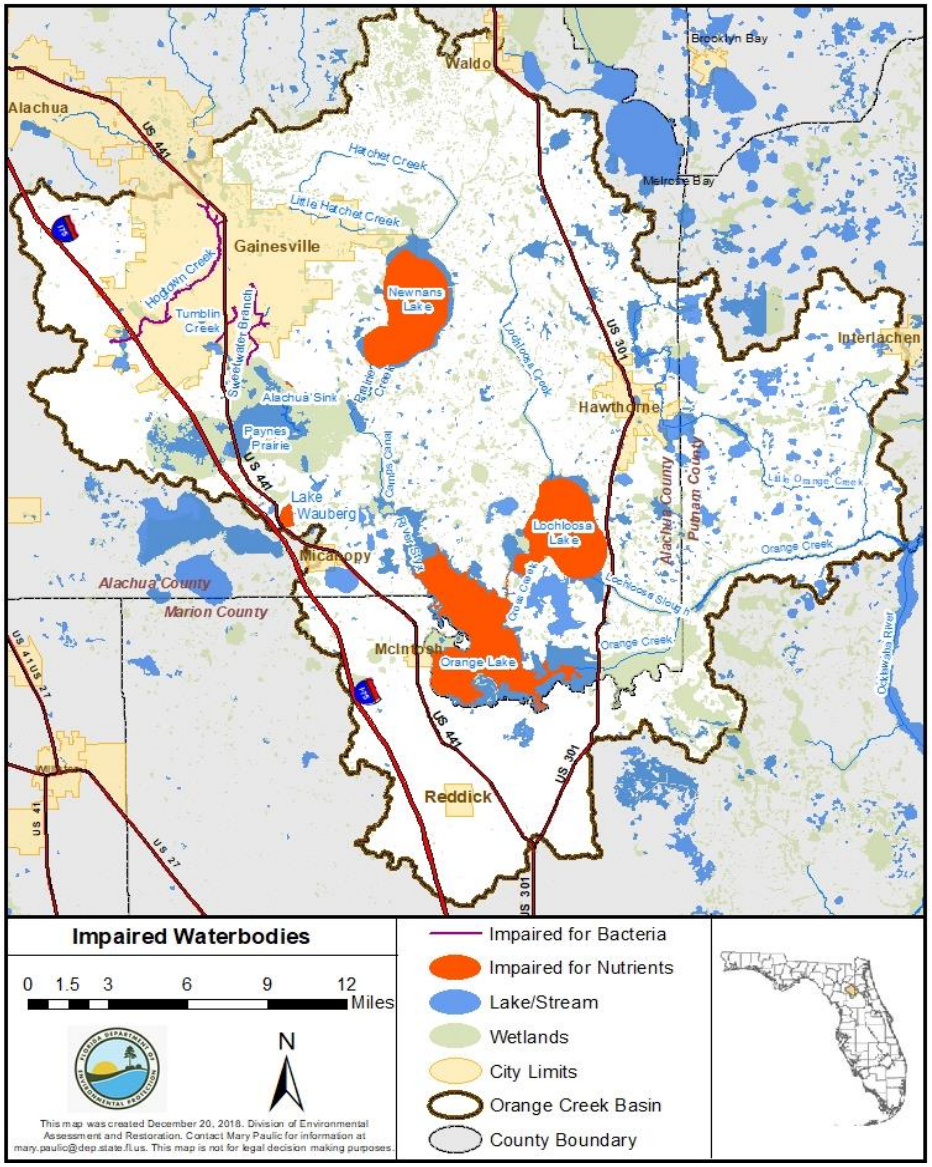
Agenda

- Welcome, Introduction, and Purpose (Tina Gordon)
- Update on Sweetwater Branch Numeric Nutrient Criteria (*Rick Hutton*)
- Main Street Water Reclamation Facility Planned Upgrades (*Rick Hutton*)
- Little Hatchet Creek Weir Update (*Shane Williams*)
- Alachua County Fertilizer Campaign and Potential Load Reductions (*Stacie Greco*)
- City of Gainesville Project Updates (*Alice Rankeillor*)
- Updates and Next Steps for the Orange Creek BMAP (*Mary Paulic*)
- Agency Updates (*All*)
- Next Steps (*Tina Gordon*)

