



Florida Department of Environmental Protection
Water Quality Restoration Program

Orange Creek Basin Working Group

June 22, 2015

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Agency Updates



TMDL Water Quality Grant

- TMDL Water Quality Restoration Grant Opportunity
 - Request for proposals.
- Deadline for grant application submission is July 1, 2015.
- Contact Katie Britt at Katherine.britt@dep.state.fl.us.



Technical Discussions Overview

- Teleconferences held May 12 and May 28.
- Notes available at <http://publicfiles.dep.state.fl.us/DEAR/BMAP/OrangeCreek/TechnicalDiscussion/>
- Key Summary Points
 - Reviewed list of responsible parties for each lake.



Key points

- Key summary points continued:
 - Identify any missing stakeholders.
 - Industrial or business.
 - Local government.
 - Other interest groups?
 - Annual project reporting.
 - Annual meeting scheduled for August.
 - Project crediting standardization.



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Lochloosa Lake and New TMDLs Status





Status

- Marshall Lake, Lake Roberts, Lake Denham, Lake Weir. (Upper Ocklawaha Basin)
 - Workshops held in February and March.
- Lake Weir (south Marion County):
 - Revised TMDL to better reflect number of OSTDS.
 - Second workshop held May 27.
- Lochloosa Lake.
 - Workshop held March 31.



TMDL Rule Adoption

- Pathway to adoption:
 - Revise TMDL reports based on comments from the general public and EPA.
 - Post the revised reports by the end of July.
 - Publish Notices of Proposed Rule by the end of August.
 - TMDLs to become effective in late October.



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Lake Wauberg Update





Lake Wauberg

- DEP and DOH made site visits:
 - University of Florida recreational areas.
 - Tour of Lake Wauberg.
 - Paynes Prairie Preserve State Park.
 - Purpose was to check wastewater collection facilities.

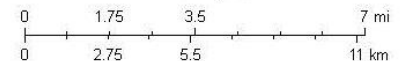


June 18, 2015

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- Florida State Park Trails
 ■ Florida State Park Boundaries

Lake Wauberg



The background of the slide is a photograph of an empty lecture hall. Rows of blue plastic seats are visible, arranged in a tiered fashion. The seats are facing away from the camera towards a white wall at the front of the room. The text "Any comments or questions???" is overlaid in the center of the image in a large, bold, yellow font.

• Any comments or questions???



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Nutrient Sources, Budgets, and Responsible Parties





TMDL Nutrient Loadings

Lake	Parameter	Allowable Loading lbs/yr (TMDL)	Percent Reduction	Reduction in Loading lbs/yr
Orange Lake	TP	15,262	45%	12,627
Newnans Lake	TN	85,470	74%	230,040
Newnans Lake	TP	25,732	59%	14,808
Lochloosa Lake	TP	12,330	38%	21,640
Lochloosa Lake	TN	168,718	58%	274,962
Cross Creek	TP	3,313.5	31%	5,507
Cross Creek	TN	67,756	42%	126,165

