

A Little Retro: Valuing an Undersized Urban Stormwater Wetland Retrofit

12th International Symposium on
Biogeochemistry of Wetlands

FOR THE

#GATORGOOD

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Urban Drainage

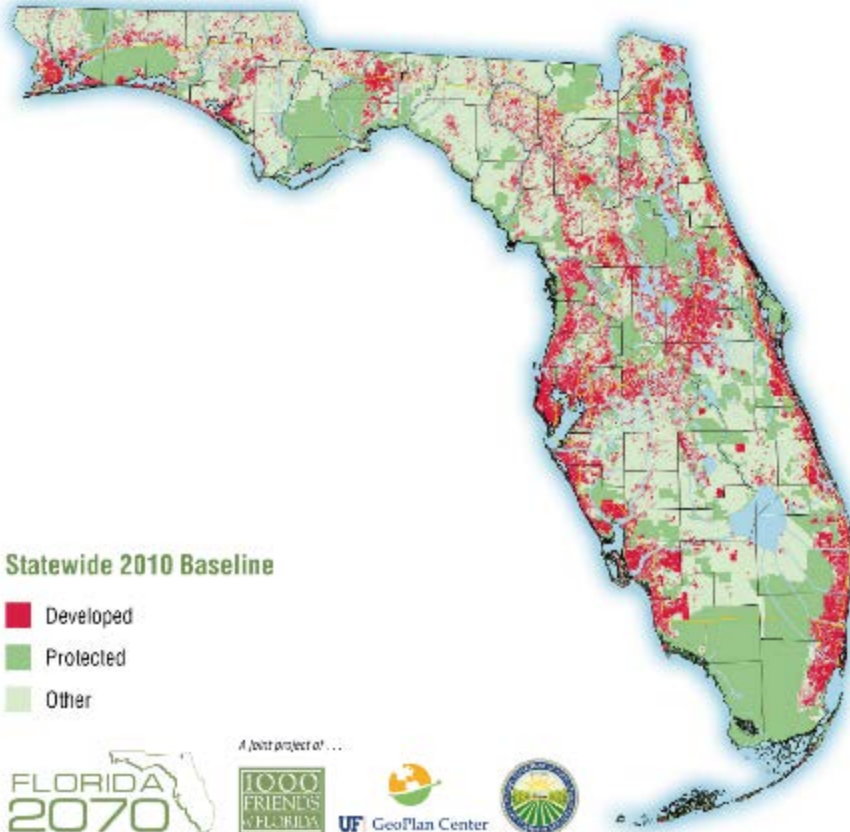




WATER QUALITY ADVISORY
DUE TO STORM WATER RUN-OFF
FROM RECENT RAINS, BACTERIA
LEVELS IN THE WATER HERE
EXCEED STATE WATER QUALITY
STANDARDS.
FULL BODY CONTACT IS NOT
RECOMMENDED.



