



Florida Department of Environmental Protection

Water Quality Restoration Program

Orange Creek Basin Working Group June 30, 2016

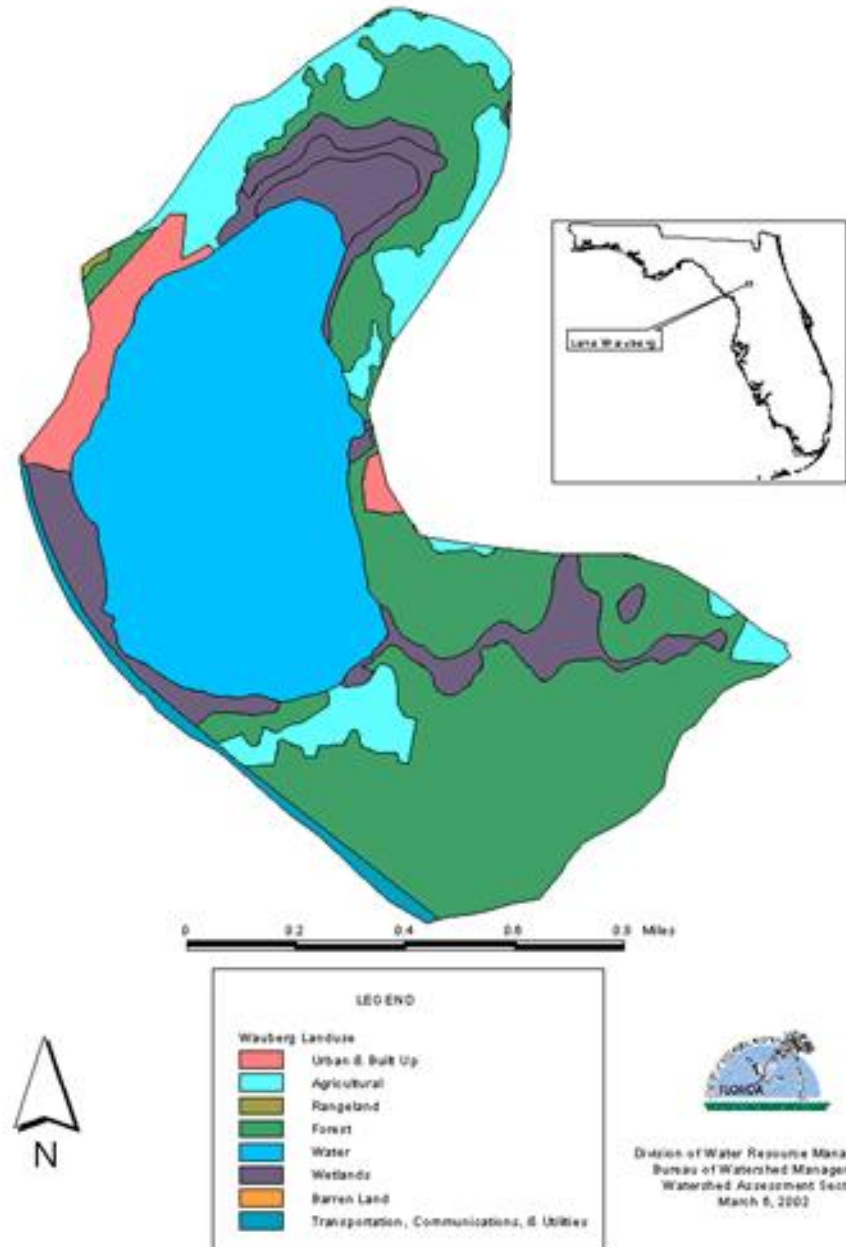
Mary Paulic
Mary.paulic@dep.state.fl.us





- 717 acres
 - 274 acres forest
 - 236 acres lake
 - 87 acres wetland
 - 79 acres agriculture
 - 39 acres urban

LAKE WAUBERG LANDUSE





Lake Wauberg Sources of Nutrients

- OSTDS.