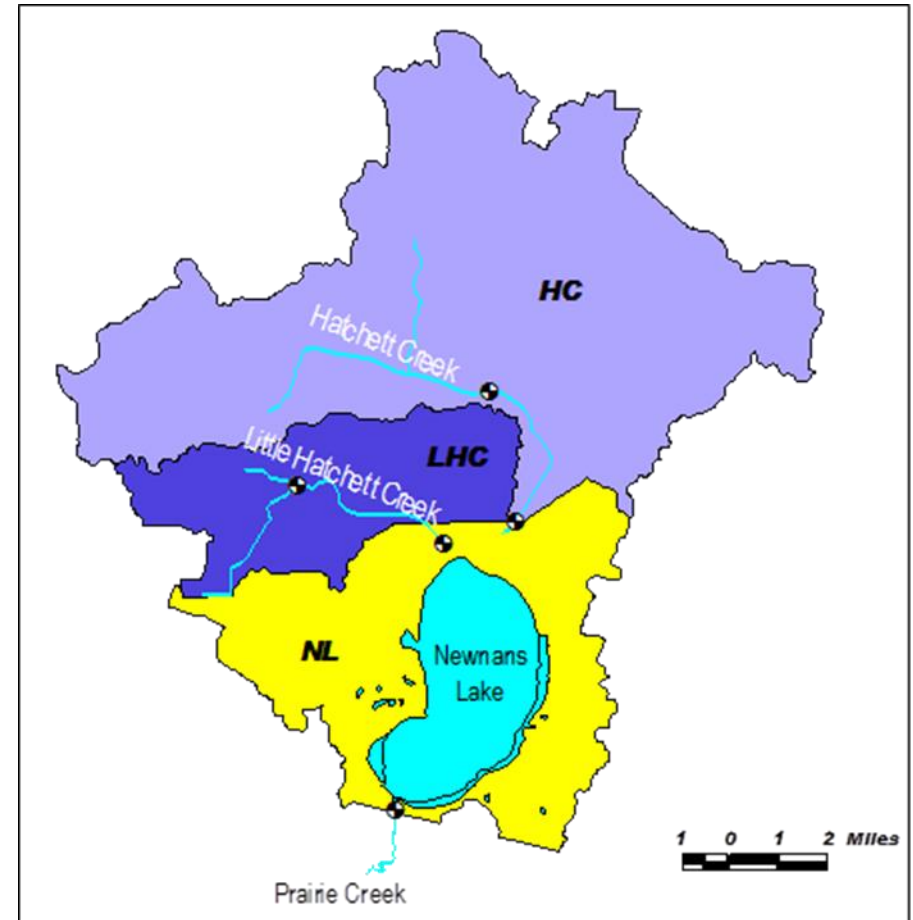
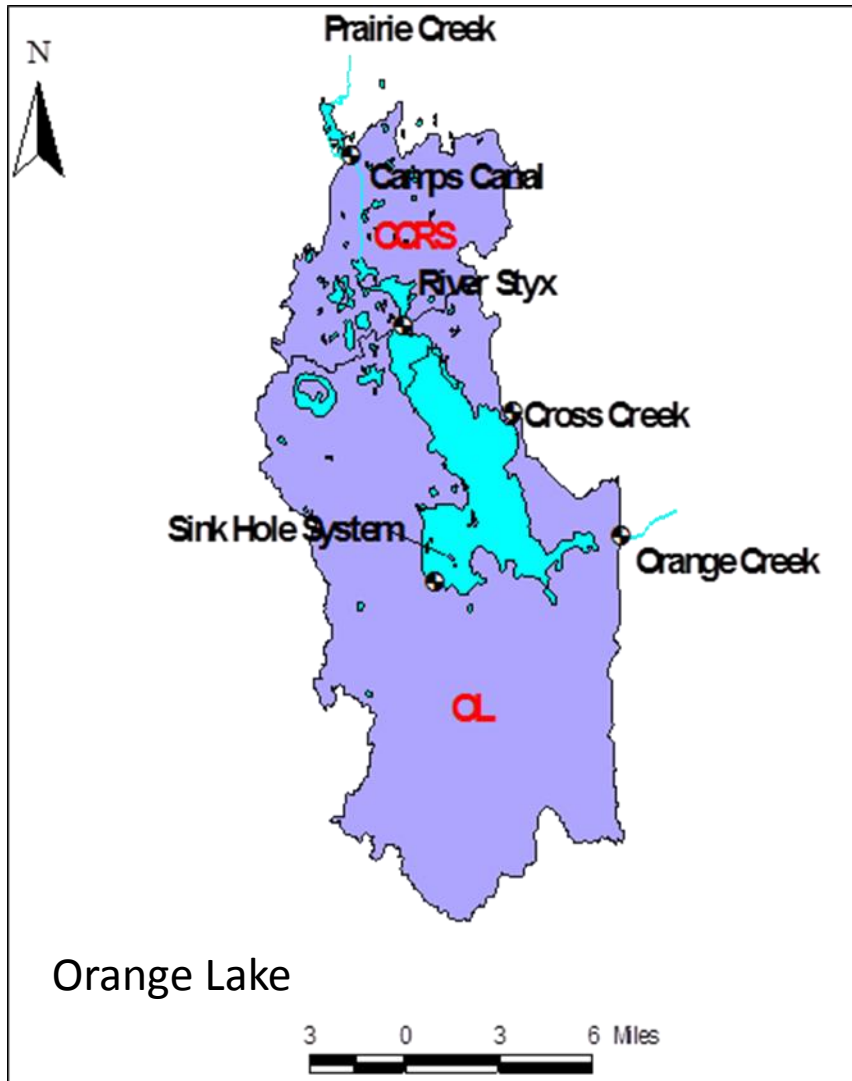


