



Florida Department of Environmental Protection
Water Quality Restoration Program

Upper Ocklawaha Basin Working Group

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New TMDL 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 onsite treatment and disposal systems (OSTDS).
 - Second workshop held May 27.
- Lochloosa Lake:
 - Workshop held March 31.



TMDL Rule Adoption

- All 5 TMDLs proposed for one adoption process.
- Pathway to adoption:
 - Revise TMDL reports based on comments from the general public and Environmental Protection Agency (EPA).
 - Next steps depend on feed back from EPA.
 - Post the revised reports before end of August.
 - Publish notices of proposed rule by the end of October.
 - TMDLs to become effective in late December.



Florida Department of Environmental Protection

Agency Updates





Florida Department of Environmental Protection

Upper Ocklawaha Basin Annual Report



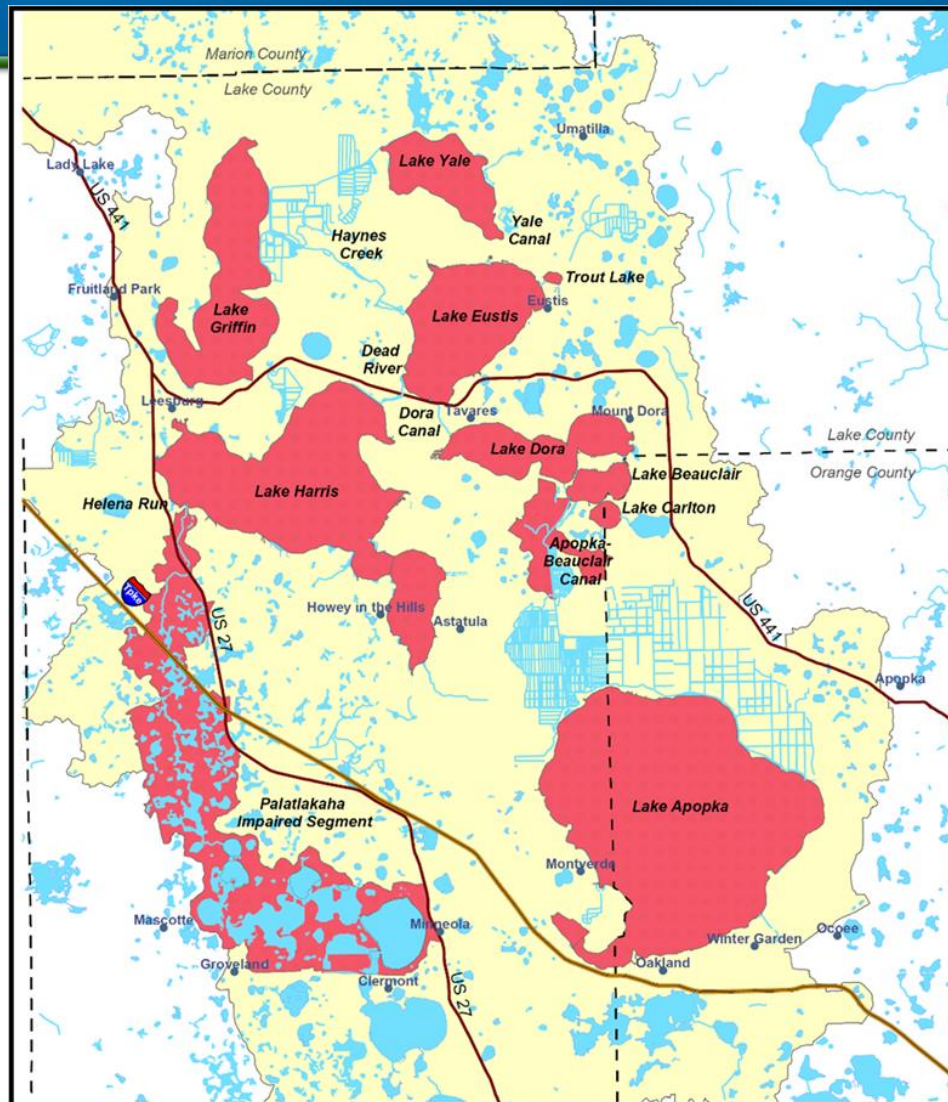


Purpose

- Covers January 1, 2014 through June 30, 2015.
- Update of projects / activities underway or planned as well as changes.
- Assesses water quality.
 - Progress toward meeting TMDL targets.
- Highlight accomplishments.
- Estimate TP loading reductions.



Upper Ocklawaha Basin



0 1 2 3 4 5 6 Miles

Upper Ocklawaha Basin



Map prepared April 4, 2006 by the
Bureau of Watershed Management,
Division of Water Resource Management.
Modified August 1, 2006.

Legend

- Florida County Boundaries
- Ocklawaha Basin Boundary
- Impaired Waterbodies



Monitoring Quick Notes

- Reminder - Data uploads to STORET at least annually!!!
- Phytoplankton data collection.
 - Do we need to make arrangements to maintain?
- Technical Working Group review of monitoring plan.
 - Check that impaired waterbodies continue to have at least one station.
 - Add Lake Roberts, Lake Denham, and Marshall Lake to BMAP monitoring plan.



Rainfall and Hydrologic Data



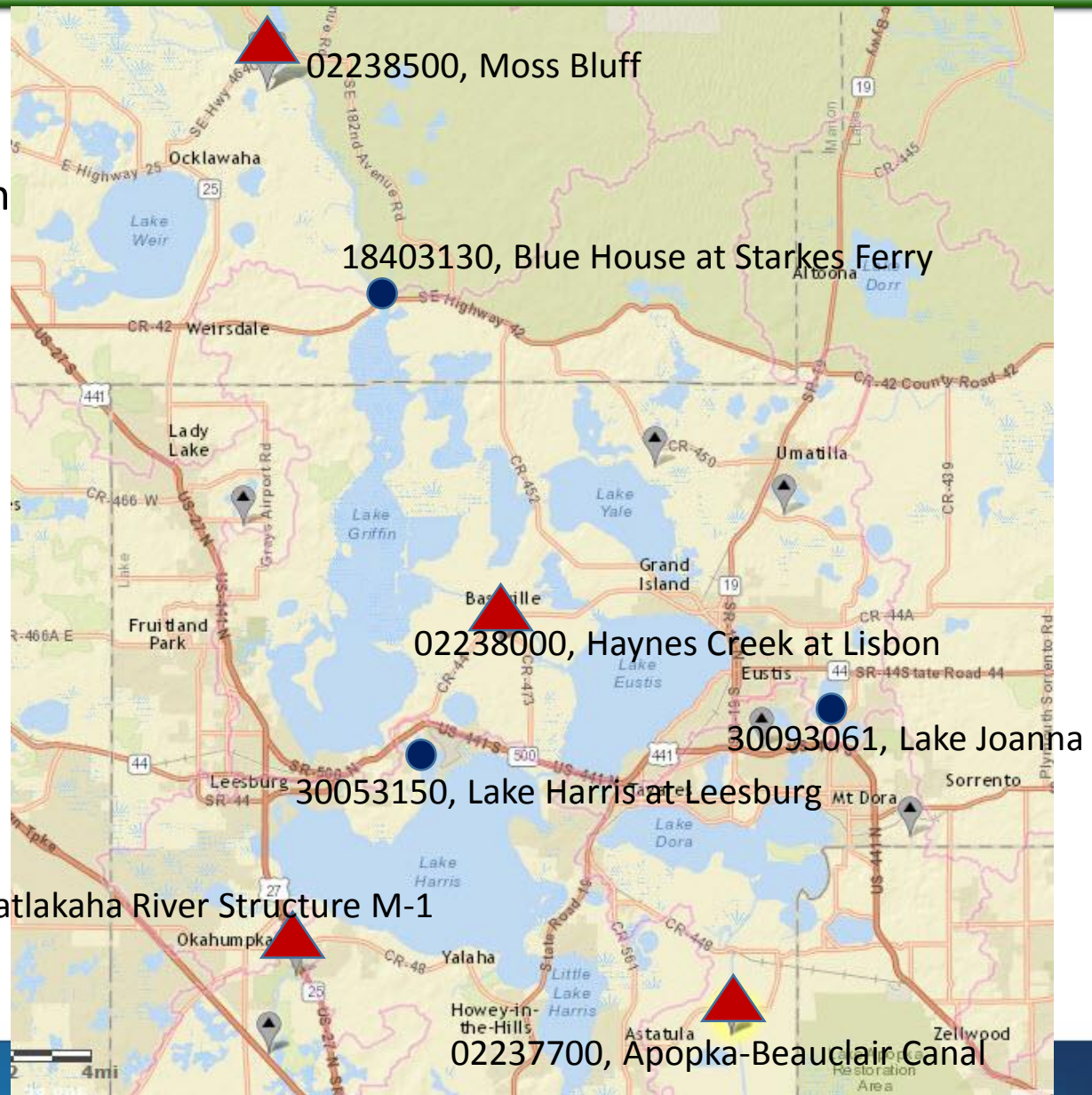
Rainfall

- Long-term average annual rainfall amount.
- Average of 4 stations:
 - 18403130, Blue House at Starkes Ferry.
 - 30053150, Lake Harris at Leesburg.
 - 30093061, Lake Joanna.
 - 28765084, Lake Louisa State Park.