Legend

● Facility000

■ Wauberg

Wauberg_parcel

Impact with regards to "fecal coliform"

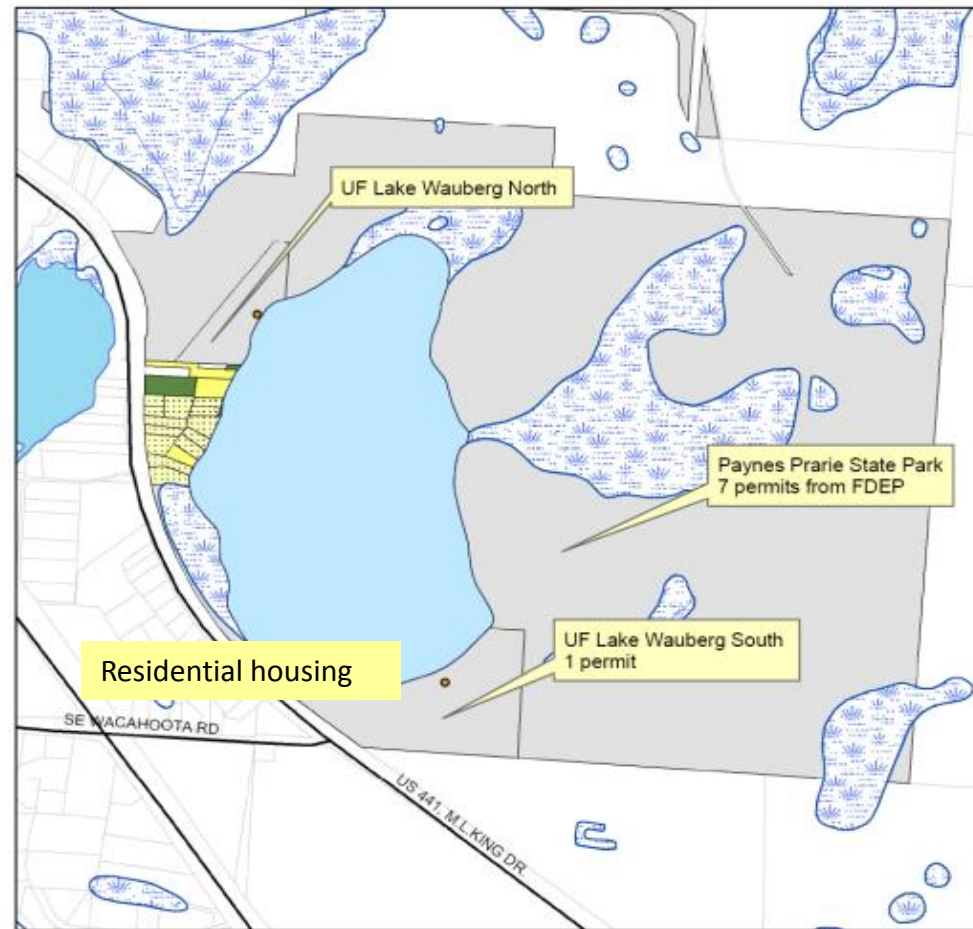
■ not granted access

■ minor

■ pending

■ significant

There are presently NO confirmed impacts



Legend

0 500 1,000 2,000 3,000 4,000 Feet



Lake Wauberg OSTDS

- Problem with OSTDS within Payne Prairie State Park.
- Drainfields have failed and need replacement.
- Variance approved by Variance Review and Advisory Committee for the Onsite Sewage Treatment and Disposal Program.
 - Allows DEP to use OSTDS instead of a permitted package plant.
 - Now must meet current standards for new OSTDS.



Lake Wauberg Monitoring

- Add staff gage to Lake Wauberg to measure water level-fall possibly.
- Collect phytoplankton samples.
 - Start collecting in Lake Wauberg-hopefully by end of July.
 - At least 4 times per year.
 - Dependent on budget.