TMDL Characteristics

- Orange and Newnans Lake used 1995 land use.
- 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.



Modeled Basins



Newnans Lake

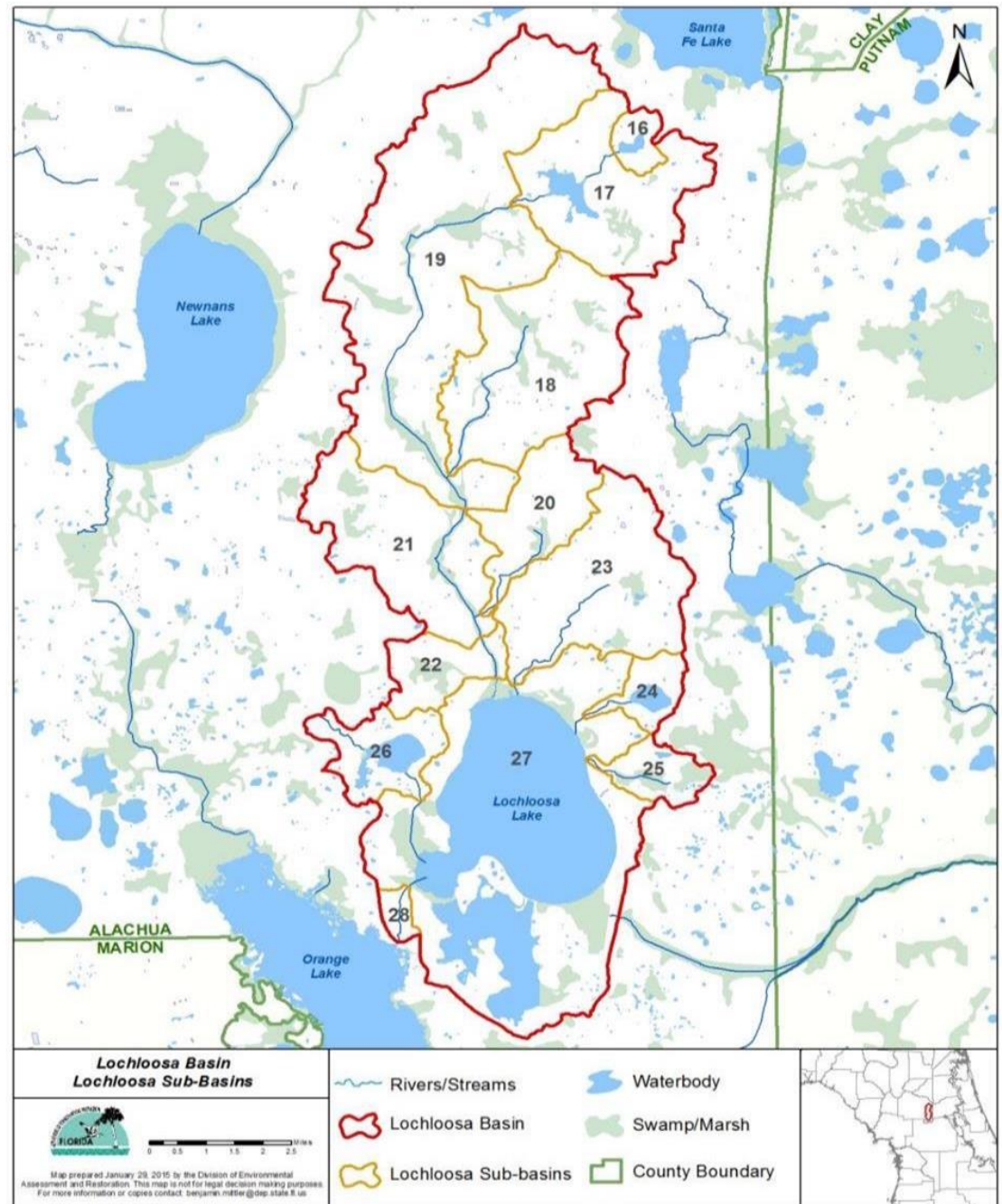


Lochloosa TMDL

- 2009 land use- most recent available.
- HSPF model.
 - Delineated into 13 subbasin.
 - Working on loading summaries for each subbasin.
 - Attenuation applied in upper reaches of Lochloosa Creek.



Lochloosa modeled basin





Land Use Comparison

- Compared 2009 and 1995 land use acreage.
 - Difficulties encountered.
 - Small shifts in land use boundary may be interpretation error and not a change.
 - Interpretation of aerial photos change over time.
 - Time period when photos taken influences interpretation.
- Checked land use changes:
 - Compared category acreage between years.
 - 1995 forest convert to urban or agriculture.
 - 1995 rangeland convert to urban or agriculture.



Orange Lake Land Use

Land Use Category	2009 acres	1995 acres	Difference in acres	Percent difference	Percent of watershed
Agriculture	30,967.8	29146.6	1821.2	5.9%	2.1%