Rainfall and Discharge Locations

- ▲ Discharge, water elevation
- Rainfall quantity

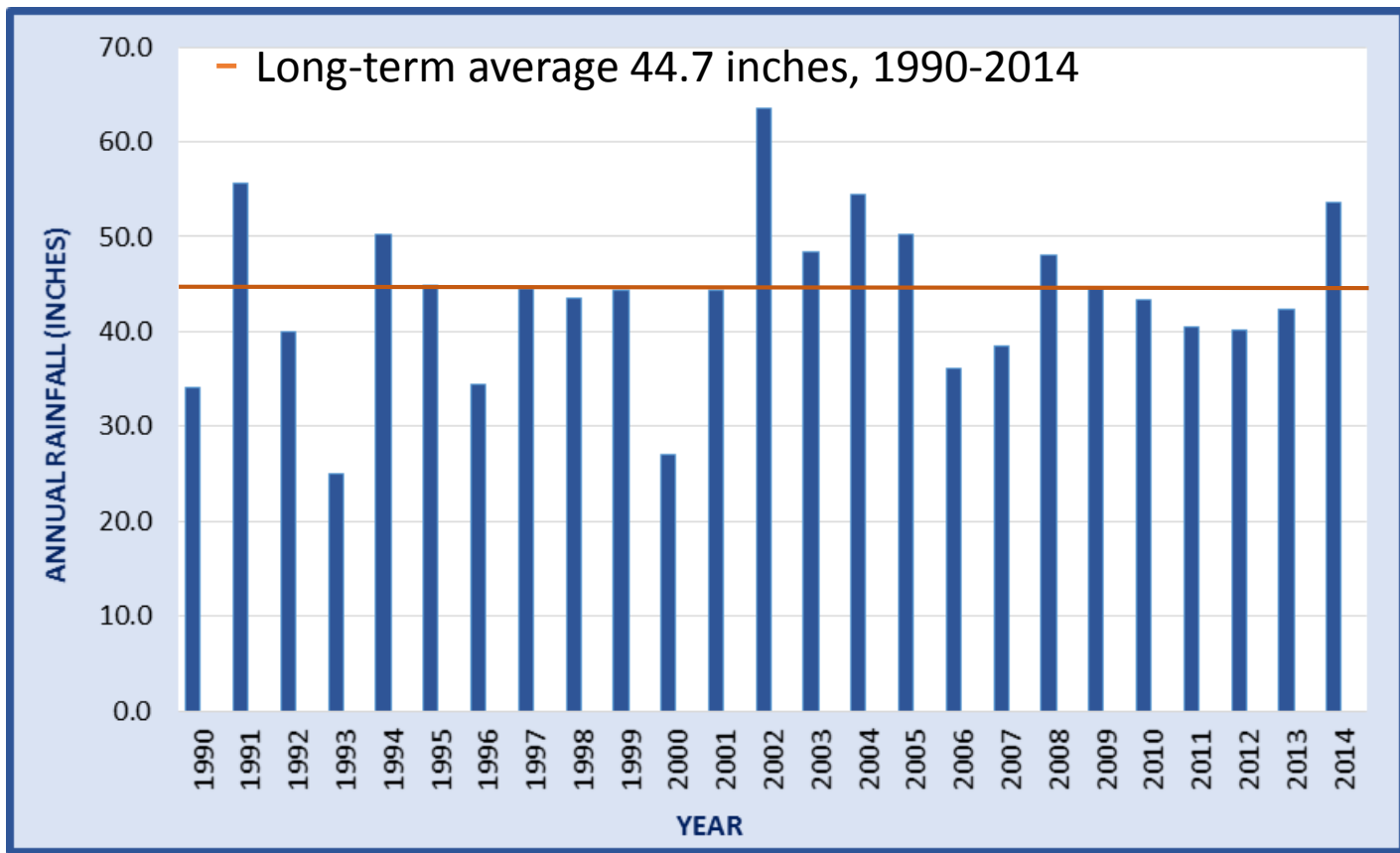


*base map generated from
USGS website.

9/14/2015



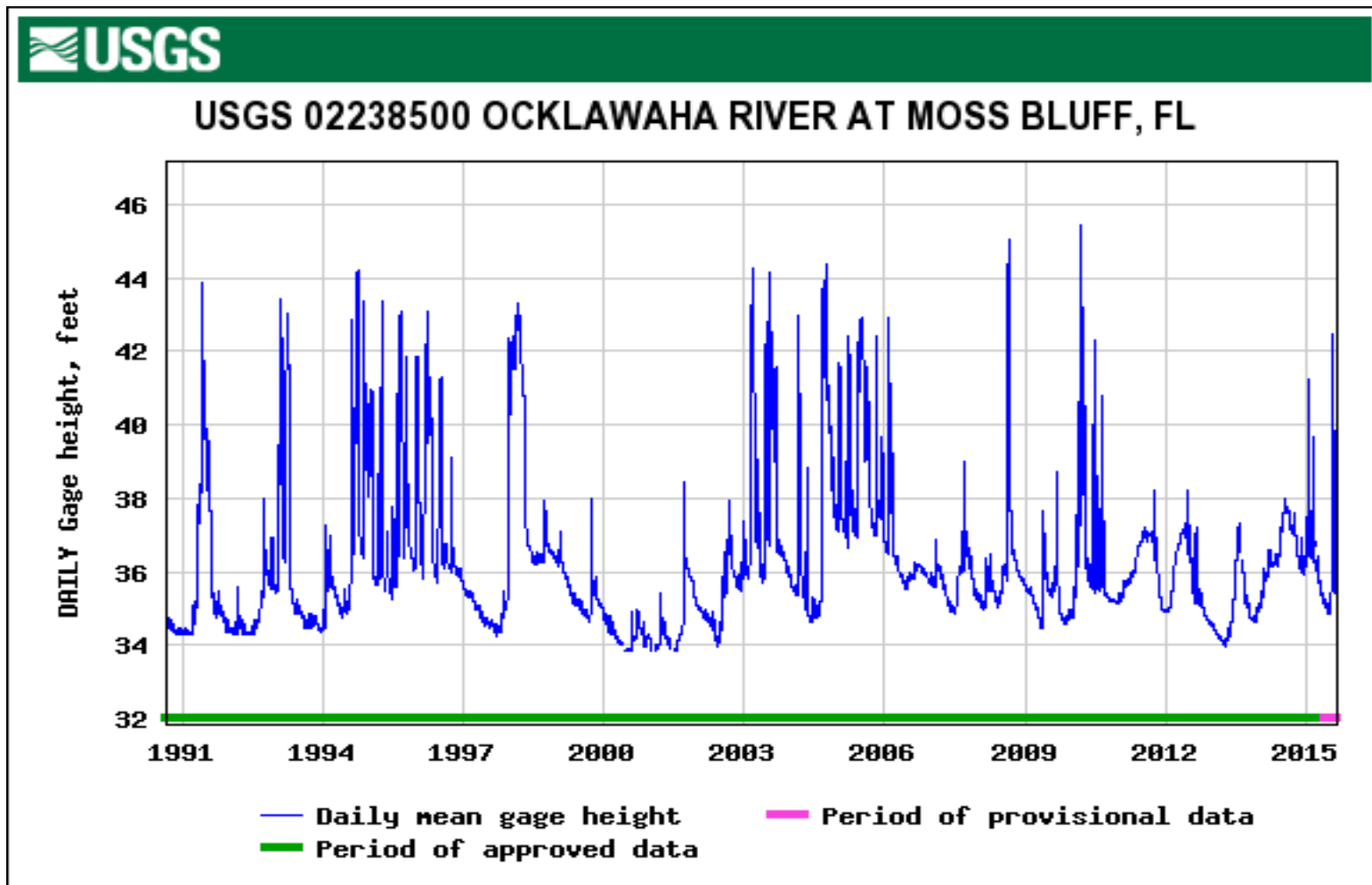
Annual Rainfall Pattern



- 1990-1995 only station, 30093061, had data.



