



Hybrid Wetland Treatment Technology Facilities Contract Amendment

Governing Board Meeting March 10, 2011

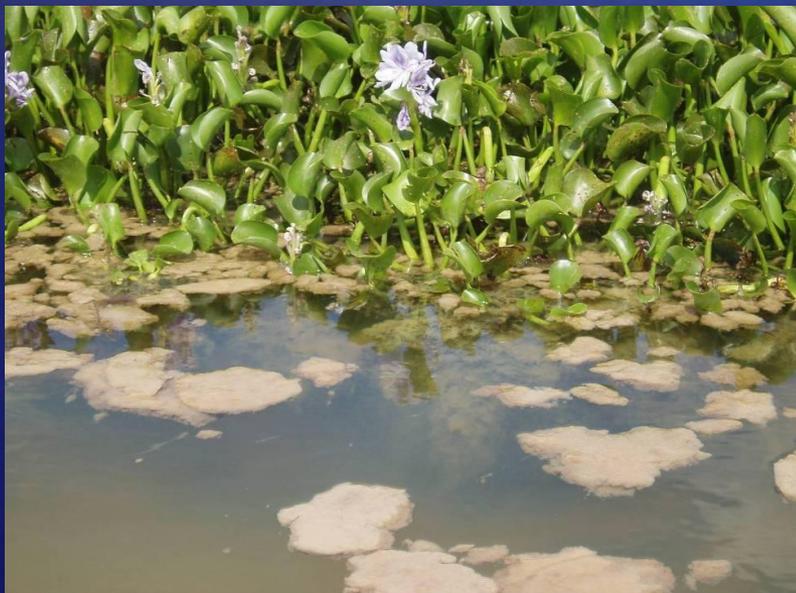
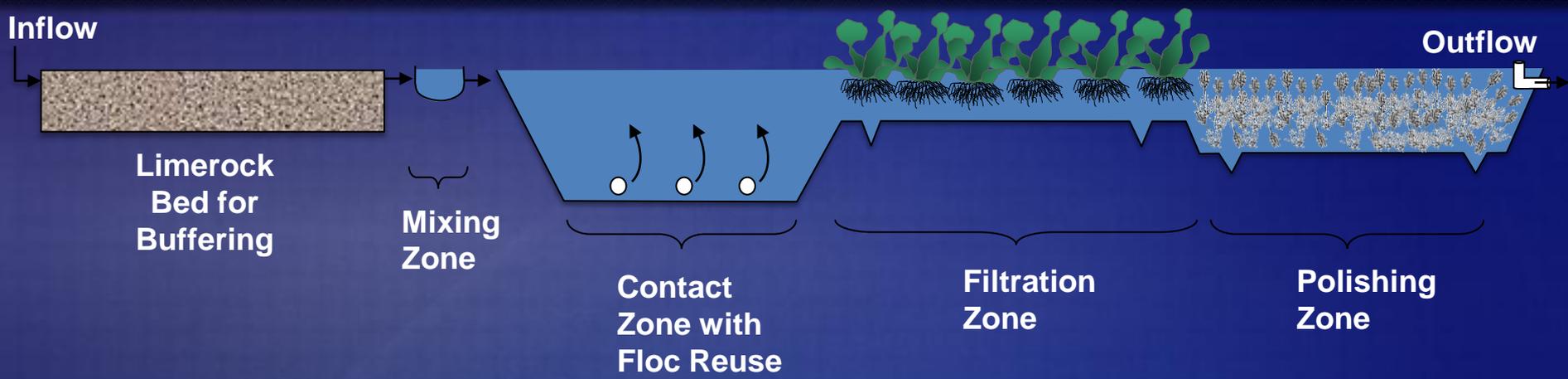
*Temperince Morgan, Director
Policy and Coordination Department
Everglades Restoration and Capital Projects*

Hybrid Wetland Treatment Technology (HWTT)