Impaired Urban Waters



18 Million

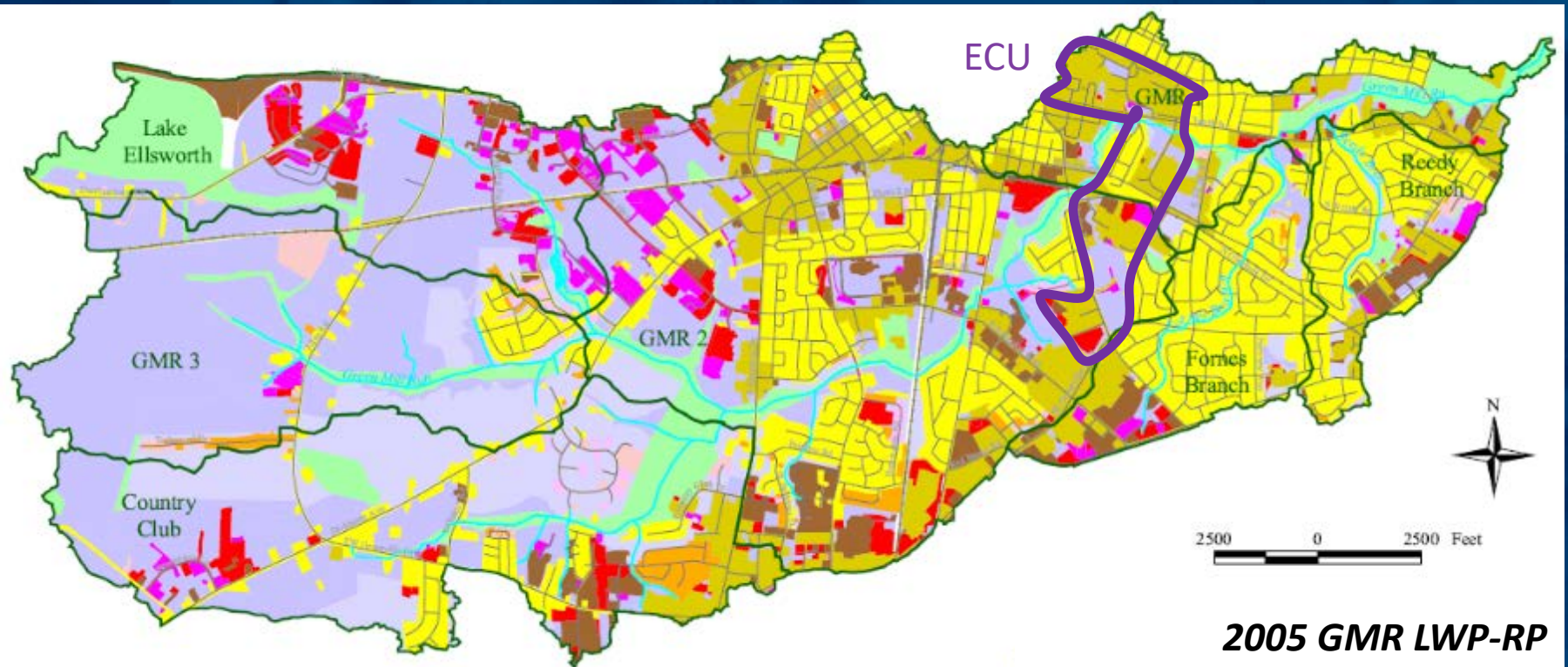


Greens Mill Run Watershed

Impaired for Benthic Condition

Excess Stormwater Runoff

Greenville



Retrofit Challenges





Electrical

Telecom

Retrofit Site Selection

- 9 Initial Sites ●
- Incompatible Future Land Use ●
- Utilities Conflict ●
- Incompatible Soils ●
- Wetland Site ●