Moss Bluff

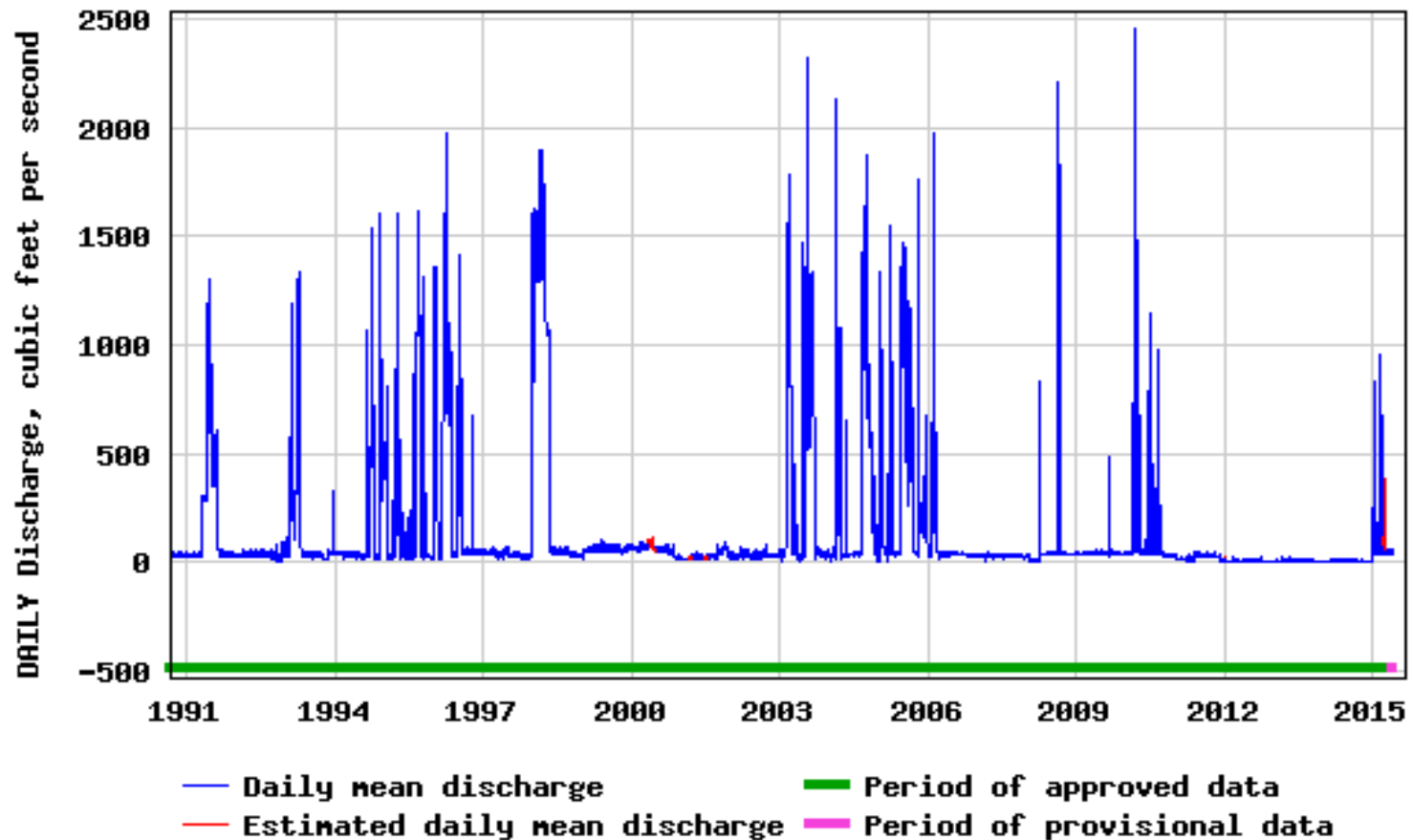




Moss Bluff

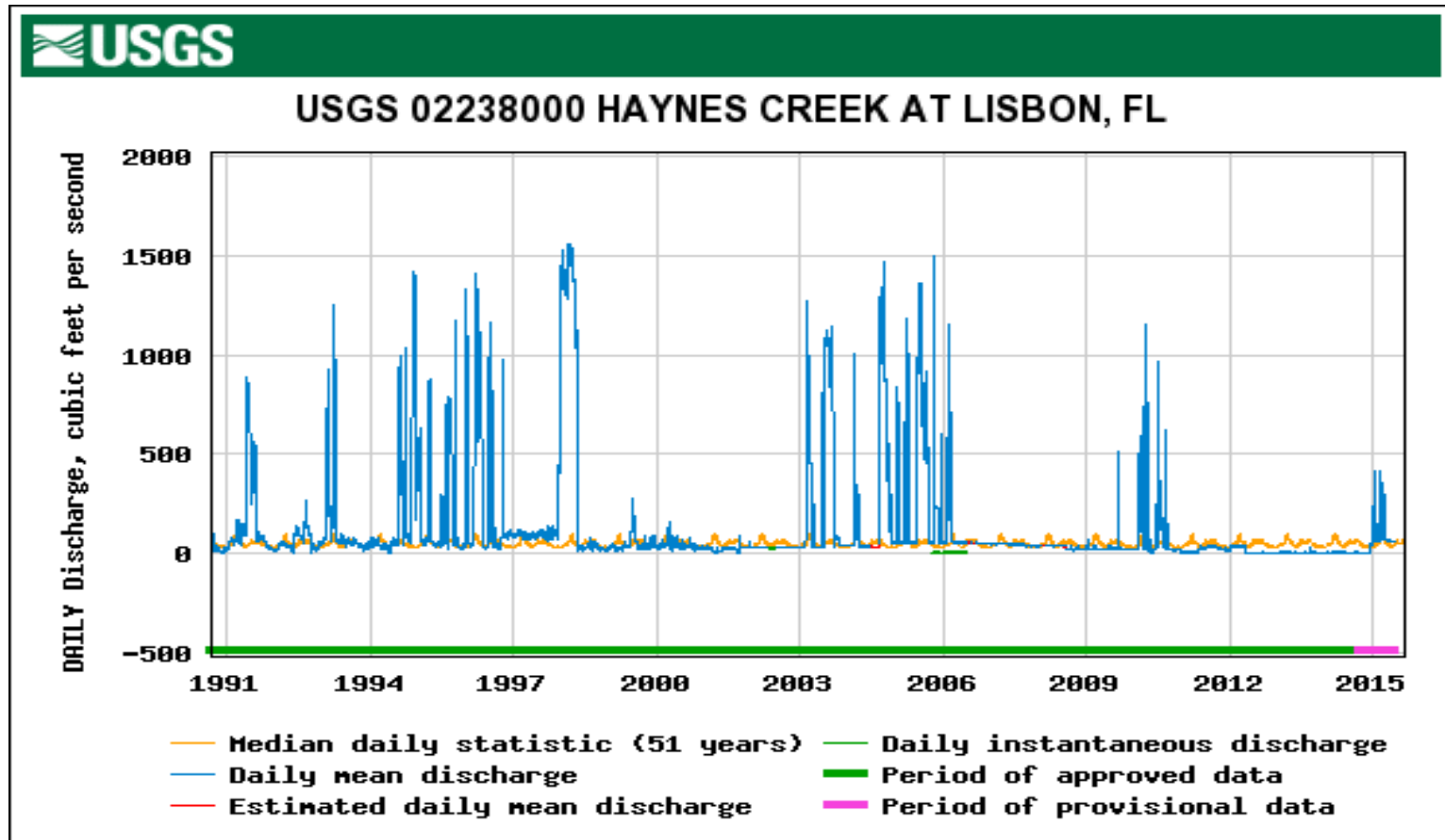


USGS 02238500 OCKLAWAHA RIVER AT MOSS BLUFF, FL



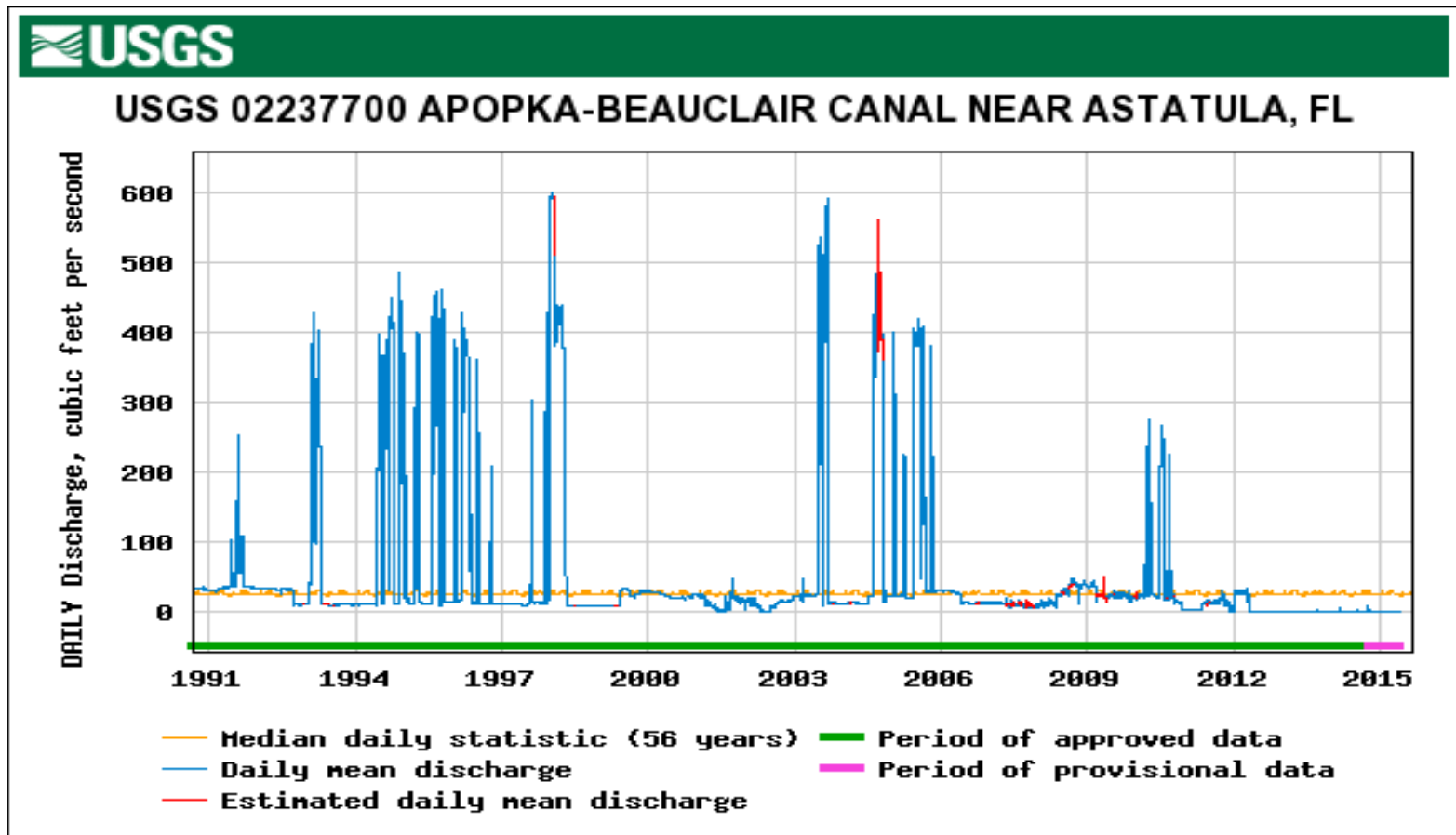


Burrell Lock and Dam



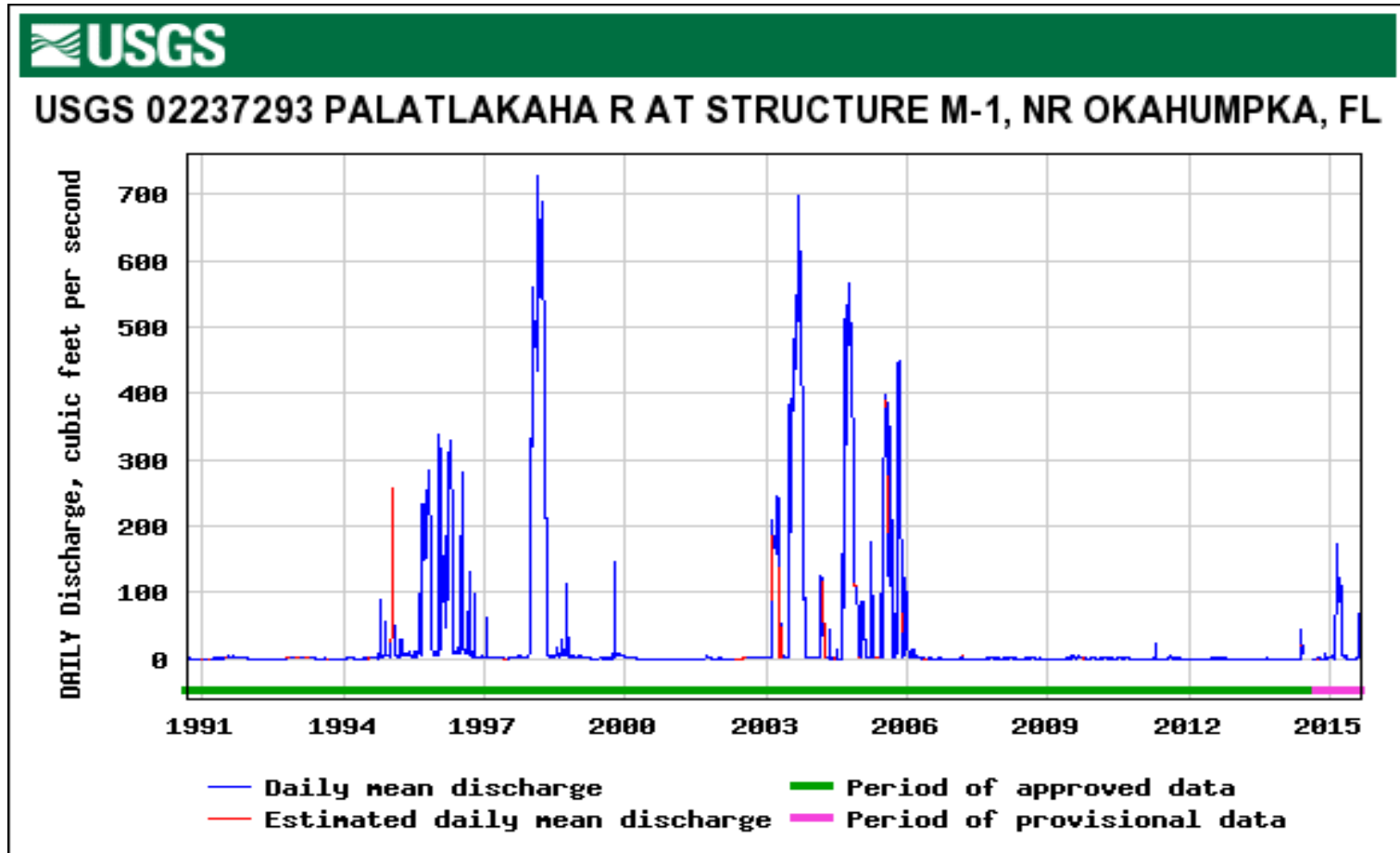


Apopka-Beauclair Lock and Dam





Palatlakaha River at M-1



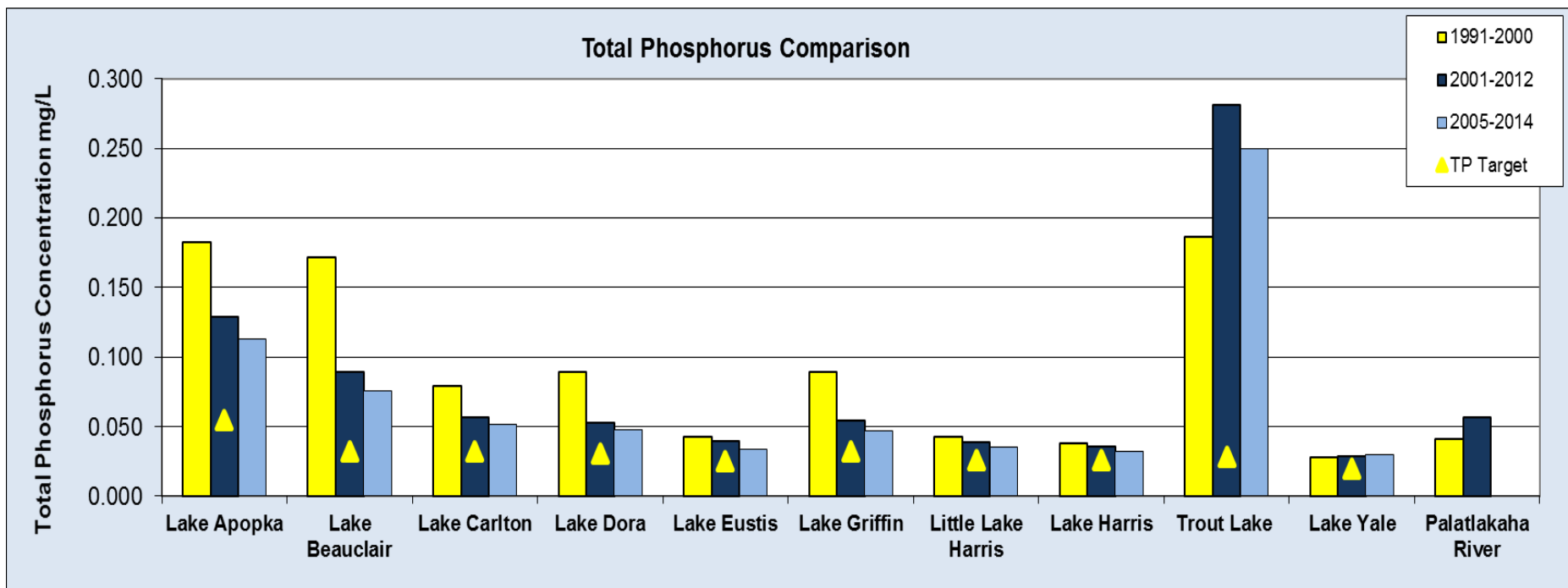


Water Quality Evaluation

- Assess progress to meeting TMDLs.
- Standardize reporting and evaluation process.
- Compare long-term annual average over a 10-year period (rolling average) and for 2014.
 - Arithmetic mean.
 - Compare to baseline period 1991-2000.