Orange Creek Basin



Orange Creek BMAP Meeting Updates and BMAP Next Steps

Mary Paulic
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August 26, 2021

Agriculture

Best Management Practice (BMP) Enrollment Credits

- Calculated credits for BMP enrollment
- Change in methodology
  - No longer use straight 30% efficiency for all BMPs to estimate reductions in nutrient loading
  - Based on Florida Statewide Agricultural Irrigation Demand (FSAID) crop information and Del Bottcher's work relating efficiency of BMP to land use
  - Not necessarily what is listed as commodity in NOI

BMP Efficiency

Bottcher Commodity	TP Efficiency %	TN Efficiency %
Citrus	12	10
Hay	15	15
Row Crops	30	30
Cow Calf, Improved	11	17
Cow Calf, Unimproved	7	11
Cow Calf, Woodland	4	4
Ornamentals	32	25
Dairies	9	20
Equine	20	30
Sod	20	20

*Efficiencies from Del Bottcher

Agriculture BMP Reductions

Calculation of Credits

- Reduction calculated as percent (enrolled acres/total enrollable acres) of initial modeled agriculture loading:

  For Cow calf woodland

  Ex. (144.6 ac/4,502 ac) * 1,758 lbs P = 56.5 lbs TP
- Credit calculated by applying BMP efficiency to loading:

  Ex. 56.5 lbs P *4 % efficiency = 2.3 lbs TP

Agriculture BMP Credits

Orange, Newnans, Wauberg, Paynes Prairie

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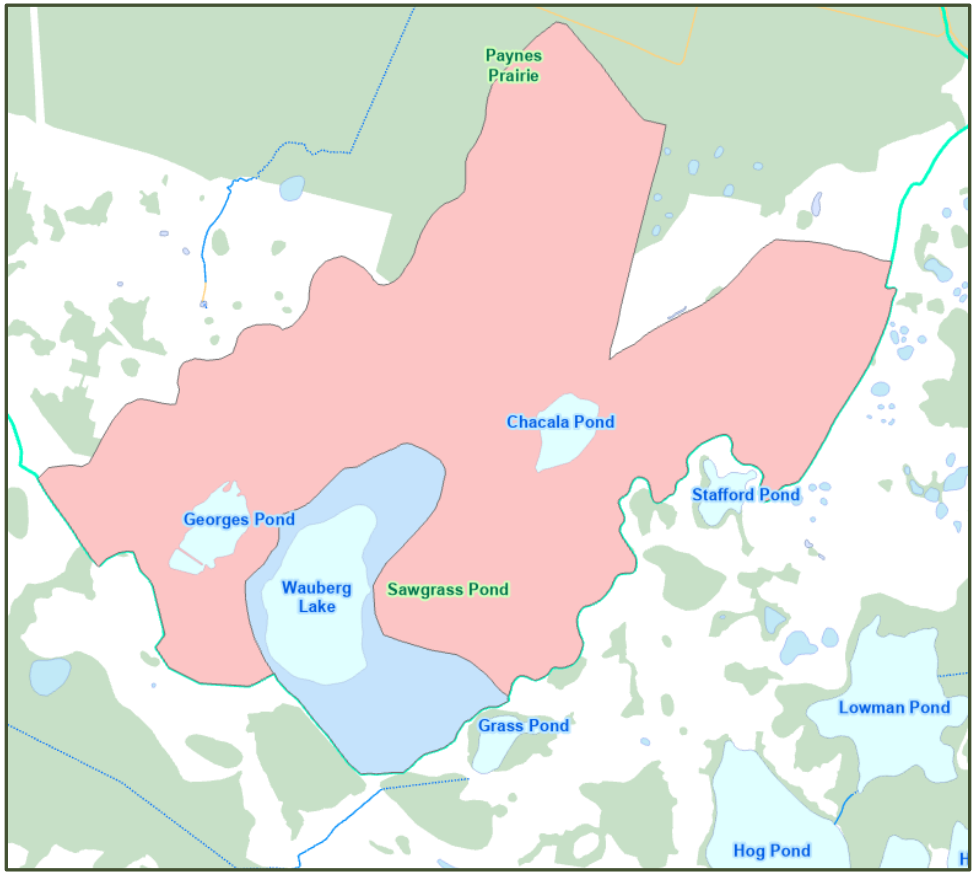
Lake	Total Phosphorus lbs /yr	Total Nitrogen lbs/yr
Orange	255	--
Newnans	16	207
Paynes Prairie	43	381
Lake Wauberg (extended)	0.3	2.7