Stormwater Wetland



Impervious Catchment

5.80 ac/252,500 ft²

Permitted Stormwater Wetland
Runoff from first 1" --> 16,000 ft²

Dry
Detention
3,500 ft²



Stormwater Wetland Zones

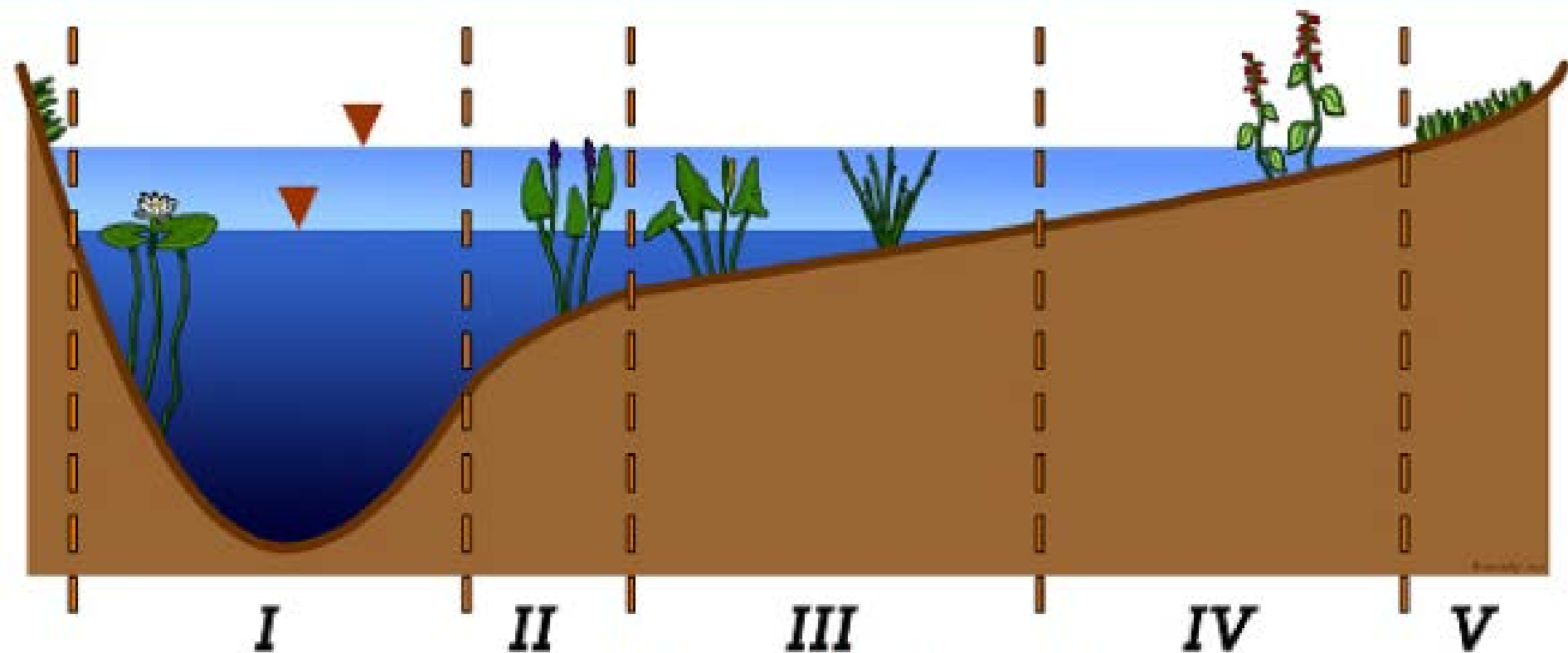


Figure 3. Interior wetland zones: (I) Deep Pool, (II) Transition, (III) Shallow Water, (IV) Temporary Inundation, and (V) Upper Bank

Hunt, W. F., M. R. Burchell, J. D. Wright, and K. L. Bass. [Stormwater Wetland Design Update](#) (AG 588-12).

Stormwater Wetland Design



*This soil ait good for nothing but holdin
the world together - Contractor*



*You know he's (Contractor)
blind in one eye, right? –
Campus Facilities Manager
(last day)*

