

Florida Department of Environmental Protection



Division of Environmental Assessment and Restoration

Basin Management Action Plan Crystal River Area Springs Coast Basin Kings Bay & Crystal River

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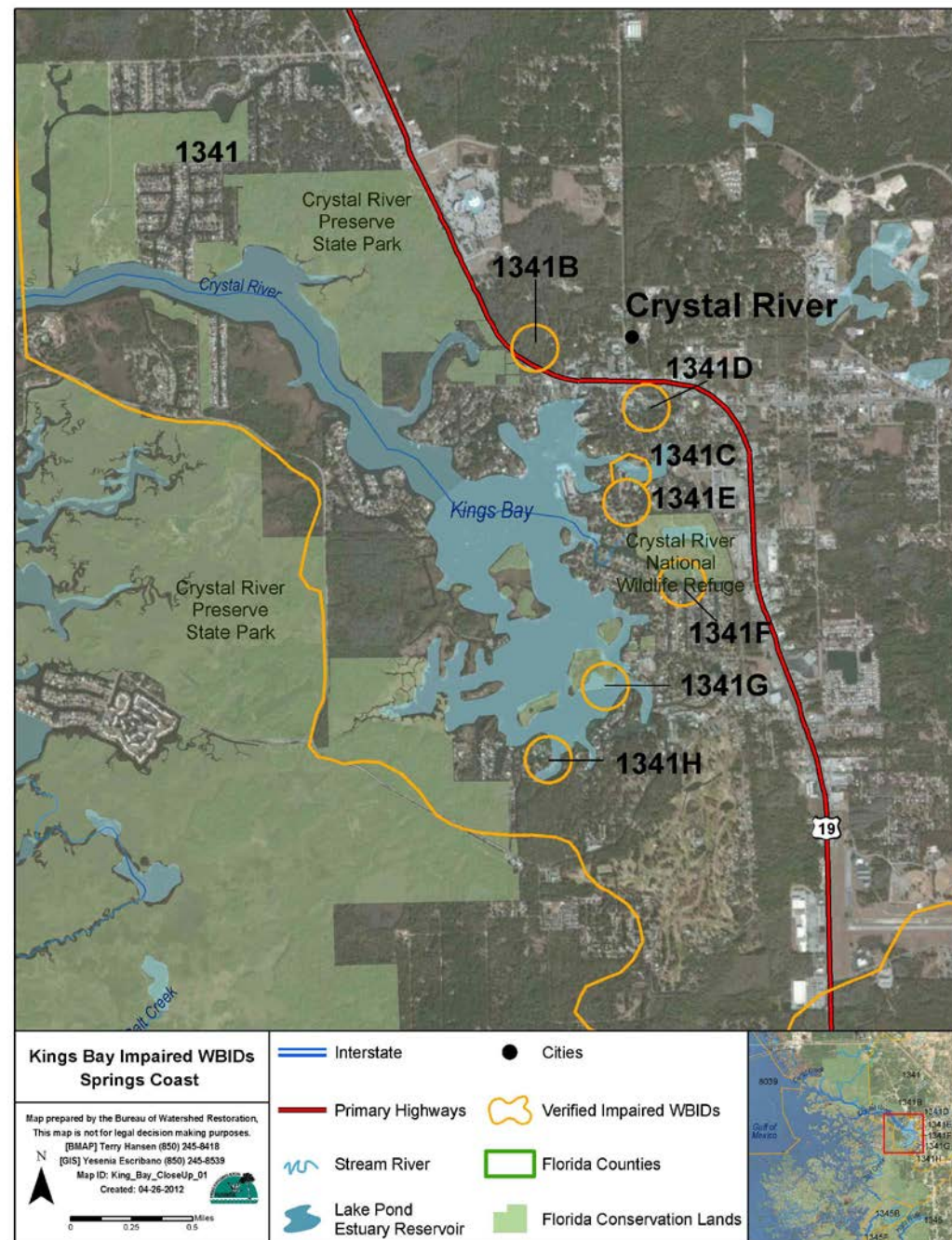