 - Compare to fifth year report evaluation period (2001-2012).



Draft Annual Average Total Phosphorus





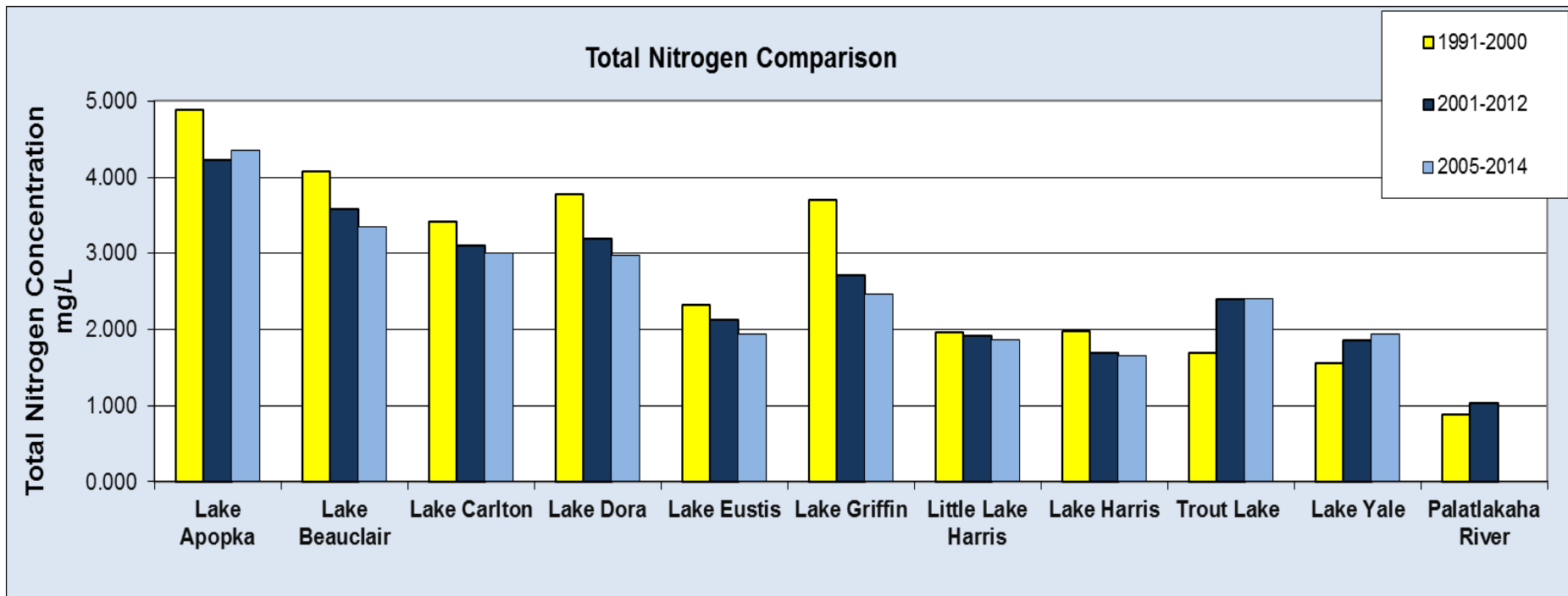
Draft Total Phosphorus Concentrations

- Annual means for different evaluation periods.

Data Period	Lake Apopka	Lake Beauclair	Lake Carlton	Lake Dora	Lake Eustis	Lake Griffin	Little Lake Harris	Lake Harris	Trout Lake	Lake Yale
1991-2000 Baseline	0.183	0.171	0.079	0.090	0.043	0.089	0.043	0.038	0.186	0.028
TP Target	0.055	0.032	0.032	0.031	0.025	0.032	0.026	0.026	0.028	0.020
2014 Mean	0.16	0.064	0.052	0.045	0.023	0.040	0.029	0.030	0.262	0.042
2005-2014	0.113	0.076	0.052	0.048	0.034	0.047	0.035	0.032	0.250	0.030