Lake Wauberg

Extended Watershed



Agriculture BMP Credits

Lochloosa Lake

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Model Segment	Total Phosphorus lbs /yr	Total Nitrogen lbs/yr
17	3.0	38.5
18	5.3	82.1
19	5.5	70.2
20	4.0	54.8
21	0.0	0.1
23	10.9	93.7
24	1.2	8.8
26	0.0	0.3
27	11.2	138.6
Lake Total	41.0	488.0

Agriculture Project Credits

Orange Lake and Lochloosa Lake

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Lake	TN Credit lbs TN/yr	TP Credit lbs TP/yr
Orange Lake	7,522	775
Lochloosa Lake	954	286
2020 Total (BMP Enrollment and Projects)	**TN Credit lbs TN/yr**	**TP Credit lbs TP/yr**
Orange Lake	7,522 *	1,030
Lochloosa Lake	1,442	327

*Orange Lake TP target only

GIS Updates

Boundary

- Updated Hogtown and Paynes Prairie boundary. Matched to Newnans Lake boundary
  - Near Bivens Arm based on update from SJRWMD
  - This is the delineation used for estimating agriculture credits and project credits
  - Two files (OCB_modeled_lakes [Newnans, Orange, Lochloosa] and OC_PP_Hog_basins_dissolved [Hogtown, Paynes Prairie, Orange Creek including Lochloosa Slough] available at: http://publicfiles.dep.state.fl.us/DEAR/BMAP/OrangeCreek/GIS%20Data/OrangeCreekGIS/Revised_basin/

GIS Updates

Newnans, Orange, Lochloosa Allocation

- Added agriculture categories (Agriculture general, Pasture, Tree crops) to Model_LU field for Lochloosa Lake
- All 3 lakes in one file with most updated roadway delineation (OCB_allocate_correct_final_roads)
- Available at: http://publicfiles.dep.state.fl.us/DEAR/BMAP/Orange Creek/GIS%20Data/OrangeCreekGIS/

BMAP Next Steps

- Amended BMAP in 2019. Establishes a 10 year time frame to address current TMDL waterbodies
  - BMAP first adopted in 2008, BMAP tentative deadline 2028
- Newnans Lake and Lochloosa Lake have large internal loadings
  - Projects reduce watershed loading
  - Will they also help reduce in-lake loading?
  - Implications for future crediting
  - Future efforts may have to consider addressing internal loading
  - Alachua Sink TMDL loading includes contribution from Prairie Creek/Newnans Lake
    - Credited at 45% of expected reduction

BMAP Next Steps

Lake Wauberg

- Septic systems remaining source to be evaluated
  - UF recreation area has multiple septic systems
    - Proximity to lake and slope of land add to potential for contribution of nutrient loading
    - Propose shallow groundwater sampling at UF recreation site downstream of drainfields
  - Paynes Prairie Campground system replaced about 2018
    - DEP performed shallow groundwater sampling prior to replacement (2017)
    - Wish list – repeat the study to evaluate shallow groundwater nitrate concentration and distance traveled and compare to 2017 study

Water Quality

Provisional data for Newnans, Lochloosa, and Orange Lakes

- Used only SJRWMD data for these 3 lakes
- N=6 sampling events, 4 events for chlorophyll *a*
- Annual geometric means for Lochloosa Lake

2020 data only	**Newnans Lake**	**Orange Lake**	**Lochloosa Lake**
Total Nitrogen Range mg/L as N	2.0311 - 3.8887	0.9818 - 1.71	1.5872 - 1.9516
Total Phosphorus Range mg/L as P	0.0925 - 0.2509	0.0265 - 0.0684	0.0589 - 0.0653
Corrected Chlorophyll *a* Range µg/L	28.04 - 124.4	10.1 - 36.8	10.9 - 54.3
Total Nitrogen Average mg/L as N	2.7489	1.2894	1.7268
Total Phosphorus Average mg/l as P	0.1608	0.0518	0.0630
Corrected Chlorophyll *a* Average µg/L	69.1	24.95	38.5

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Questions


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