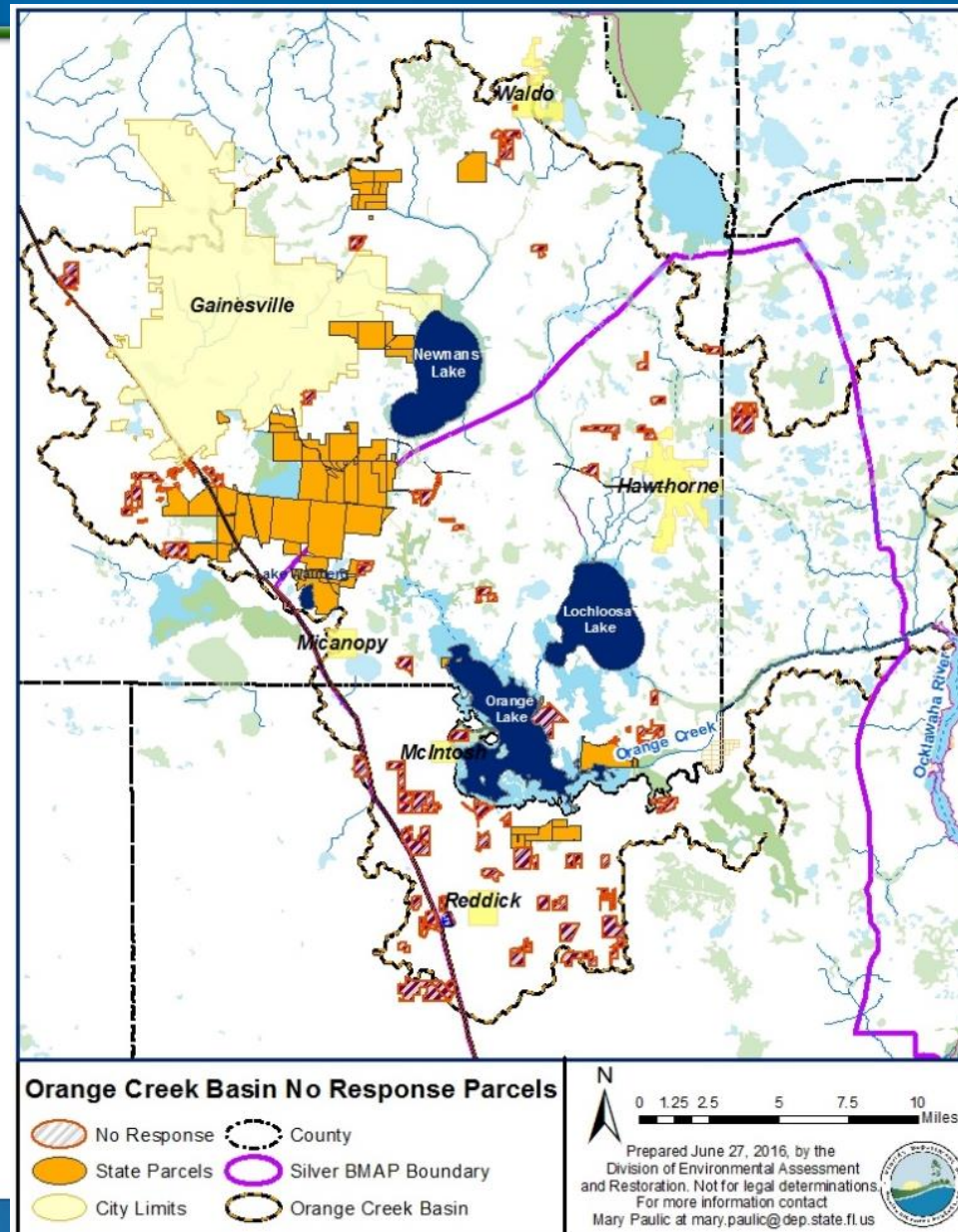


Agriculture Compliance

- DACS Office of Agriculture Water Policy made first contacts with basin producers.
 - Goal to identify active agriculture and ensure enrollment in BMPs.
 - Ensure producers comply with statute.
- Property owners that did not respond to DACS passed to DEP for follow-up.
- DEP sent Compliance Assistance Offer letters to 52 property owners inquiring if the property was agriculture and made offer of assistance with enrollment in BMPs.
 - 15 days to respond to postcard.
 - Represents 136 parcels of private land.



Agriculture Parcels





Example Letter



Florida Department of Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Rick Scott
Governor

Carlos Lopez-Cantera
Lt. Governor

Jonathan P. Stevenson
Secretary

[Pick the date]

COMPLIANCE ASSISTANCE OFFER

«First_Name» «Last_Name»
«Address»
«City» «State» «Zip»

Landowner Identification Number (LIN): «Parcel_»

«GreetingLine»

The Florida Department of Environmental Protection (Department) has identified water resources within the Orange Creek Basin that are receiving too much nutrient pollution from stormwater runoff, wastewater, fertilizer, and other sources. In order to reduce the nutrient loads within the basin, the Department worked with stakeholders to prepare a water quality restoration plan (called a Basin Management Action Plan, or BMAP). The Department adopted the First Phase Orange Creek BMAP in 2008 and Second Phase BMAP in 2014. Cities, counties, and agricultural producers in the basin have undertaken efforts to reduce nutrient loading in the basin, but additional effort is needed.