Mining	878.0	871.2	6.8	0.8%	0.0%
Industrial	81.8	100.8	-19.0	-23.2%	0.0%
Urban	8777.0	7611.5	1165.5	13.3%	1.3%
Forest/Silviculture/Rural Open	21,697.6	25316.2	-3618.6	-16.7%	-4.1%
Recreational	158.4	79.2	79.3	50.0%	0.1%
Water/Wetlands	23676.5	22549.4	1127.1	4.8%	1.3%
Rangeland	808.9	1428.7	-619.8	-76.6%	-0.7%
Transportation and Communication	821.0	821.0	0.0	0.0%	0.0%
Urban Open	60.9	3.4	57.5	94.4%	0.1%



Newnans Lake Land Use

Land Use Category	2009 acres	1995 acres	Difference in acres	Percent difference	Percent of watershed
Agriculture	4283.7	3644.3	639.4	14.9%	0.8%
Mining	98.2	135.8	-37.5	-38.2%	0.0%
Industrial	469.9	547.7	-77.8	-16.6%	-0.1%
Urban	7268.4	7352.0	-83.6	-1.1%	-0.1%
Forest/Silviculture/Rural Open	39022.6	41582.5	-2559.9	-6.6%	-3.2%
Recreational	741.7	395.7	346.0	46.7%	0.4%
Water/Wetlands	23227.4	22195.7	1031.7	4.4%	1.3%
Rangeland	2339.2	1936.7	402.4	17.2%	0.5%
Transportation and Communication	1830.3	1529.8	300.5	16.4%	0.4%
Urban Open	65.7	26.9	38.8	59.0%	0.0%



Newnans Lake LU Change

- Forest and rangeland in 1995 converted to.