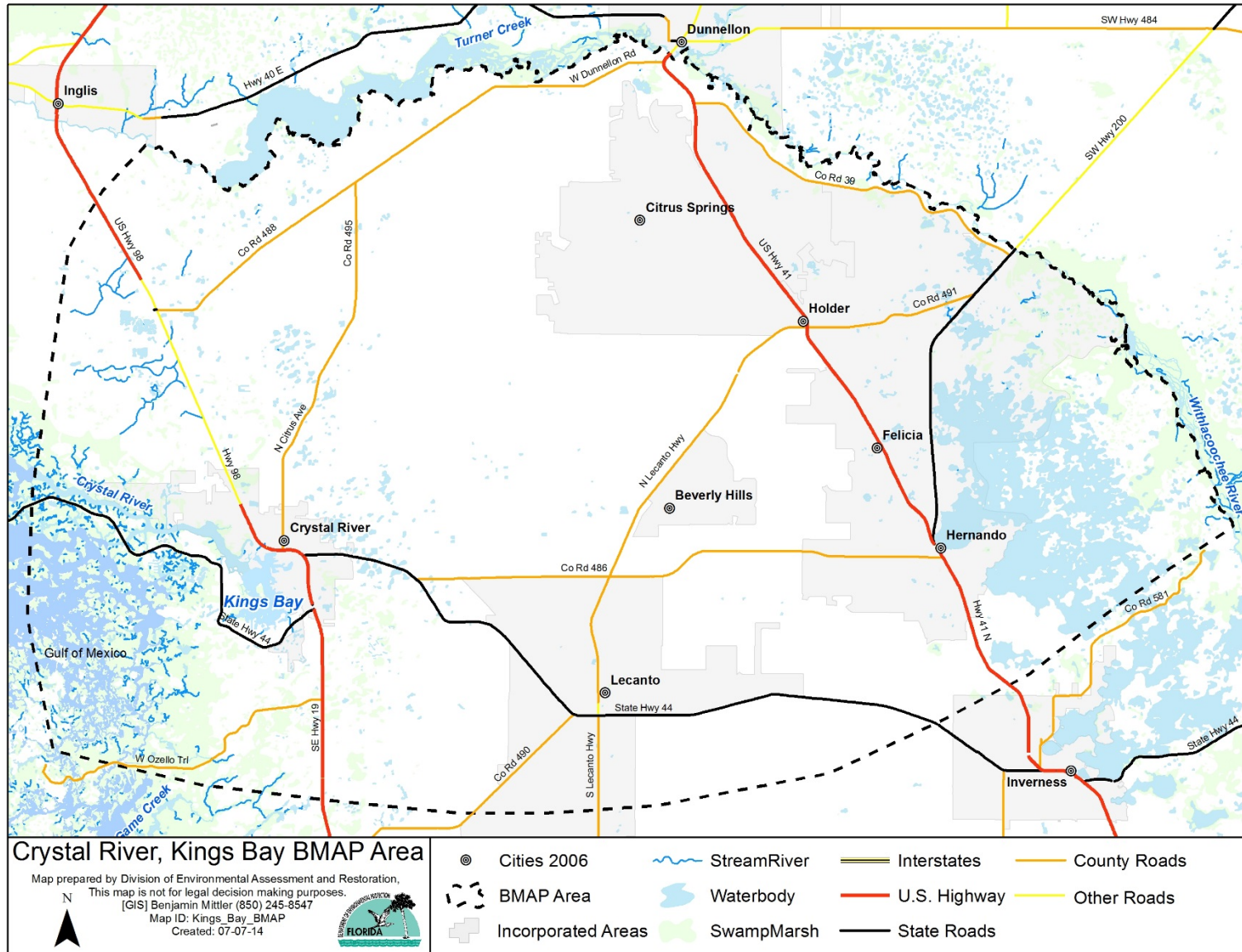
Welcome

- Introductions /Review
- Project Collection Process
- Break
- SWFWMD Nutrient Reduction Projects
- Closure

WBID	Total Nitrogen Reduction	Phosphorus Reduction
1341	22%	14% TP
1341C	64%	0% Ortho-P
1341D	53%	0% Ortho-P
1341F	26%	7% Ortho-P
1341G	21%	10% Ortho-P
1341H	26%	0% Ortho-P