It is the Department's understanding that you own property within the Orange Creek BMAP area that is classified as agricultural (see enclosed map of the area). Under Section 403.067(7)(b)2.g, Florida Statutes, agricultural operations located within a BMAP area either must implement state-adopted agricultural best management practices or, at their own cost, conduct water quality monitoring prescribed by the Department. With some exceptions, state-adopted best management practices are designed primarily for commercial agricultural operations (those run as a business). Enclosed is information on the available agricultural best management practices programs. For more information on agricultural best management practices, call (800) 226-1066 or send an e-mail to HLT@srwmd.gov. To discuss the option of water quality monitoring, please contact Kevin Coyne at 850-245-8555 or via email at Kevin.Coyne@dep.state.fl.us.

The purpose of this letter is to offer you assistance in complying with Florida law, as described above. The information you provide on the enclosed postcard will help us determine what action you need to take, if any, to be in compliance.

PLEASE BE ADVISED that this Compliance Assistance Offer is part of an agency investigation preliminary to agency action within the meaning of Section 120.57(5), Florida Statutes. It is the Department's desire that you document compliance or corrective actions concerning possible violations so that this matter can be closed without enforcement. **Therefore, please fill out and return the enclosed postcard within 15 days of receipt of this Compliance Assistance Offer.**

Your failure to complete and promptly return the enclosed postcard may result in the initiation of formal enforcement proceedings. We look forward to your cooperation in this matter.

Sincerely,

Thomas Frick, Director
Division of Environmental Assessment and Restoration
Department of Environmental Protection



Example Postcard

- COMPLETE AND MAIL THIS POSTCARD WITHIN 15 DAYS OF RECEIVING THE COMPLIANCE ASSISTANCE OFFER LETTER
- LANDOWNER IDENTIFICATION NUMBER (LIN): XXXX
- Landowner Contact Information (required):
 - Name: _____ Phone: _____
 - Email: _____
- Leaseholder Contact Information (if applicable):
 - Name: _____ Phone: _____
 - Email: _____
- Check all the responses that apply to your property in the Orange Creek Basin (required):
 - ☐ I own, lease, or manage a farm, ranch, container nursery, or tree nursery that operates as a business.
 - ☐ I own and/or manage about _____ acres of planted pines and/or natural-growth trees (please fill in # of acres).
 - ☐ I grow plants or raise animals only for my use, the use of my family or friends, and/or for occasional sale.
 - ☐ My property is already enrolled in Florida Department of Agriculture and Consumer Services (FDACS) BMPs.
 - FDACS will verify the enrollment of your property.
 - Name of Ag operation enrolled: _____ NOI#: _____
 - ☐ Additional Information: _____
 - ☐ Have FDACS staff contact me about enrolling my property in the appropriate BMP program(s).
 - ☐ Have FDEP staff contact me about what is required for me to conduct water quality monitoring on my property.
- For more information on agricultural BMPs, call 1-800-226-1066 or email Hugh Thomas at HLT@srwmd.gov.
- For more information on water quality monitoring, contact Kevin Coyne at (850) 245-8555 or Kevin.Coyne@dep.state.fl.us.
- If you call or email, please refer to the Landowner Identification Number (LIN) located at the top left of this postcard.



Next Step Agriculture

- If no response to offer of assistance, DEP will send warning letter notifying producer that they appear to have not implemented the requirements of Section 403.067(7)(b)2.g., Florida Statutes.
- Future potential for compliance enforcement action if no response to Warning Letter.



Loading Reductions Tutorial

- Orange and Newnans Lake used 1995 land use to estimate loads.
- Newnans Lake watershed includes:
 - Hatchett Creek loadings.
 - Little Hatchett Creek loadings.
- Orange Lake watershed includes
 - Part of Camps Canal/River Styx loadings.
 - Loading inputs from Camps Canal/Prairie Creek and Cross Creek.