Land Use 2009	Acres
Agriculture	389.7
Commercial	115.2
Mining	2.3
High density residential	90.3
Institutional	5.8
Low density residential	175.3
Medium density residential	39.2
Transportation	163.3
Total	981.0



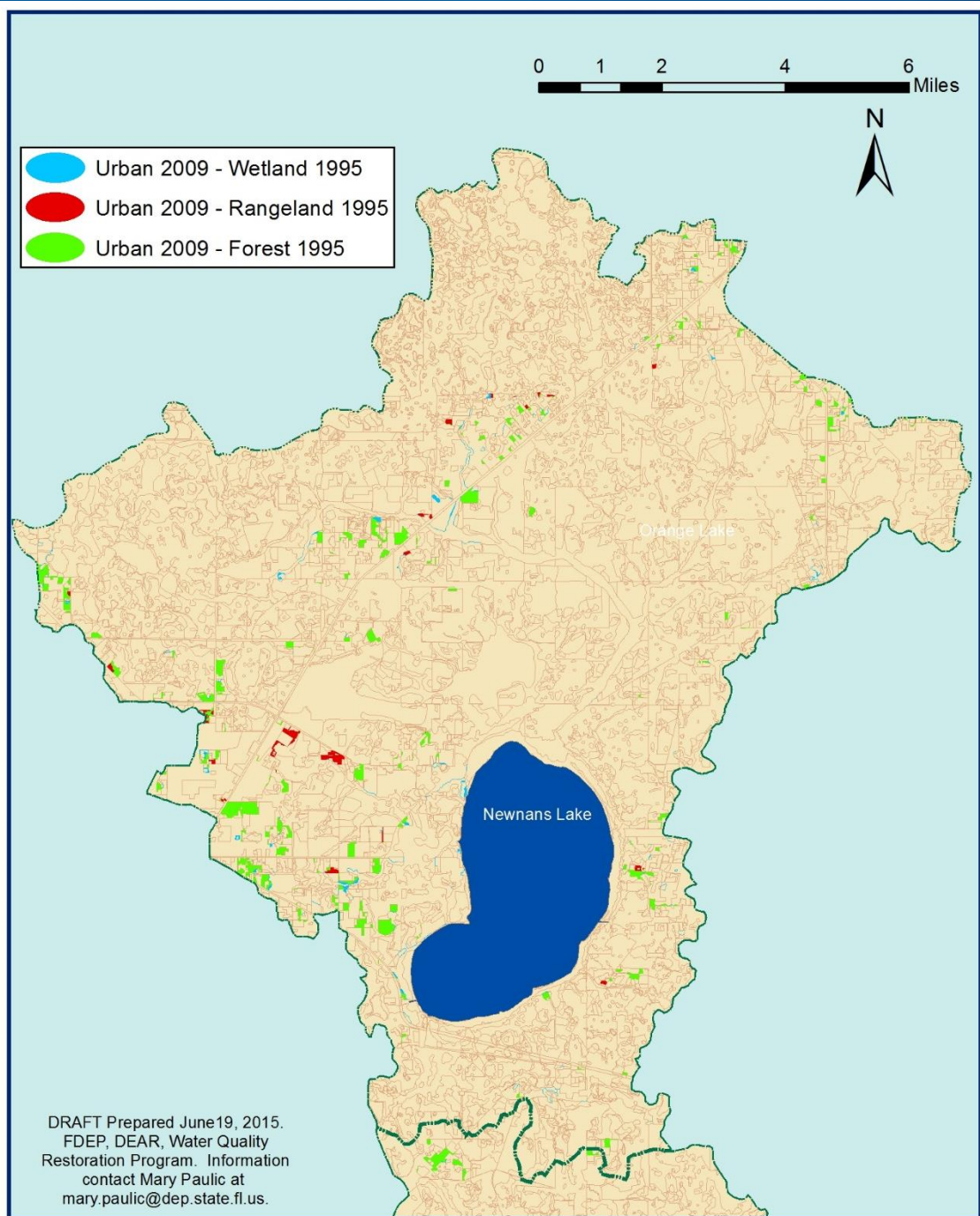
Orange Lake LU changes

- Forest and rangeland in 1995 converted.