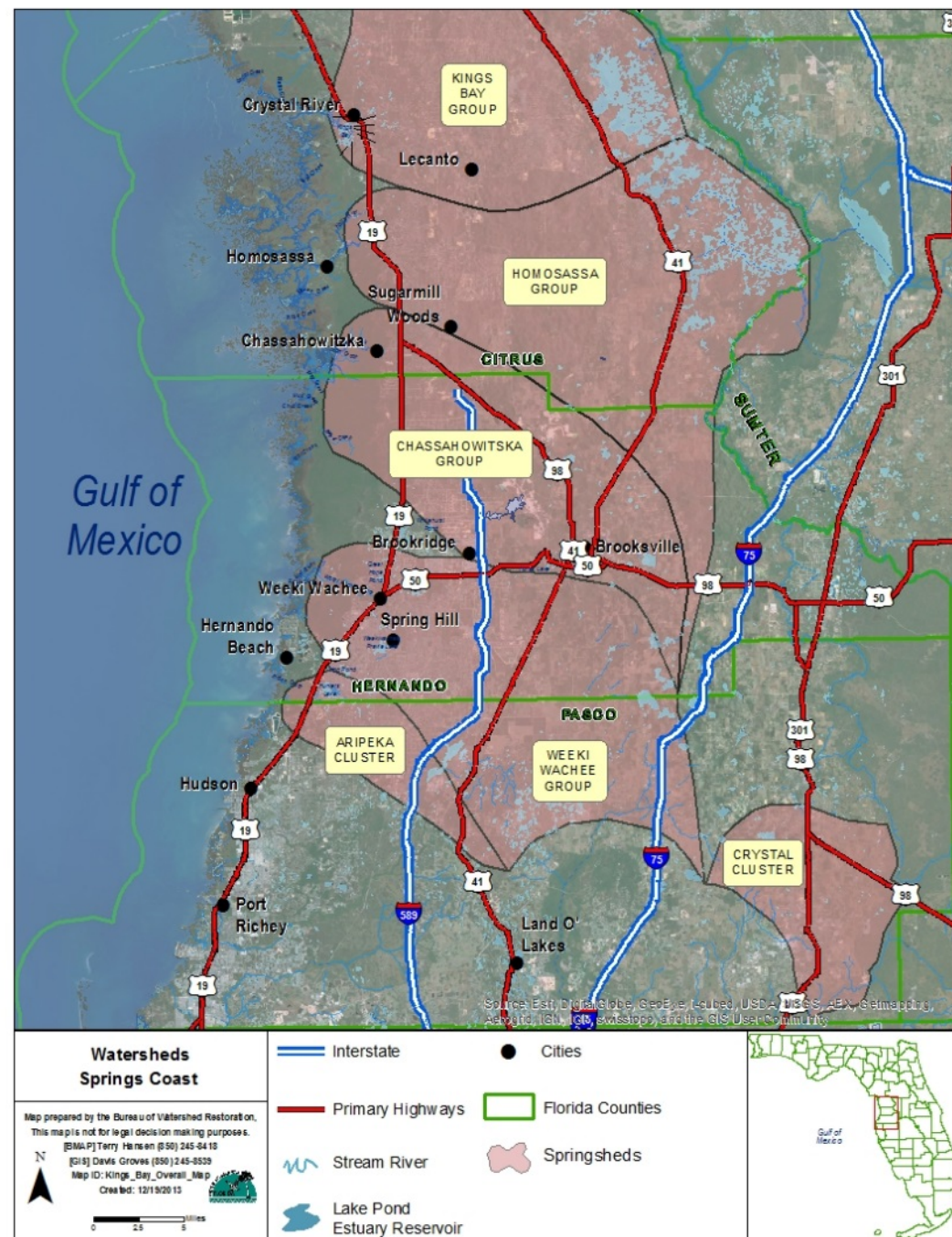


BMAP Area

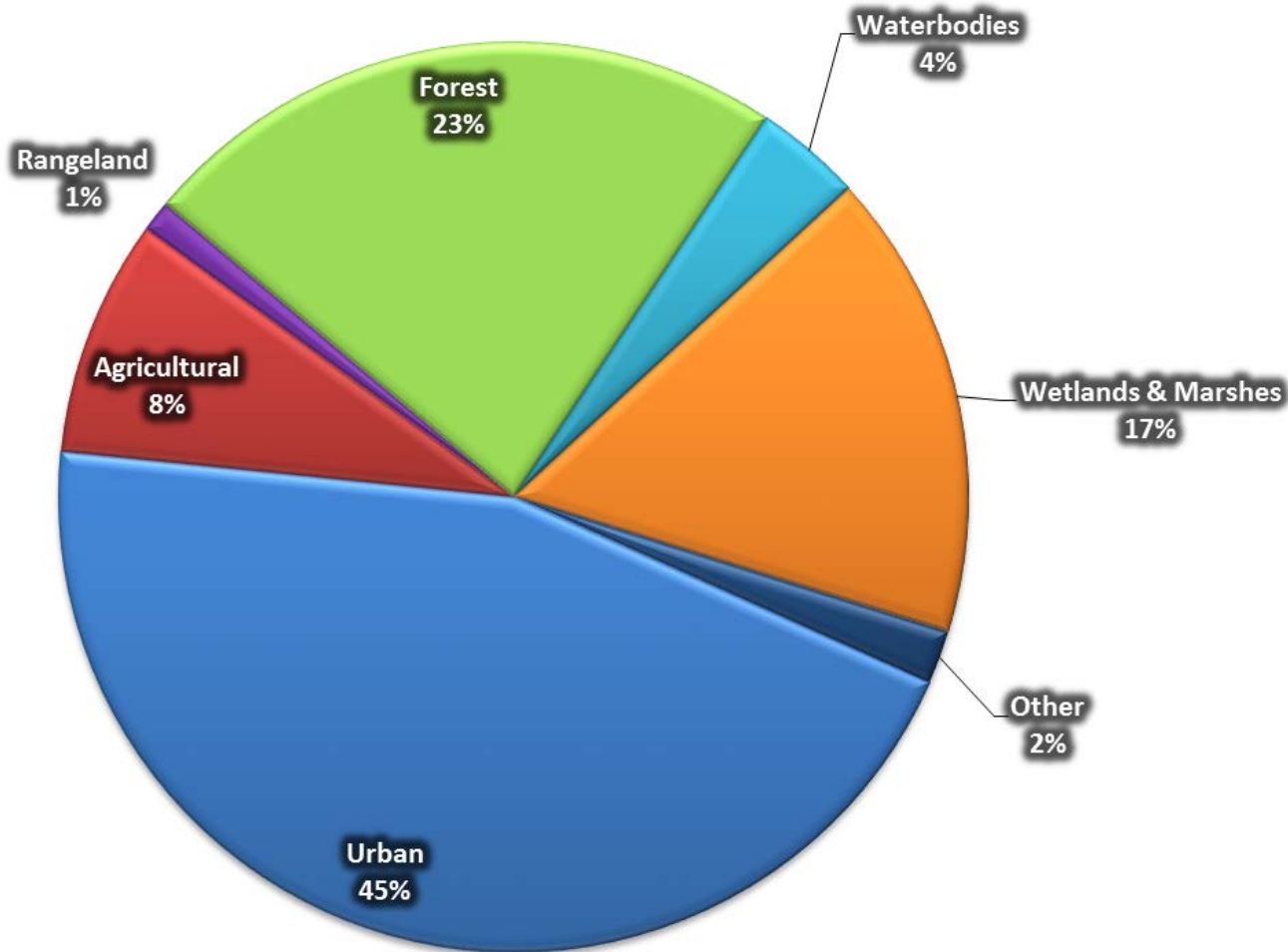


Projects are a part of a regional effort