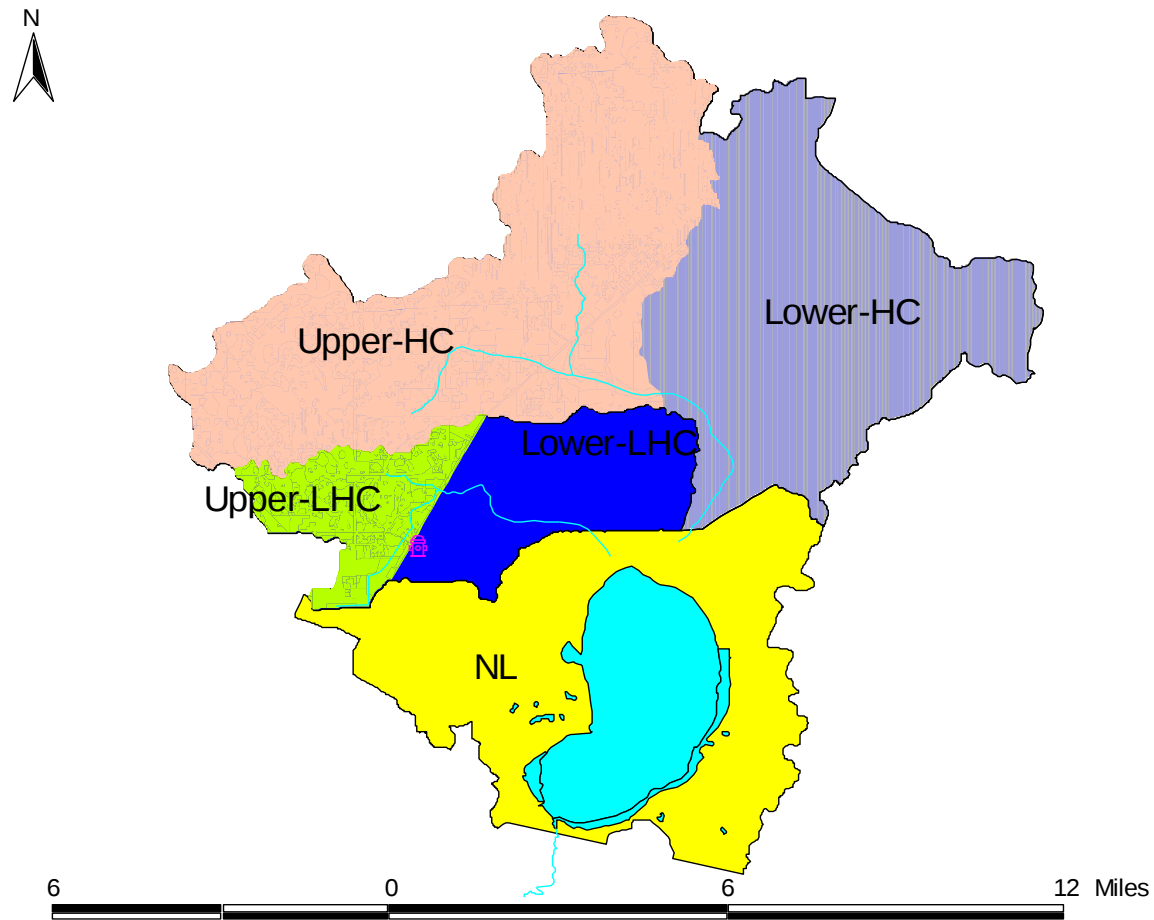


Land Use Approach

- TMDL estimated watershed loads with watershed management model (WMM).
 - Land use composited by sub-basin.
 - Distance from lake not a factor.
- Basis of allocation approach is land use distribution.
- Allocation focuses on urban runoff, developed land uses.
 - Agriculture addressed by BMPs.

