agenda.

QUESTIONS ?