Concept of SWFWMD
Springs Coast Initiative
needs to be maintained



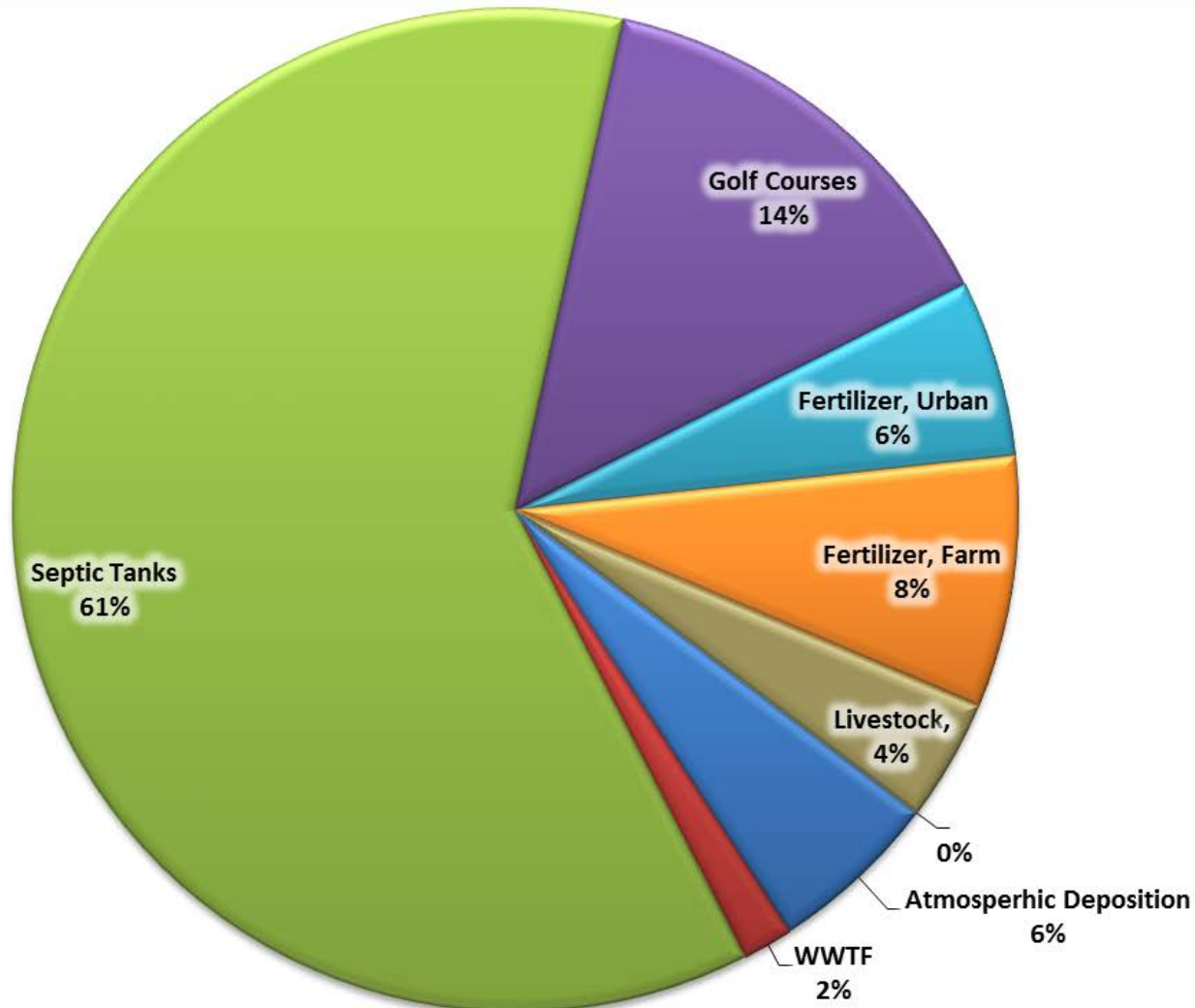
Kings Bay Land Use



- ♦ Majority of inputs occur within agricultural and urban landscapes
- ♦ Nitrogen sources are concentrated in 53% of the BMAP land use