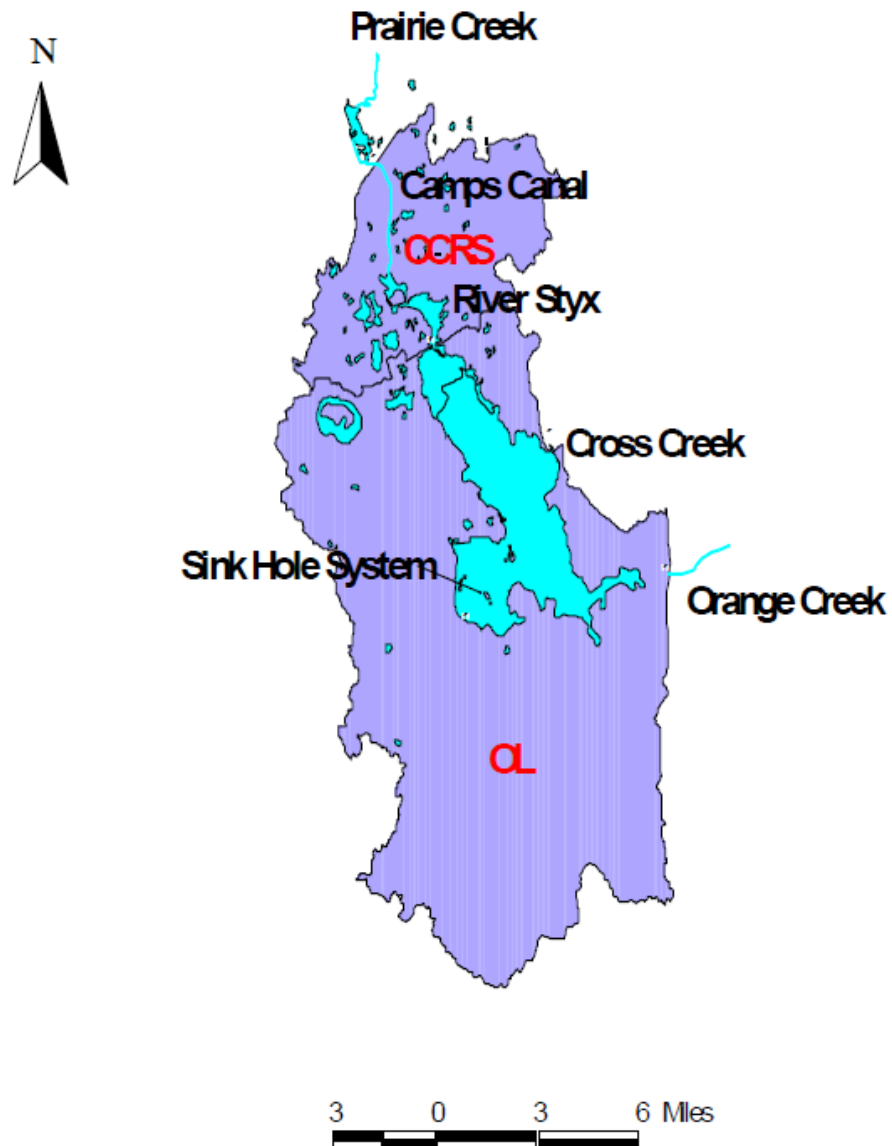


Newnans Lake Sub-basins



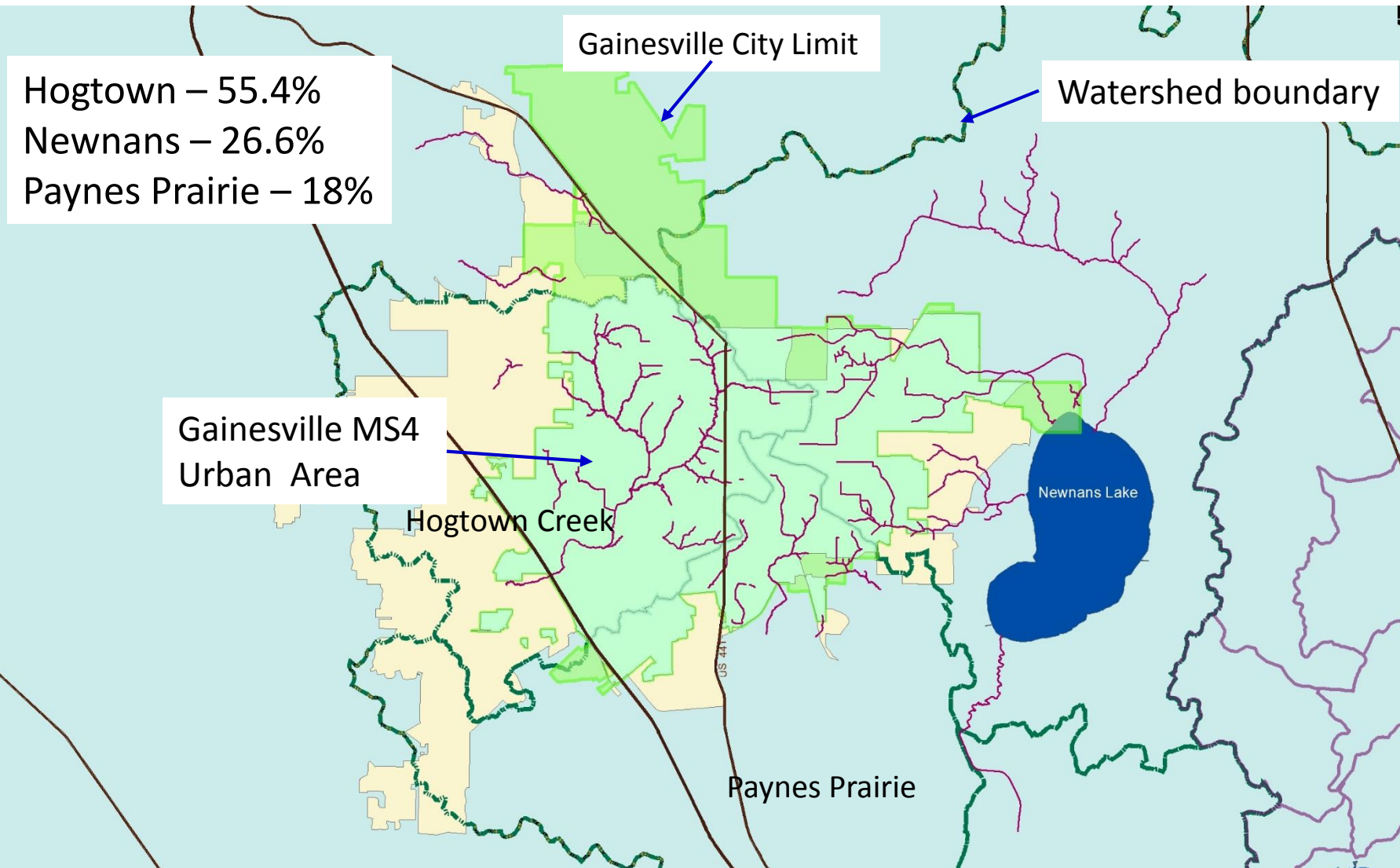


Orange Lake Sub-basins





Jurisdictional Example





Approach

- Use GIS to translate loading calculated by modeling to distribution of land use within jurisdictions.
 - 2009 land use basis for distribution.
- Land use mapping more detailed than TMDL categories, aggregate land use classifications, but still maintain loading distribution.
 - For example, there are many types of agriculture, but models aggregated all types together.
- TMDL water quality targets and loading targets DO NOT CHANGE!



GIS

- Steps in GIS assignment of loading sources by location.
 - Create land use database.
 - Includes lake basin and sub-basin for each land parcel.
 - Jurisdiction assigned to each land parcel.
- Separate out categories for agriculture, natural lands, water/wetlands, and developed uses.
- Focus on developed land uses that generate urban stormwater for developing reductions.



GIS cont.

- Aggregated developed land use into 6 categories used in TMDLs.
 - Agriculture.
 - Urban Open.
 - Low Density Residential.
 - Medium Density Residential.
 - High Density Residential.
 - Transportation and Communication.
- Calculate acres (portion) of a land use category within a jurisdiction as a percent of the total acreage for that land use in the entire basin.
- This percent area by jurisdiction is the basis for all calculations of loading reductions and allocations.



Orange Lake TP Example

DRAFT Orange Lake TP Budget includes OL and CCRS subbasins		Phosphorus loading for TMDL baseline, reductions needed, and reductions expected from restoration and stormwater projects						