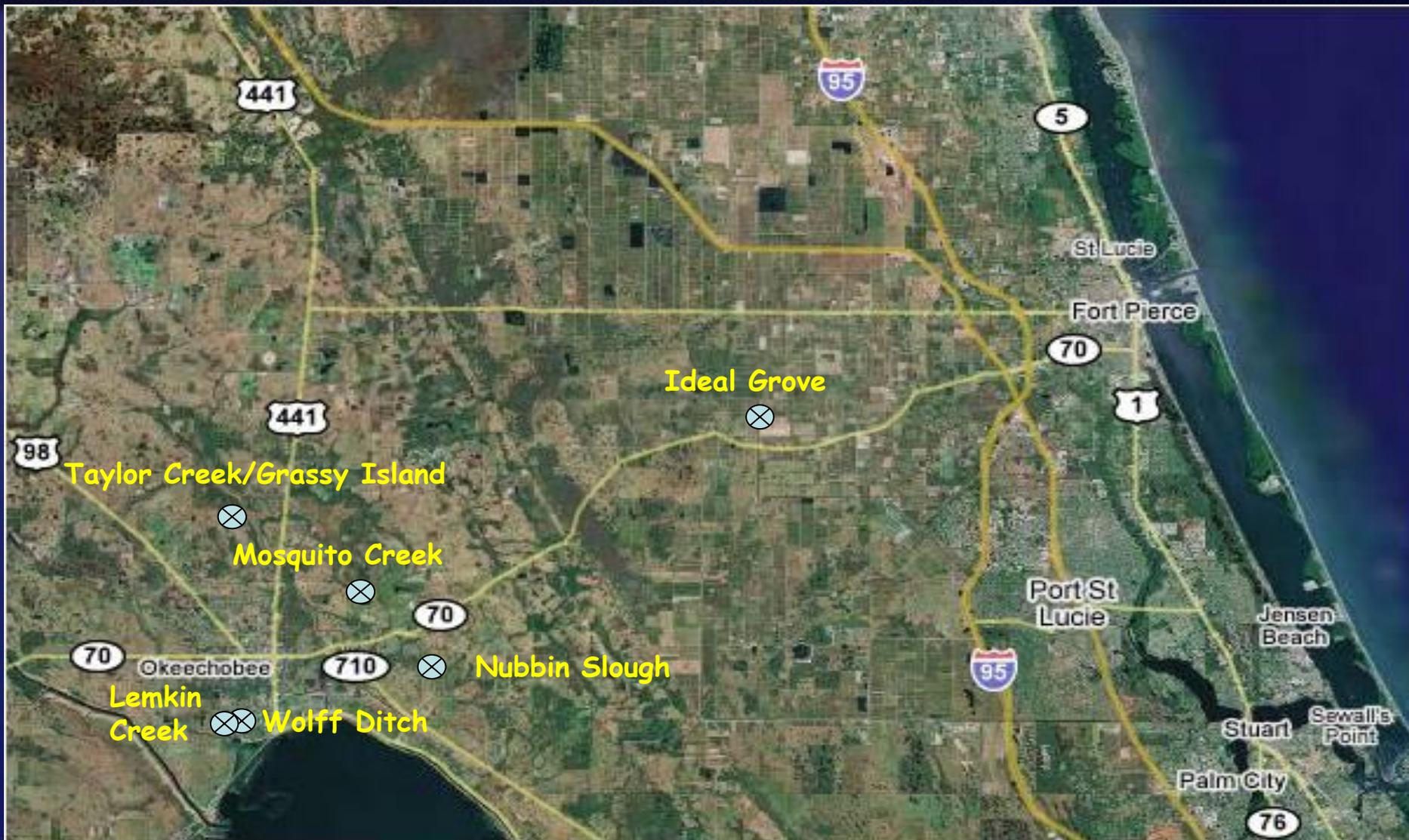
- A water treatment technology comprised of both wetland and coagulant addition components
- Developed during past decade to minimize costs/constraints of wetlands (footprint) and chemical treatment (ongoing coagulant expense)
- Creates synergies between the unit processes