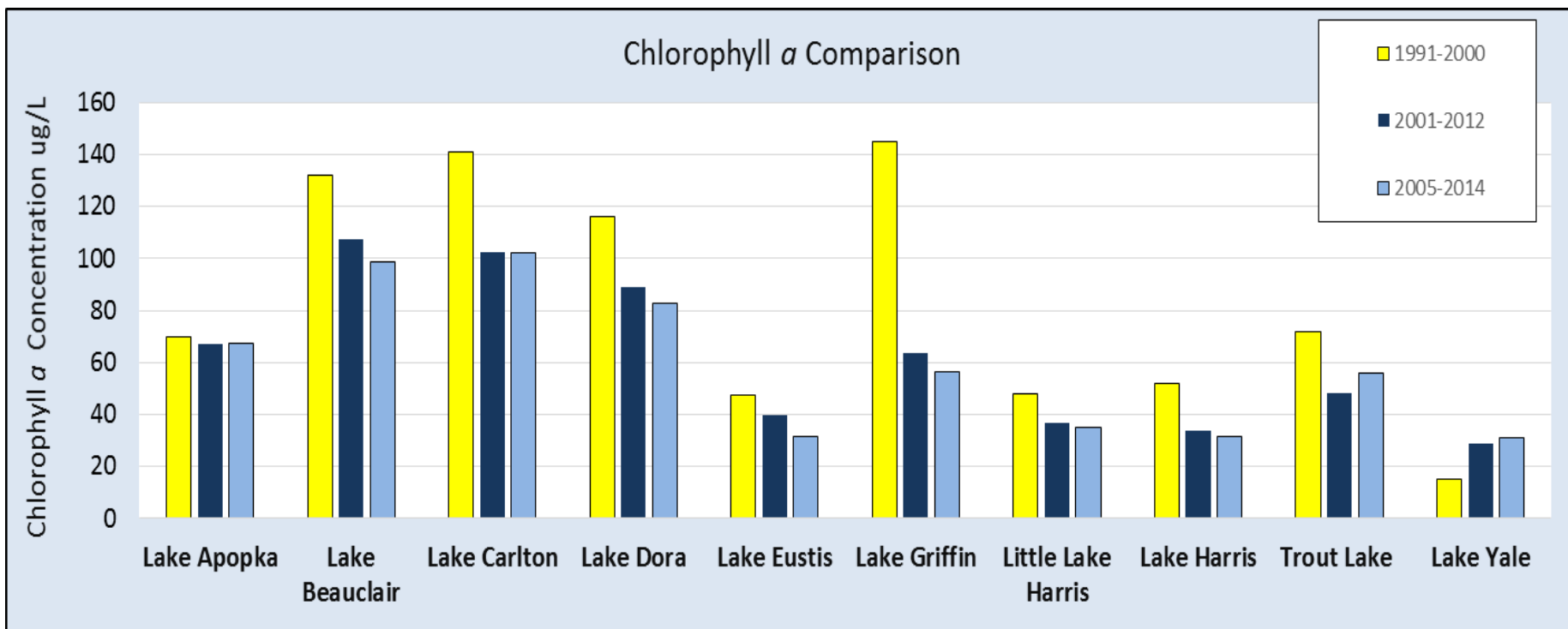


Draft Annual Average Total Nitrogen



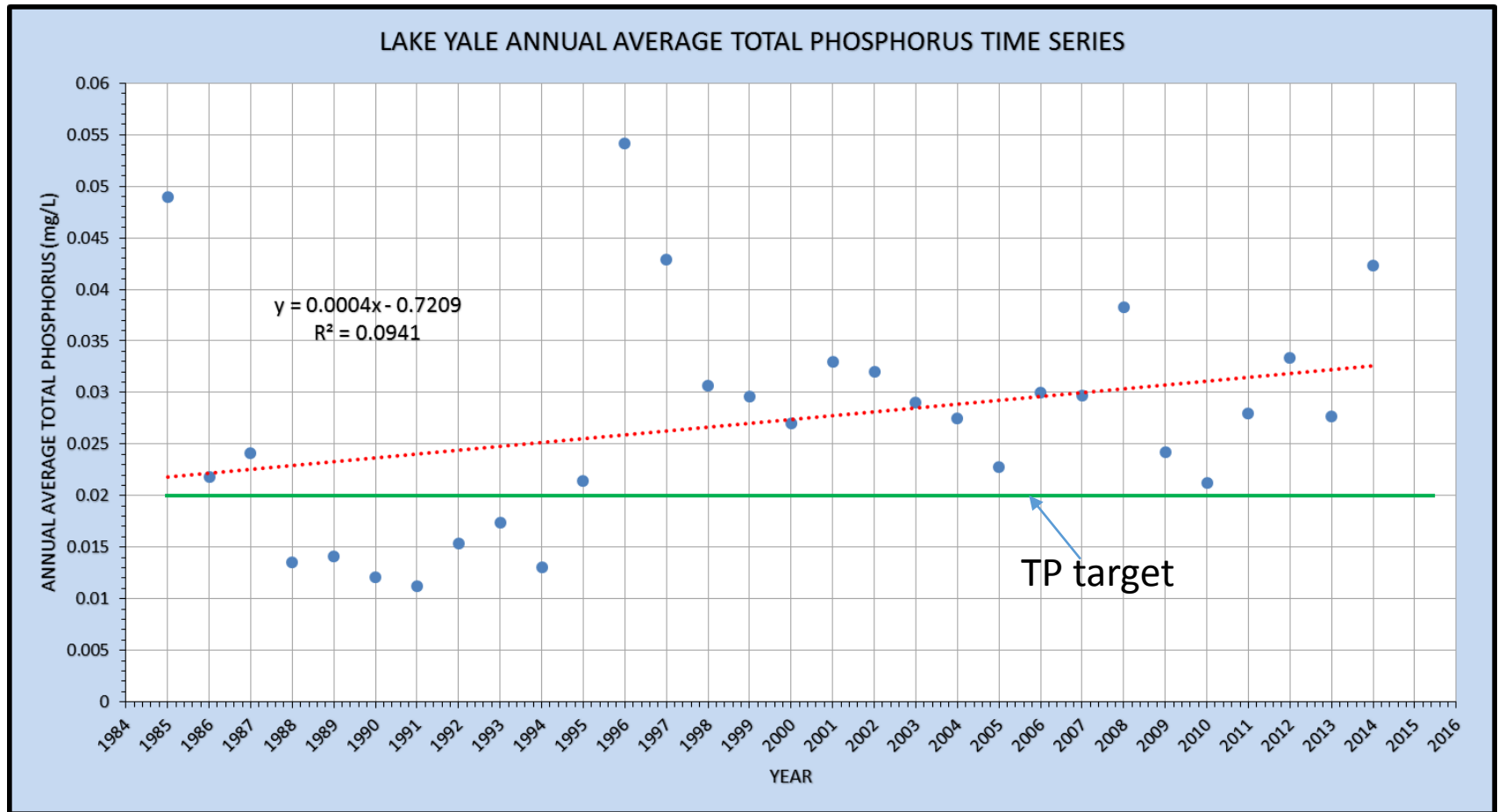


Draft Annual Average Chlorophyll *a*