Sources of total phosphorus (loading in lbs/yr)	TMDL Baseline loading*	Percent of TMDL Baseline Loading	Controllable TMDL baseline loading	Controllable TMDL baseline % contribution**	Proportional reduction needed to meet TMDL	Expected load reduction from current projects	Remaining phosphorus load	Net estimated TP load
Stormwater runoff undeveloped land use Orange Lake	2,932	10.5%						
forest/rural open	358	1.3%	0				358	
rangeland	19	0.1%	0				19	
water/wetland	2,555	9.2%	0				2,555	
Stormwater runoff from developed uses Orange Lake	886	3.2%	886	4.2%	533		886	
Urban open	94	0.3%	94	0.4%	57		94	
L-D residential	418	1.5%	418	2.0%	252		418	
M-D residential	168	0.6%	168	0.8%	101		168	
H-D residential	4	0.0%	4	0.0%	3		4	
Trans/comm	202	0.7%	202	1.0%	121		202	
Agriculture Orange Lake	5,712	20.5%	5,712	27.2%	3,437		5,712	
Septic systems Orange Lake	384	1.4%	384	1.8%	231		384	
Stormwater runoff undeveloped land use CCRS	1,032	3.7%					1,032	
forest/rural open	243	0.9%	0				243	
rangeland	5	0.0%	0				5	
water/wetland	784	2.8%	0				784	
Stormwater runoff from developed uses CCRS	52	0.2%	52	0.2%	31		52	
Urban open	3	0.0%	3	0.0%	2		3	
L-D residential	24	0.1%	24	0.1%	14		24	
M-D residential	18	0.1%	18	0.1%	11		18	
H-D residential	0	0.0%	0	0.0%	0		0	
Trans/comm	8	0.0%	8	0.0%	5		8	
Septic systems CCRS	6	0.0%	6	0.0%	4		6	
Agriculture CCRS	274	1.0%	274	1.3%	165		274	
Atmospheric deposition (wet/dry)	2,941	10.5%	0				2,941	
Tributary inflows	13,671	49.0%	13,671	65.1%	8,227		13,671	
Camps Canal (Newnans Lake)	10,344	37.1%	10,344	49.3%	6,225		10,344	
Cross Creek (Lochloosa Lake)	3,327	11.9%	3,327	15.9%	2,002		3,327	
Seepage/groundwater	0		0				0	
Internal nutrient recycling	0		0				0	
Loading information								
TMDL baseline TP-loading and % (lbs/yr)	27,890	100.0%	20,985	100.0%	12,628	0	27,890	
Total Maximum Daily Load (lbs/yr)	15,262						15,262	
Reduction needed in loading and % (lbs/yr)	12,628						12,628	