Land Use 2009	Acres
Agriculture	2,700.2
Commercial	21.3
Mining	151.9
High density residential	1.0
Institutional	80.5
Low density residential	1,447.9
Medium density residential	8.1
Transportation	11.4
Industrial	0.06
Total	4,422.3

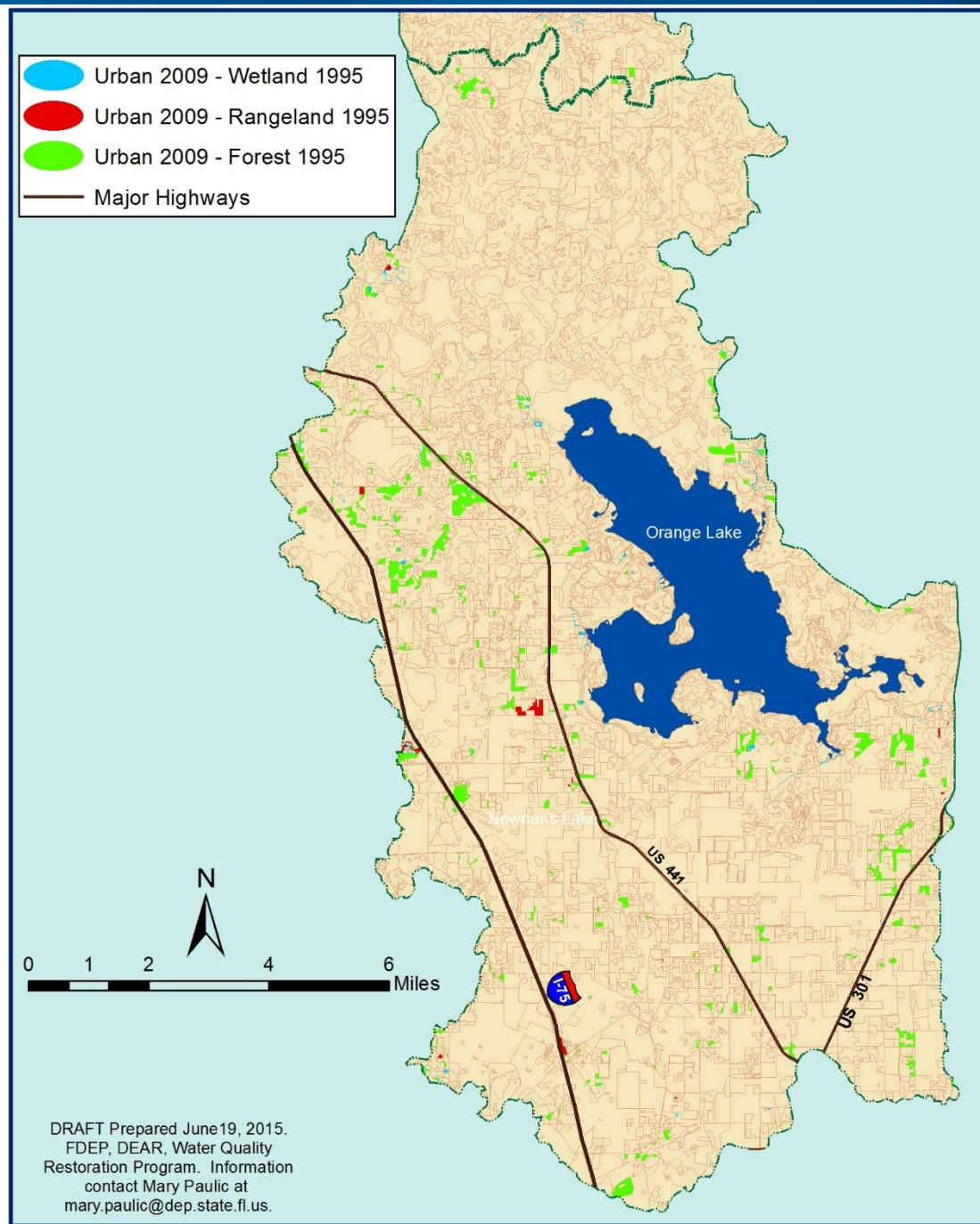


Newnans Urban Changes





Orange Urban Changes





Nutrient Budgets

- Allows tracking of load reductions.
 - Accounts for projects.
 - Accounts for loading carried between lakes.
- Focused on either TP or TN reduction as specified by TMDLs.
 - Should the focus be only on TP reduction?
 - Reasoning is some of the TN comes from N fixation.
 - Still get TN reduction from projects.