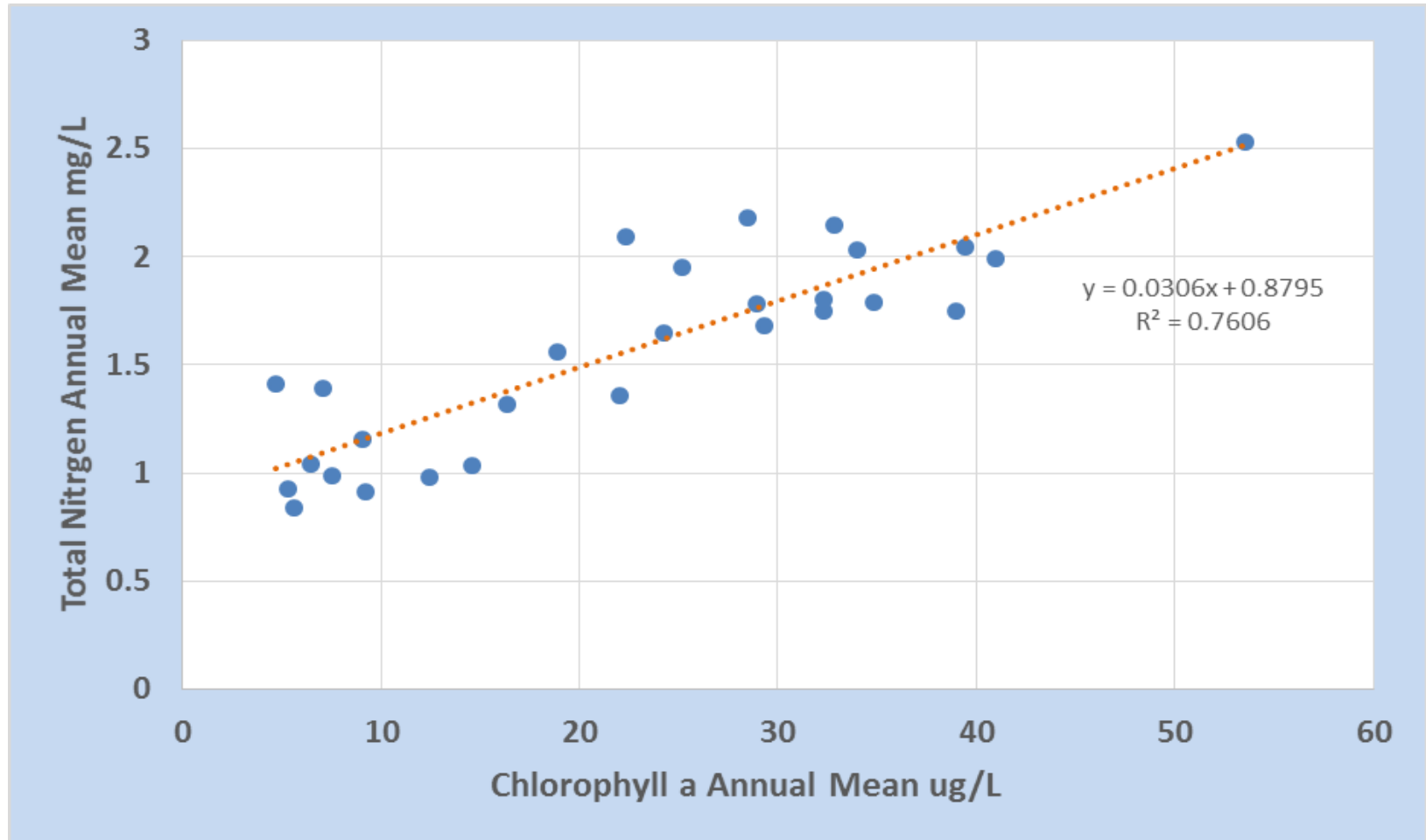


Lake Yale TP Trends





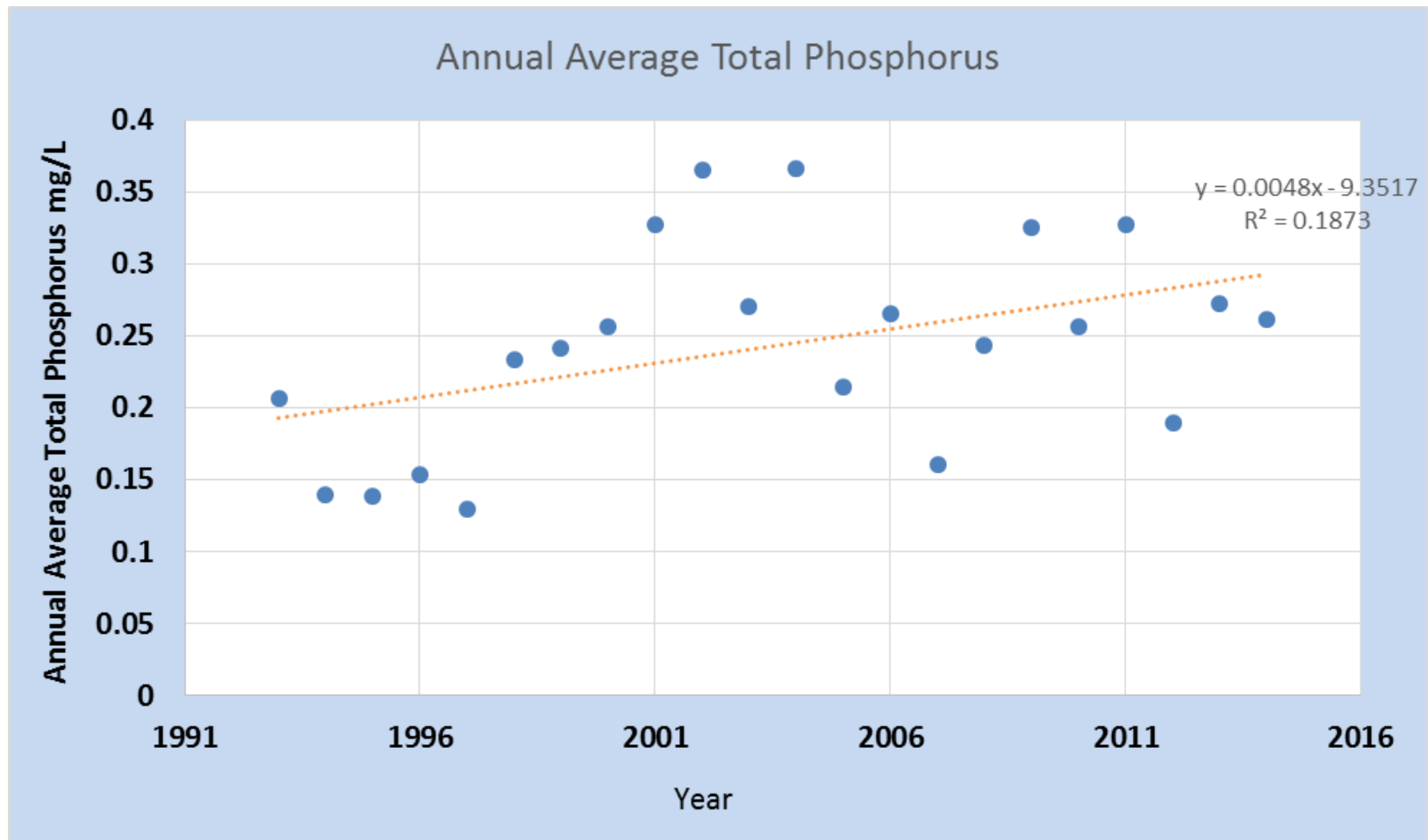
Lake Yale Total Nitrogen/Chlorophyll a Trends



- Period of record 1985-2014.