Newnans Lake Distribution

DRAFT Urban Land Use by Acreage and Jurisdiction					
City	Land Use Category	Sub-basin	Acres	Portion	% of Total Land Use by Major Trib
Alachua County	Communication and Transportation	Hatchet Creek	71.3	0.1969	19.7%
Alachua County	High Density Residential	Hatchet Creek	59.1	0.1866	18.7%
Alachua County	Low Density Residential	Hatchet Creek	1824.8	0.9063	90.6%
Alachua County	Medium Density Residential	Hatchet Creek	143.7	0.8570	85.7%
Alachua County	Urban Open	Hatchet Creek	280.8	0.8233	82.3%
Alachua County	Communication and Transportation	Little Hatchet Creek	5.6	0.0046	0.5%
Alachua County	High Density Residential	Little Hatchet Creek	45.3	0.0553	5.5%
Alachua County	Low Density Residential	Little Hatchet Creek	65.1	0.1242	12.4%
Alachua County	Medium Density Residential	Little Hatchet Creek	23.0		4.2%
Alachua County	Urban Open	Little Hatchet Creek	5.5	0.0198	2.0%
Alachua County	Communication and Transportation	Newnans Lake	4.7	0.0232	2.3%
Alachua County	High Density Residential	Newnans Lake	99.5	0.2893	28.9%
Alachua County	Low Density Residential	Newnans Lake	1497.6	0.8045	80.4%
Alachua County	Medium Density Residential	Newnans Lake	402.0	0.4250	42.5%
Alachua County	Urban Open	Newnans Lake	26.7	0.0876	8.8%



Loading Example

- Alachua County Hatchet Creek TP
 - High Density Residential = 19% of basin acreage.
 - Land use loading in basin = 9 lbs/yr TP.
 - Portion of loading assigned to Alachua County=
 $9 \text{ lbs/yr TP} \times 19\% = 1.7 \text{ lbs/yr TP}$.



Total Loading Reduction

- Developed land uses + septic system = total loading reduction and total allocation.
 - Septic system load still needs to be apportioned.
- Point sources have own allocation given in the TMDL.
- Nutrient budget is tool for estimating loading reductions from projects and also transport of reductions downstream.



Path Forward

- Charge from BMAP:

“Implementing actions that address the TMDLs established for lakes Newnans, Orange, and Wauberg is a priority of this second five year BMAP cycle. A goal of this second phase of the BMAP is to identify, during the 18-24 months following its adoption, actionable management strategies that will improve water quality.”



Supplemental Report

- DEP will prepare a Supplemental Report to the 2014 BMAP.
 - Adopted by Secretarial Order.
 - Will include allocations for Newnan and Orange Lakes and potentially Lochloosa Lake.
 - Lake Wauberg has limited stakeholders and probably does not need an allocation.



Other Elements

- Additional report elements.
 - Identify management strategies for implementing TMDLS.
 - Additional projects/specific actions for the lakes as available.
 - Time frames for meeting TMDL targets for the lakes.
- New projects can be added during each annual reporting cycle.
- Adoption of new information into BMAP on five year cycle, up next in 2019.



Next Steps

- Questions?
- Follow-up assignments.
- Future meeting planning.

A photograph of an empty lecture hall with rows of blue seats. The seats are arranged in a tiered fashion, facing towards the front of the room. The background is a plain, light-colored wall.

• Any comments or questions???