HWTT Schematic

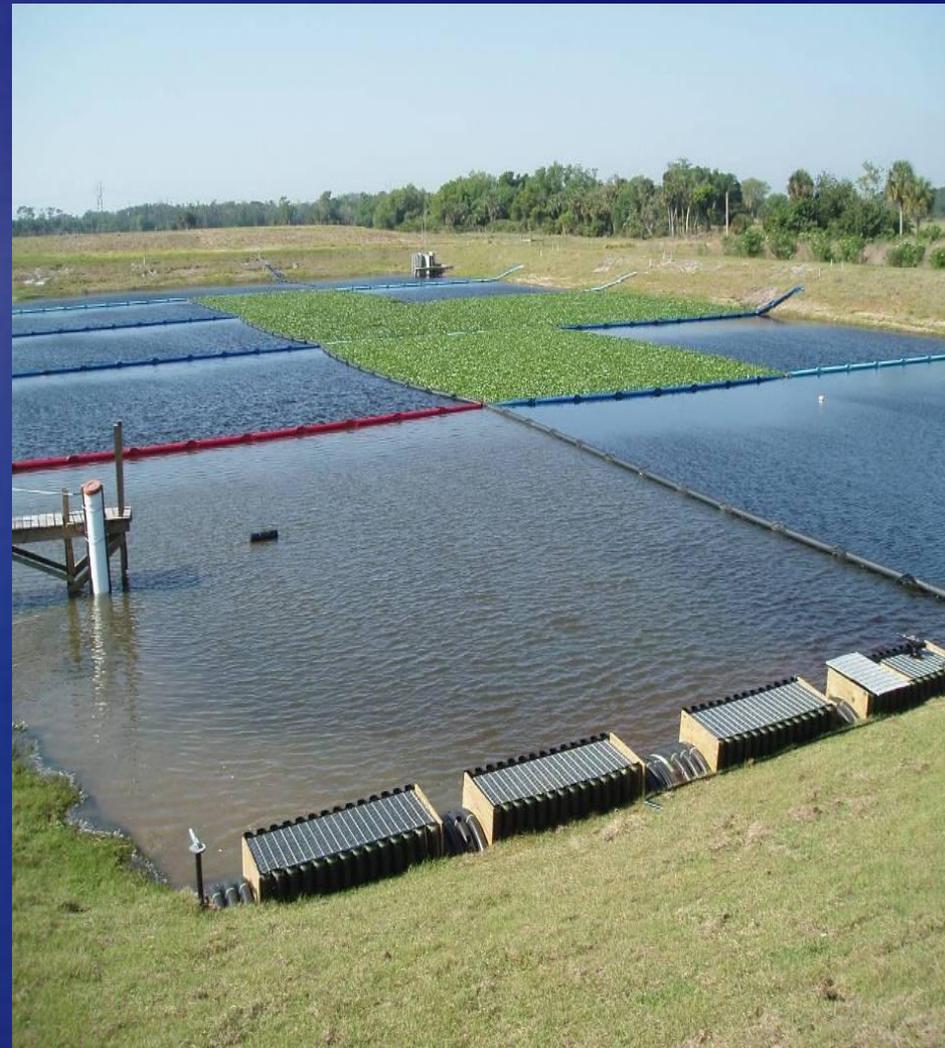
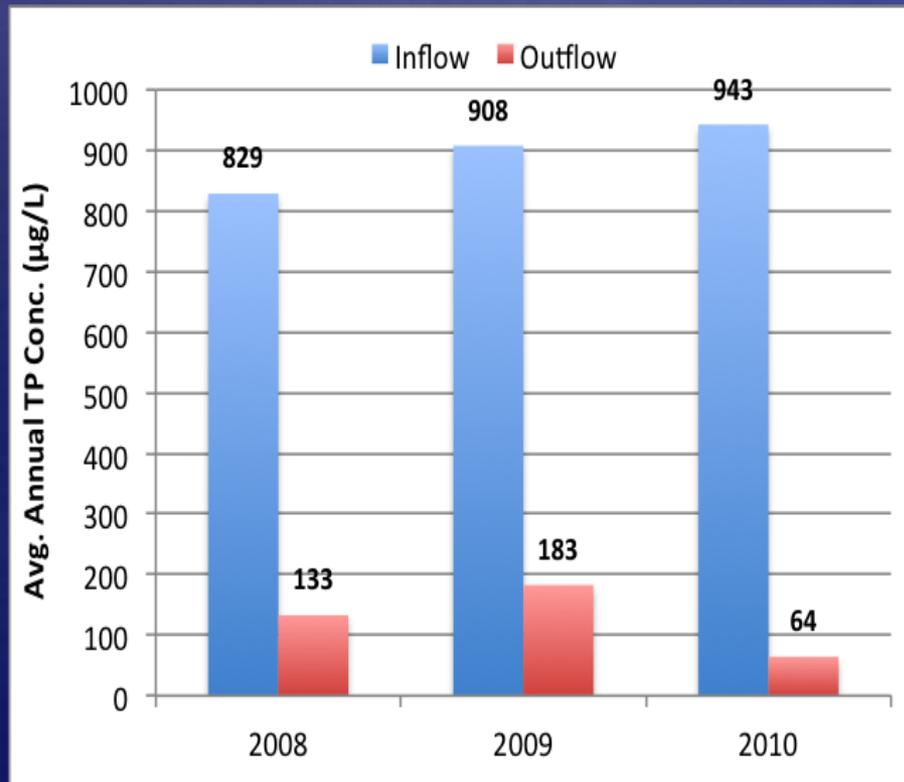