Annual Average Loading to Ground Water



778,218 lb-N/yr

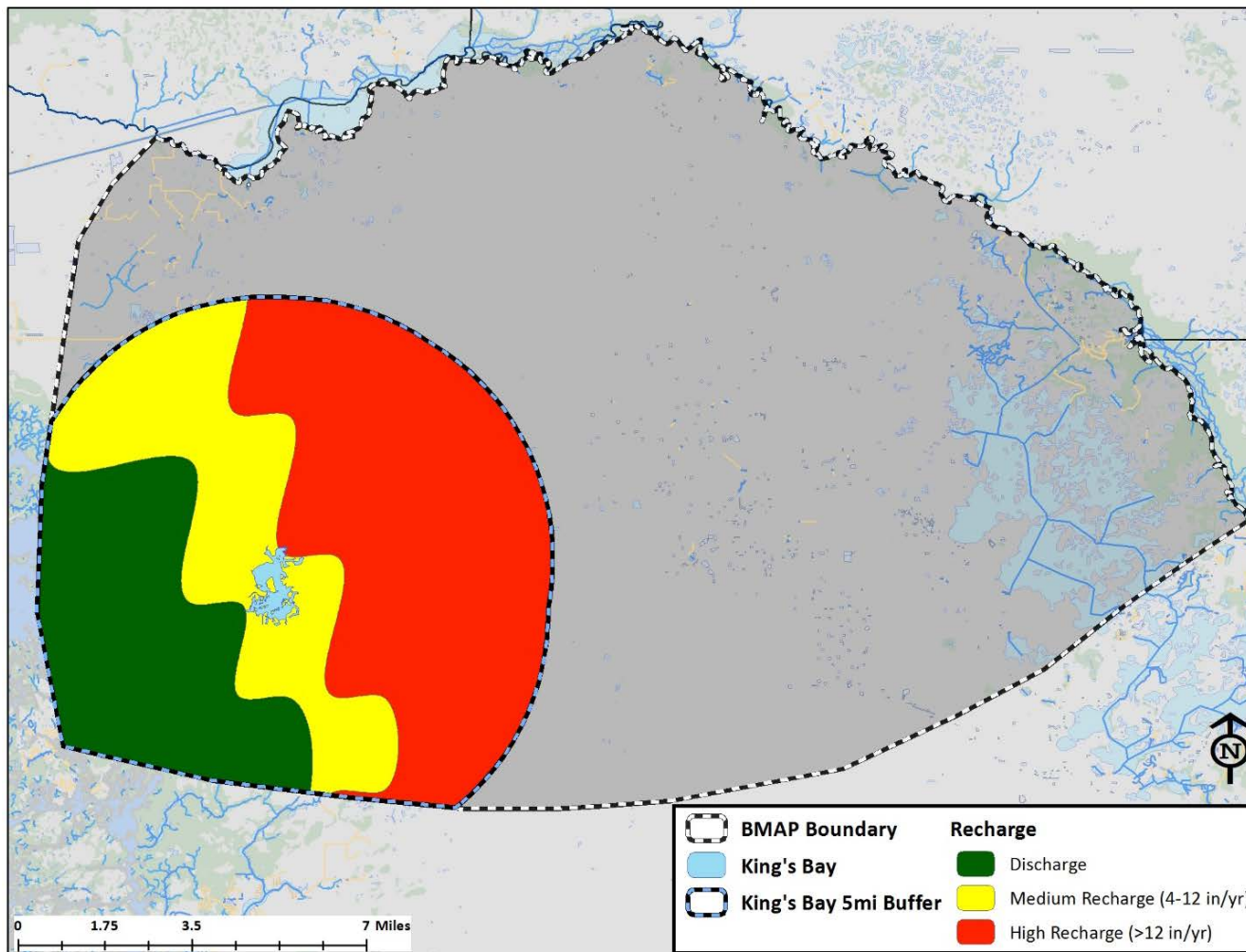


Management Strategies for Nutrient Source Reduction

Considerations:

- Springshed & Bay
- Location
 - Both siting & reduction area
- Legacy Load
- Load Allocations—difficult
- Nutrient Sources--identified in the NSI
- Land Use
- Cost Benefit Ratio

Proximity to Spring Vents: 5 mile buffer



This map was prepared on 05/20/14 by FDEP Ground Water Management Section. For display purposes only. For more information: K.Eller (850)245-8652.

- ◇ Close proximity to the spring vents leads to shorter travel times
- ◇ BMAP boundary contains 178,758 acres
- ◇ 5 mile buffer contains 56,232 acres or 31%
- ◇ Dominated by urban land use practices