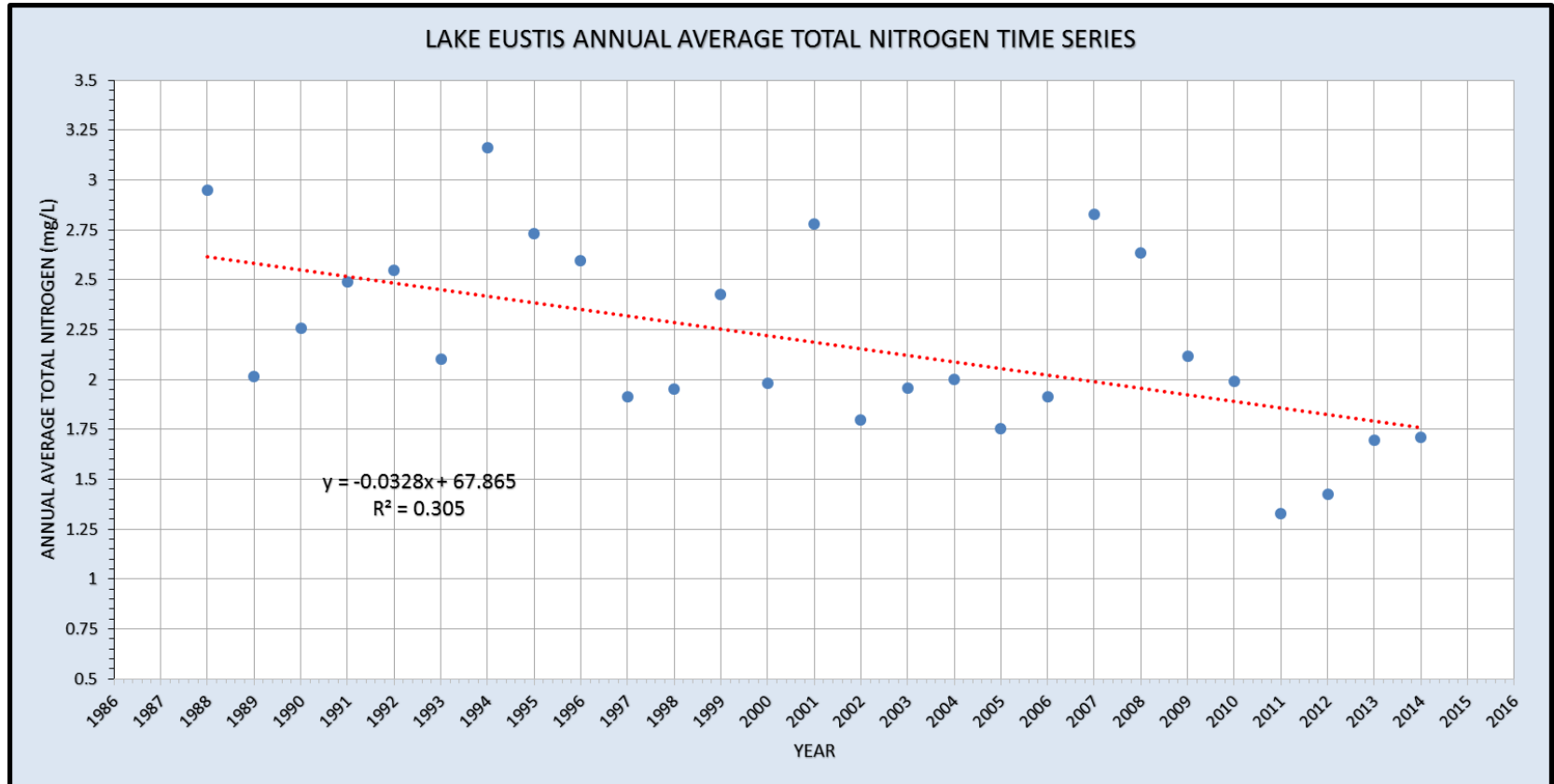


Trout Lake Total Phosphorus



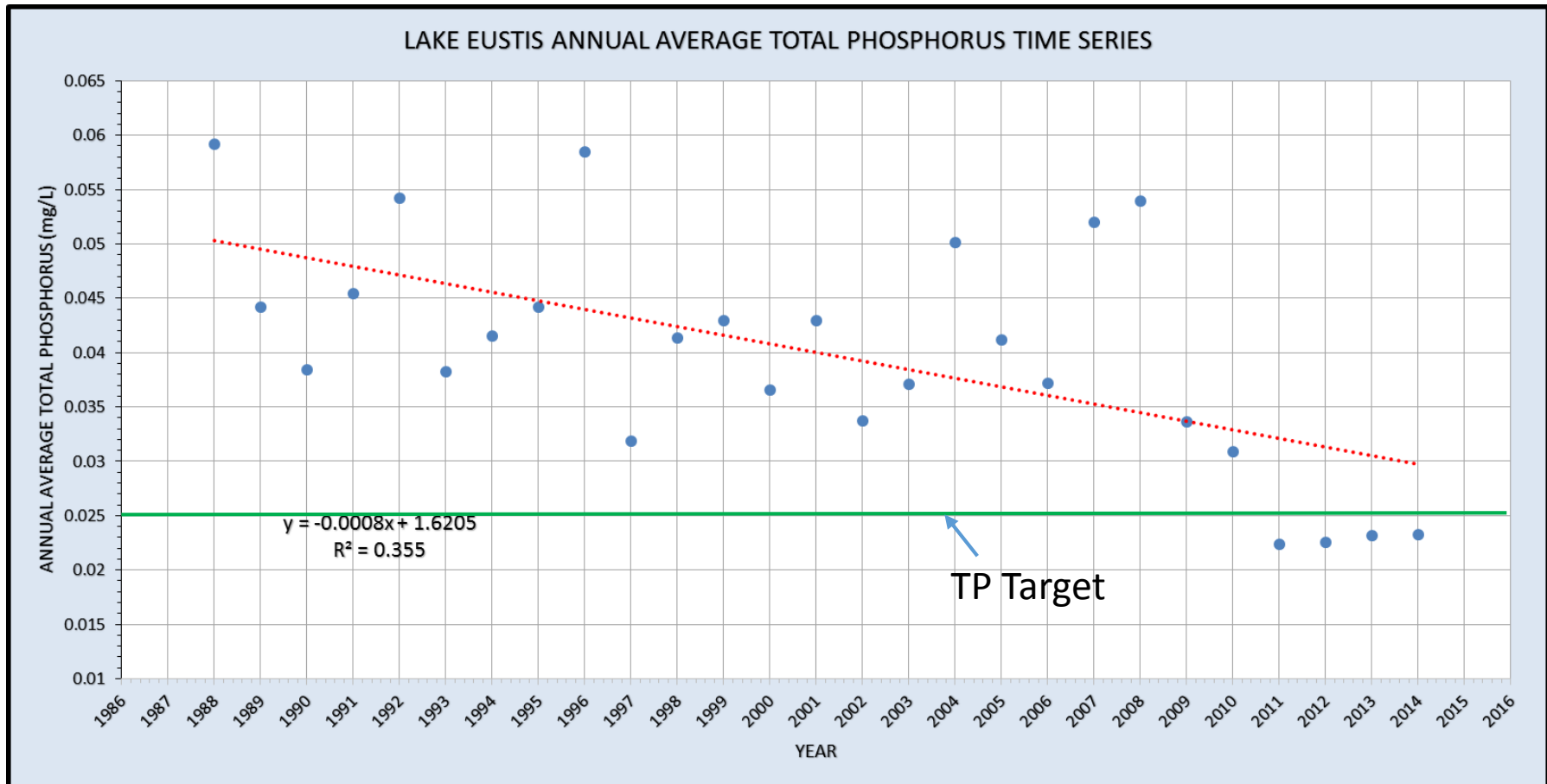


Lake Eustis Total Nitrogen Trend





Lake Eustis Total Phosphorus Trend





Projects and Accomplishments



Project Summary

BMAP Phase	Number of Projects							
	Completed	On hold	Ongoing	Started	Envisioned, conceptual	Pending, but not funded	Planned and funded	Cancelled/ Replaced /Modified
Phase 1	116	1	45	-	-	-	-	7
Phase 2	29	-	12	-	-	3	3	2
New Projects	3		5	3	2	-	1	-
Totals	149	1	61	3	2	3	4	9

- If project is not in the BMAP, loading reduction is not credited!



Project Types

Types of projects	Phase 1 BMAP	Phase 2 BMAP	New Projects
Agricultural BMPs (development not included)	1	1	-
Stormwater management program implementation	20	3	-
Education and outreach efforts	9	4	2
Regulations, ordinances, and guidelines	14	-	-
Restoration and water quality improvement project	14	-	2
Special studies and planning efforts	17	3	2
Structural BMPs-Load reductions not quantified	26	21	-
Structural BMPs-Quantifiable load reductions	66	14	7
Wastewater infrastructure management	-	-	1



Accomplishments - DACS

- Florida Forest Service.
 - 50,641.5 acres of basin covered by silviculture BMPs Notice of Intent (NOI).
- Office of Agricultural Water Policy.
 - 116 NOIs signed.
 - Increase of 3,959.6 acres covered by NOI.
 - Total of 15,962 acres or 15.3% of basin under NOI.



Accomplishments - SJRWMD

- St. Johns River Water Management District.
 - The Lake Apopka flow-way removed 8,000 pounds (lbs) total phosphorus (TP) and 205,000 lbs total nitrogen (TN).
 - Gizzard shad harvest in Lake Apopka.
 - Removed 22,298 lbs of TN.
 - Harvests in Lake Griffin, Lake Dora, and Lake Beauclair completed in 2012.



Accomplishments

- Marion County.
 - Clean Farms Program outreach to local farms.
 - Primarily horse farm focus, but cow/calf operations may be targeted for second outreach position.
 - Lake Griffin Basin Watershed Management Plan.
 - 70% complete.
 - Capital projects report expected in fiscal year 2018 / 2019.
- Lake County.
 - Washington Avenue drainage improvement project complete (Lake Yale).
 - Removes 173 tons of sediment.
 - By paved dirt roads, grassed swales, and ditch blocks.



Accomplishments-Lake County

- Pine Meadows Restoration Area transferred to Lake County (Parks and Trails Division).
 - Restoration activities with Florida Fish and Wildlife Commission assistance.
- Education outreach and training.
 - Targeted business sector best management practice (BMP) education program (2013).
 - Focus on automotive services, landscapers, and food services.
 - Erosion Control Training Program.



Accomplishments

- Orange County.
 - Lake Roberts Nutrient and Hydrologic Loading Study complete.
 - Recommend sediment TP inactivation project (needs funding).
- LCWA.
 - Lake Yale and Trout Lake remediation studies started.
 - Identify additional sources of nutrient.
 - Suggest feasible treatment options.



Accomplishments - SJRWMD

- Lake Griffin Nutrient Restoration Project received North American Lake Management Society Technical Merit Award.
- Online education programs (Orange, Lake, south Marion) reached:
 - 41 schools;
 - 76 teachers; and