Locations of Existing HWTT Facilities



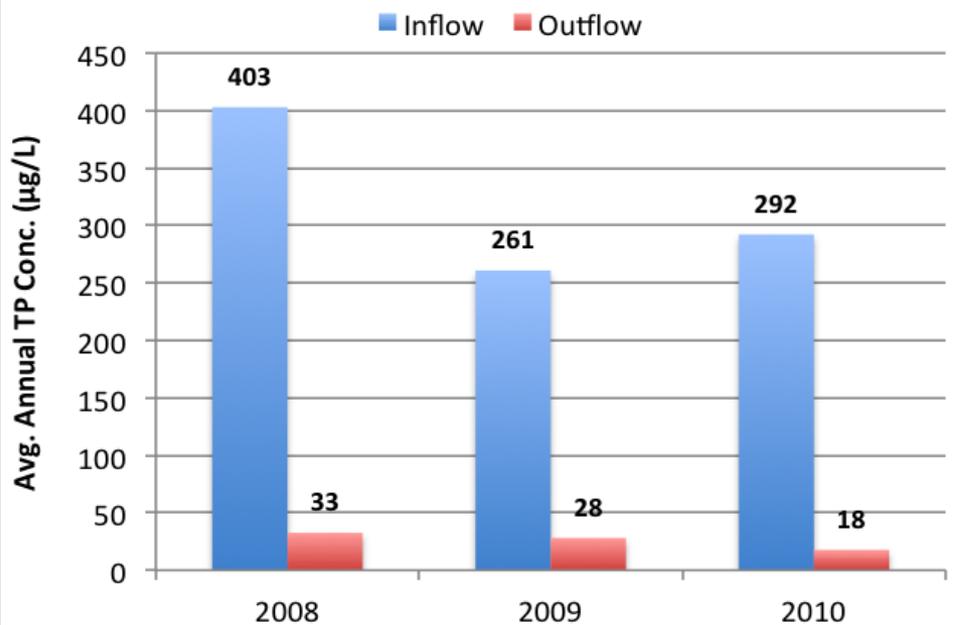
Nubbin Slough HWTT Facility

- 1.4 acres of treatment area
- Gravity fed system from Nubbin Slough



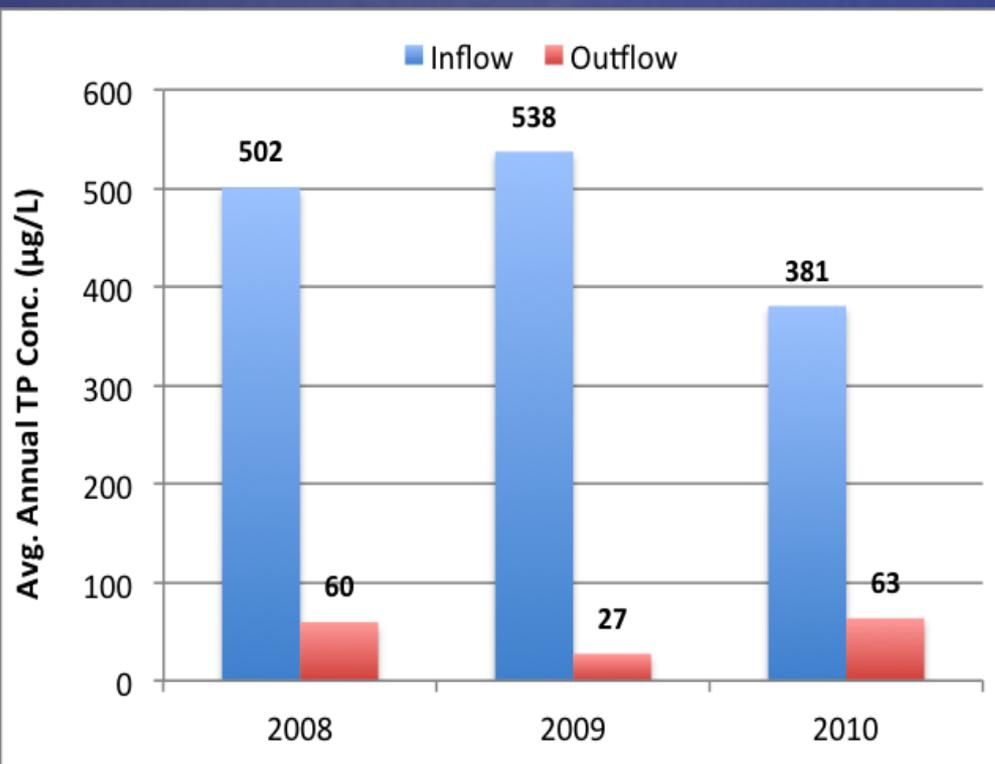
Ideal Grove HWTT Facility

- 0.7 acres of treatment area