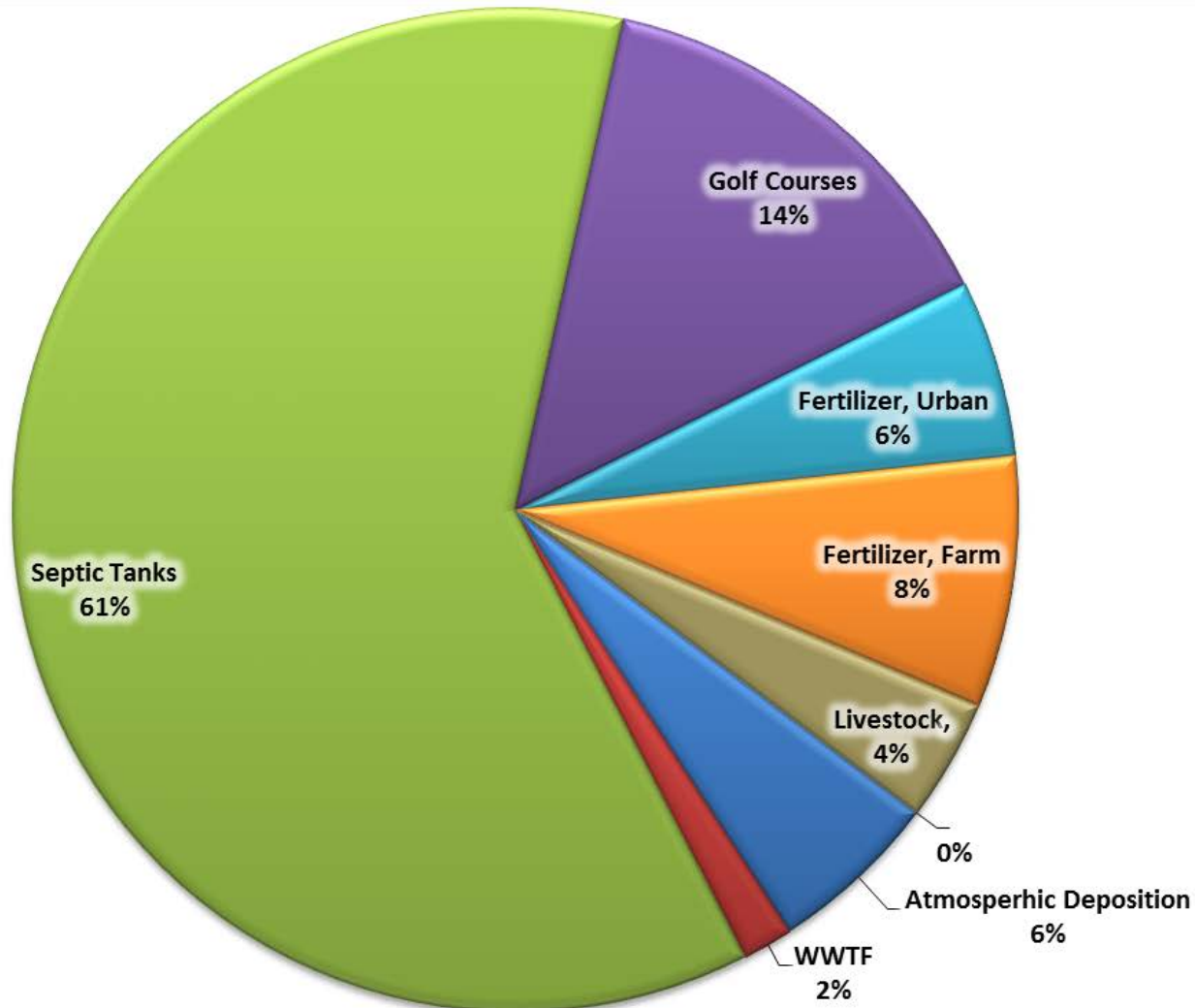


Project Collection Process

- Information Needed
 - Project title
 - Lead entity/partners
 - Start Date – since January 2000
 - End Date
 - Description
 - Location
 - Cost – actual or estimated
 - Nutrient reductions & how estimated



Annual Average Loading to Ground Water



778,218 lb-N/yr



Projects

- Typical projects for loading categories:
 - 14% Golf Courses - BMP implementation and verification (see BMP manual)
 - Meeting planned for 21JUL14 to gather information
 - 12% Agricultural Producers – BMP implementation and verification (see BMP manuals)
 - Meeting planned for 22JUL14 to gather information
 - 6% Urban Fertilizer (Citrus County Fertilizer Ordinance)

BMP Enrollment within the Kings Bay/ Crystal River Proposed BMAP Area

 Kings Bay / Crystal River

Agricultural Land Use (SWFWMD 2009)

 Agriculture and Rangeland

 Urban Areas (2010)