Key Concepts

- Budgets based on TMDL source loading information.
- Focus on stormwater/nonpoint source.
 - Point source has wasteload allocation.
- Baseline Loading – existing loading at time of TMDL development.
- Controllable Loading – sources derived from people.
 - Separate out natural sources.

Newnans Lake TP Example

Sources of total phosphorus (loading in lbs/yr)	TMDL Baseline loading*	Percent of Baseline Loading	Controllable TMDL baseline loading	Controllable TMDLStormwater % contribution	Proportional reduction needed to meet TMDL	Reduction based on TMDLPercent Reduction	Expected load reduction from current projects	Remaining phosphorus load	Net estimated TP load
Point sources	145	0.6%	386	0.0%		0			
WWTP discharges		0.0%							
Brittany Estates Mobile Home Park	145	0.6%							
Wastewater infrastructure		0.0%							
leakage from WW collection systems		0.0%							
illegal connections to SW		0.0%							
Overflows from sanitary sewer system		0.0%							
Private collection systems		0.0%							
MS4 S-W systems (outfalls)		0.0%							
Stormwater runoff (direct to lake)	2,270	8.9%	0	0.0%					
Natural area runoff	1,823	7.1%	0	0.0%	0	0			
forest/rural	329	1.3%	0	0.0%	0	0			
rangeland	95	0.4%	0	0.0%	0	0			
water/wetland	1,399	5.5%	0	0.0%	0	0			
stormwater runoff from developed uses	447	1.7%	447	2.2%	327	264			
Urban open	33	0.1%	33	0.2%	24	19			
Low density residential	145	0.6%	145	0.7%	106	86			
Medium density residential	204	0.8%	204	1.0%	149	120			
High density residential	31	0.1%	31	0.2%	23	18			
Transportation/communication	34	0.1%	34	0.2%	25	20			
Agriculture	209	0.8%	209	1.0%	153	123			
Atmospheric deposition (wet/dry)	3,197	12.5%	0	0.0%	0	0			
Tributary inflows	5,683	22.2%	5,683	28.5%	4,153	3,353			
Hatchett Creek	4,259	16.6%	4,259	21.4%	3,112	2,513			
Little Hatchett Creek	1,424	5.6%	1,424	7.1%	1,041	840			
Seepage/groundwater	540	2.1%	0	0.0%	0	0			
Septic tanks	108	0.4%	108	0.5%	79	64			
Internal nutrient recycling	13,478	52.6%	13,478	67.6%	9,850	7,952			
Loading information									
TMDL baseline TP-loading and % lbs/yr	25,630	100.0%	19,925	100.0%	14,561	11,756			
TMDL stormwater baseline loading lbs/year	25,485								
Total Maximum Daily Load Allocation(lbs/yr)	10,924								10,924
TP Loading reduction needed in lbs/yr	14,561								
Loading reduction needed for Orange Lake	6,223								

DRAFT



Nutrient Budget Definitions

- Proportional Loading Reduction – adjustment for natural sources portion of TMDL.
 - Proportionally larger loading assigned to human sources.
 - Meets TMDL total loading reduction.
- Reduction based on TMDL percent – straight percent reduction in source.
 - Total reduction achieved less than needed for TMDL.



Reductions

- Nutrient budget outlines loading by sources.
- FDACS works with agricultural producers.
 - Notice of Intent to cover BMPs.
- Focus on stormwater loading from developed areas.
- Next step allocate loading reductions by responsible party as appropriate.



Definitions

- Stormwater Natural Sources:
 - Wetlands.
 - Water.
 - Forest/rangeland.
- Agriculture:
 - Pasture.
 - Row Crop.
 - Tree Crop.
 - Feeding Operation.
 - Other Agriculture.