 - 3,185 students.



Accomplishments

- Eustis.
 - Replacing damaged sewer lines upstream from Lake Eustis.
 - Trout Lake Hybrid Wetland Treatment System in permitting.
 - Funded by DACS.
 - Land provided by Eustis.
- Leesburg.
 - Lake Griffin Stormwater Improvement Project.
 - Removes 35.5 lbs/year (yr) of TP.
 - Stormwater Improvement Project (Lake Harris).
 - Removes 19.9 lbs/yr of TP.
- Clermont.
 - 12th Street and Lakeshore Drive Stormwater Improvement project complete (Palatka River).
 - Removes 7.2 lbs/yr of TP and 45.63 lbs/yr of TN.
 - Starting Lake Winona treatment train project.
 - Source control (street sweeping), a nutrient separating baffle box, followed by retention.



Accomplishments

- Umatilla.
 - Exfiltration system along Southwest Orange Avenue (Lake Eustis).
 - Construction soon! Removes approximately 19 lbs/yr of TP.
 - Partial funding for the project provided by DEP.
- Mt. Dora.
 - 7th Avenue Underground Stormwater Treatment System completed in February 2015 (Lake Dora).
 - Funded with department's section 319 grant program and the LCWA.
 - Removes 20 lbs/yr of TP and 125 lbs/yr of TN.



Missing Information

Still need project information from

- Tavares
- Minneola
- Mt. Dora (partial)
- Winter Garden



Draft Loading Summary

- Net reduction in TP loading within basin.
 - Still evaluating project information!
 - Net 92.5 lbs/year of TP, so far.
 - Correction made for Ocoee projects.
 - Incorrectly assigned 100% of loading reduction to Upper Ocklawaha Basin.
 - Cancelled 541.3 lbs/yr TP reduction credit – wrong basin.



Recommendations

- Better accounting of material collected by street sweeping or baffle boxes.
 - Use Florida Stormwater Association Tool.
 - Require dry/wet weights or volumes of material collected.
 - If needed, develop method to estimate without measurements.
- Projects that reduce sediment load.
 - Method to calculate TP load reduction.



Final Calculation Steps

- First correct stormwater loading estimates used in TMDLs.
- Second adjust baseline TP loadings.
- Third adjust each waterbodies nutrient budget with project reductions.



Schedule

Date	Entity	Activity
June 16	DEP	Complete project collection materials and send out to stakeholders (current project updates and new project submittal form) describing a due date of July 14 th .
June 16	DEP	Complete monitoring update materials and send out to monitoring entities describing a due date of July 14 th .
July 14	Management Entities	Project updates and new project information due to Mary Paulic, DEP.
July 17	Monitoring Entities	Monitoring updates due to Mary Paulic, DEP.
July 9 -31	DEP	Prepare Annual Report; follow up with stakeholders if there are questions about their submittals.
August 1-14	DEP	Internal review of report.
August 17- September 2	DEP	Edits to the report based on internal comments.
September 3	DEP	Send report to stakeholders (one week before the annual meeting).
September 10	All	Annual meeting and report review.
September 30	All	All comments due on report.
October 15	DEP	Final version of the report is posted.



Next Steps

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

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???