 Major Lakes & Rivers

 County Boundaries

 Managed/Public/Tribal Lands

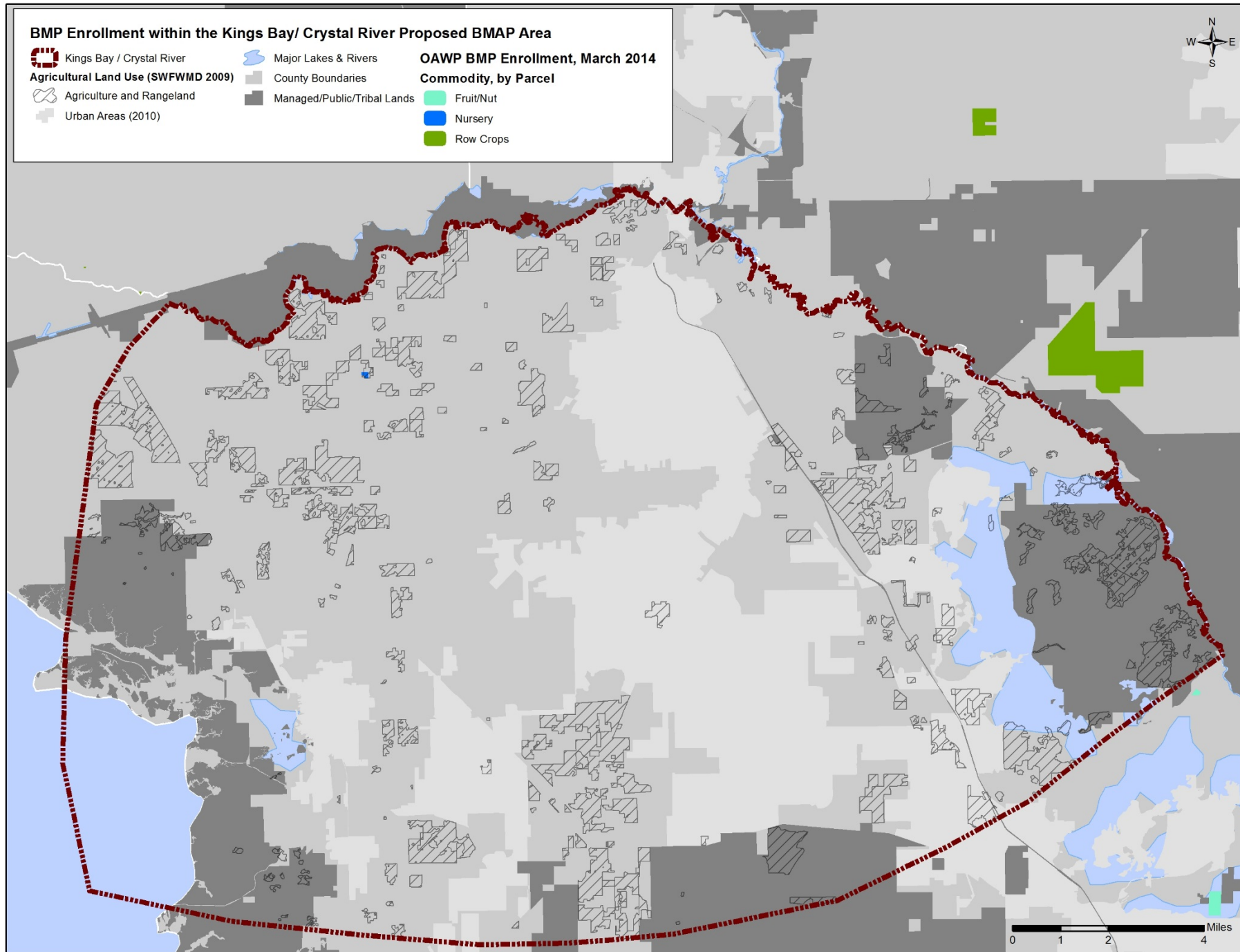
OAWP BMP Enrollment, March 2014

Commodity, by Parcel

 Fruit/Nut

 Nursery

 Row Crops





Projects

Stormwater Project Examples (NOT accounted for in the NSI)

- Public education efforts including FYN program, ordinances (fertilizer, pet waste, irrigation, landscaping), pamphlets, presentations, website, and illicit discharge programs
- Street sweeping
- Baffle boxes, catch basins, continuous deflective separation (CDS) units
- Stormceptor units
- Stormwater reuse
- Wet detention ponds
- Retention BMPs (exfiltration trenches, swales)
- Living shorelines



Projects

Wastewater Treatment Facilities - 2% NSI

- Upgrade facilities to AWT
- Remove/reduce the application of biosolids and treated effluent in the most vulnerable areas of the basin
- Assess/repair the sewer collection system
- Install backup systems on lift stations (telemetry and generators) to prevent overflows
- Extend the sanitary sewer collection system



Projects

Septic Systems

- NSI 61% +/- of the average load to groundwater

actions can not be in conflict with Florida Statutes

- GIS layer identifying location of septic systems & sewer lines in springshed
- Extend the sanitary sewer system and connect septic tank properties to the sewer system
- Use of other technologies to reduce nitrate inputs to groundwater [for example biosorption activated media (BAM) such as Bold and Gold]



Project Examples

- Examples of ongoing projects in Kings Bay and Crystal River area - SWFWMD





Questions?

- Be sure to add your name and email to sign in sheet.
- Please send me interest group contacts
- Spread the word to other interested individuals
- Weeki Wachee BMAP process underway
- Presentations posted at:
[http://publicfiles.dep.state.fl.us/DEAR/BMAP/Springs Coast/BMAPs/CR_KB_BMAP/](http://publicfiles.dep.state.fl.us/DEAR/BMAP/Springs%20Coast/BMAPs/CR_KB_BMAP/)(MONTH of meeting)



Contacts

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<http://www.dep.state.fl.us/water/>
www.WaterMatters.org/springs