TENURED

NON-TENURED









Monitoring

June 2015 – August 2016

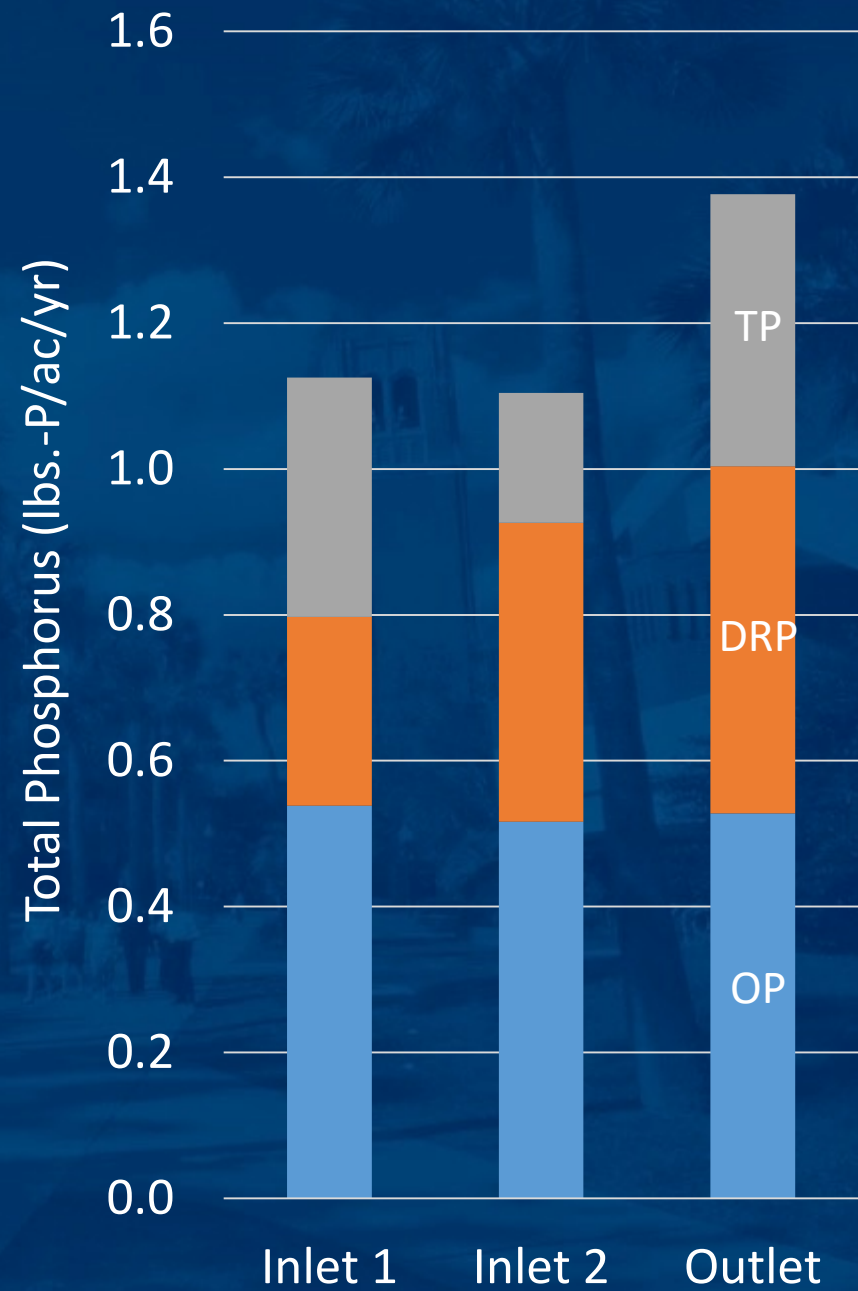
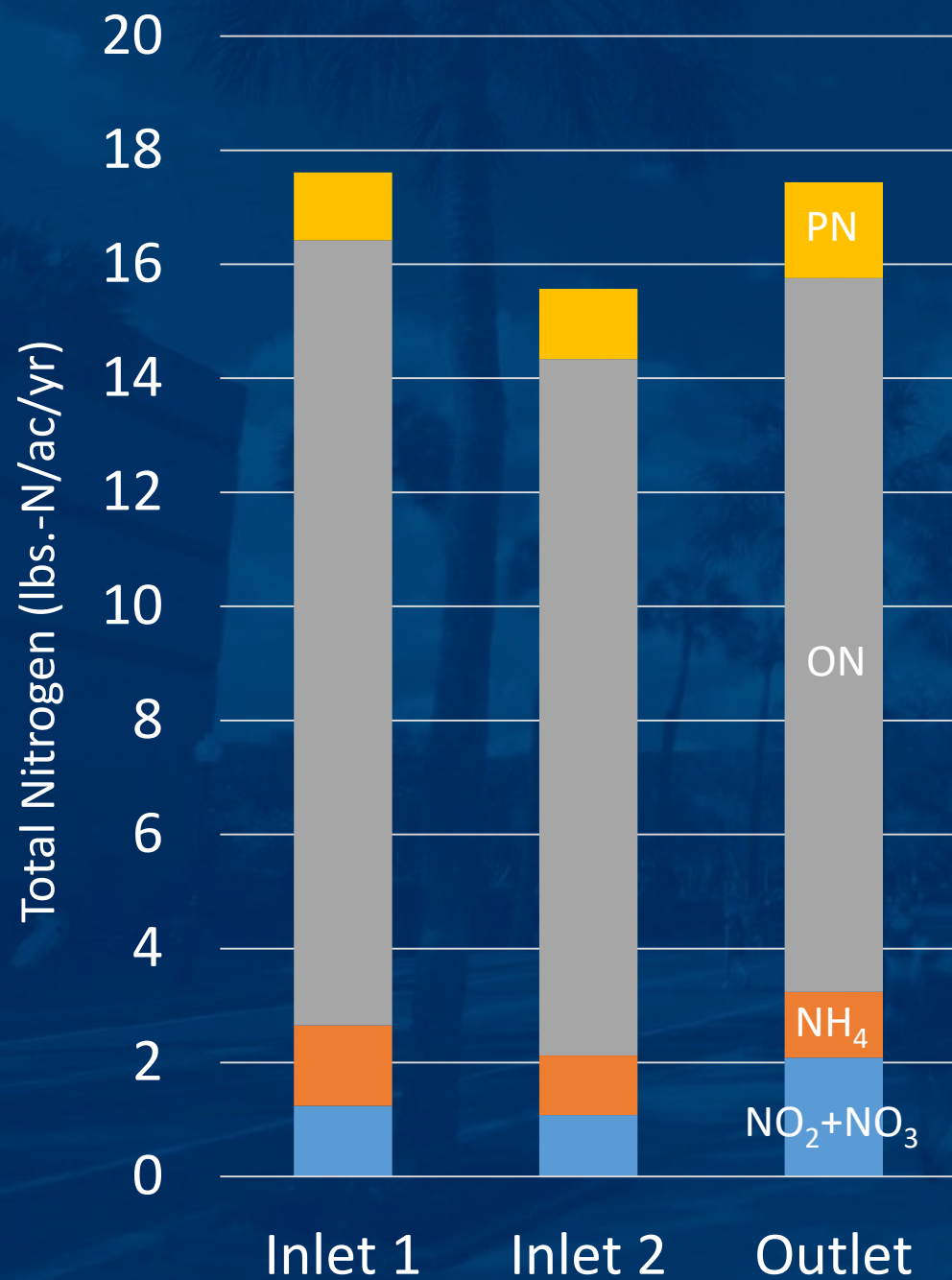
Rainfall: On-campus Weather Station

Flow Rates: Weirs on Wetland Inlets and Outlet

Water Quality: Inlets, outlets

N species, P species, and Total Suspended Solids





Valuing Stormwater Wetland Retrofits

- Limited volume for detention
- Short (negligible?) residence time
- Enhance water quality processes
 - Seasonal variation?
 - Real time controls?
- Habitat and other benefits



Thank You!

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