Definitions Continued

- Stormwater human derived sources:
 - Residential housing.
 - Commercial property.
 - Open land/recreation.
- Mining.
- Industrial.



Accounting

- Partition out these sources:
 - Atmospheric deposition.
 - Groundwater/seepage except septic systems.
 - Natural area stormwater runoff.
- Typically, would not remediate these types of sources.



Internal Loading

- Part of budget.
- Accounting for loading reductions.
 - Quantification so far has been difficult.
 - Projects do address.
 - Consider reduction in watershed = internal load reduction.
- Role of internal loading:
 - Recycles nutrient stored in sediment.
 - May add new loading through algal activities.



Responsible Parties

Newnans Lake	
Gainesville	Gainesville Regional Airport
Alachua County	Community/Environmental Interests
FDOT-District 2	FWC
FDACS-Office of Ag Water Policy	FDEP-NE District
Paynes Prairie Preserve State Park	Gainesville Regional Utilities
SJRWMD	Florida Forestry Association
Florida Forest Service	Plum Creek
Rayonier	



Responsible Parties cont.

Orange Lake	Orange Lake	Lochloosa Lake
Alachua County	Plum Creek	Alachua County
Marion County	Rayonier	Hawthorne
McIntosh	FWC	FDOH-Alachua County
Micanopy	Florida Forestry Association	FDOT-District 2
FDOT-District 2		FDACS-Ag Water Policy
FDOT-District 5		Florida Forest Service
FDACS- Office of Ag Water Policy		SJRWMD
SJRWMD		FDEP-NE District
FDOH-Alachua County		Plum Creek
FDOH-Marion County		FWC
Florida Forest Service		Community/Environmental Interests
		Florida Forestry Association



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Reporting and Annual Meeting Preparation





Purpose

- Watershed Restoration Act requires:
 - Minimum annual reporting.
- Report progress on implementing projects.
- Opportunity to highlight accomplishments.
- Shift in time frame.
 - Covers year plus since BMAP adoption.
 - January 1, 2015 to June 30, 2015
 - Previously used the calendar year.



Annual Meeting Prep

- Request for updates sent in May.
- Ask to report on project status.
 - Progress of current projects.
 - Proposed new projects
- Water quality update.
 - Confirm monitoring locations.
 - Water quality summary.
- Summary report prepared and distributed.



Schedule

Date	Entity	Activity
May 14	FDEP	Complete monitoring update materials and send out to monitoring entities describing a due date of June 8 th .
May 22	FDEP	Complete project collection materials and send out to stakeholders (current project updates and new project submittal form) describing a due date of June 8 th .
June 8	Monitoring Entities	Monitoring updates due to Mary Paulic, FDEP. (Completed as of May 22, 2015)
June 22	Management Entities	Project updates and new project information due to Mary Paulic, FDEP.
June 23 -30	FDEP	Prepare Annual Report; follow up with stakeholders if there are questions about their submittals.
July 1-15	FDEP	Internal review of report.
July 16-29	FDEP	Edits to the report based on internal comments.
July 30	FDEP	Send report to stakeholders (one week before the annual meeting).
August 6	All	Annual meeting and report review.
August 28	All	All comments due on report.
September 15	FDEP	Final version of the report is posted.



New Projects

- Potential future projects (such as low impact development, ordinances) that address second BMAP phase loading reductions.
- Focus on projects that address priority waterbodies.
 - Meet required allocations.



Information Request

- In addition to project information, additional information:
 - New ordinances adopted.
 - Guidance documents adopted.
 - Environmental protection programs.
 - Water or land restoration activities.
 - Management plans (stormwater studies).



New Information

- Any recent FDEP funding or plans to request?
 - Section 319 grant.
 - TMDL grant.
 - State Revolving Fund.
 - Other



Next Steps

- Questions?
- Public Comments.
- Follow-up assignments.
- Future meetings.