- Pumped flow from citrus grove canals
- Parallel flow paths for testing chemical strategies



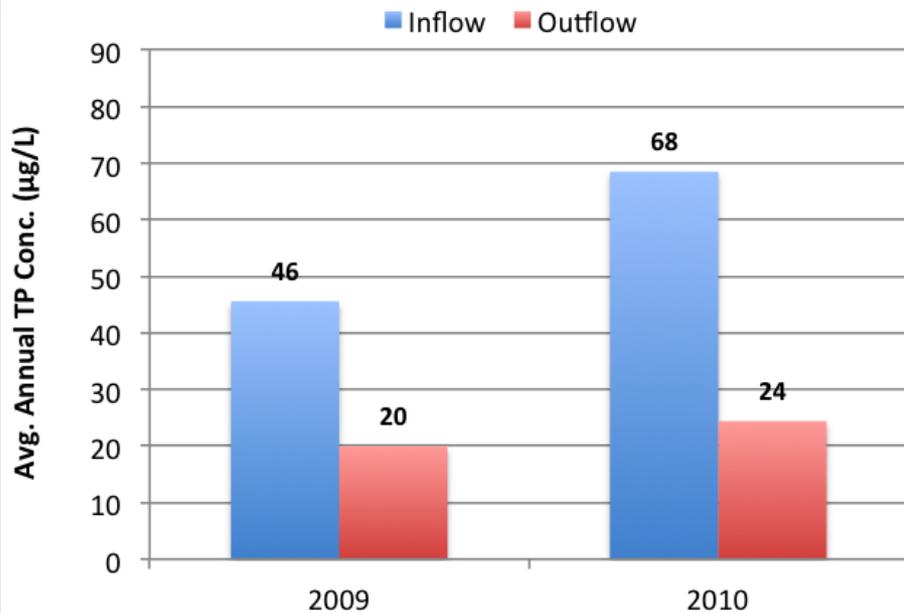
Mosquito Creek HWT Facility

- 1.7 acres of treatment area
- High and low flow systems
- Currently operating high flow only



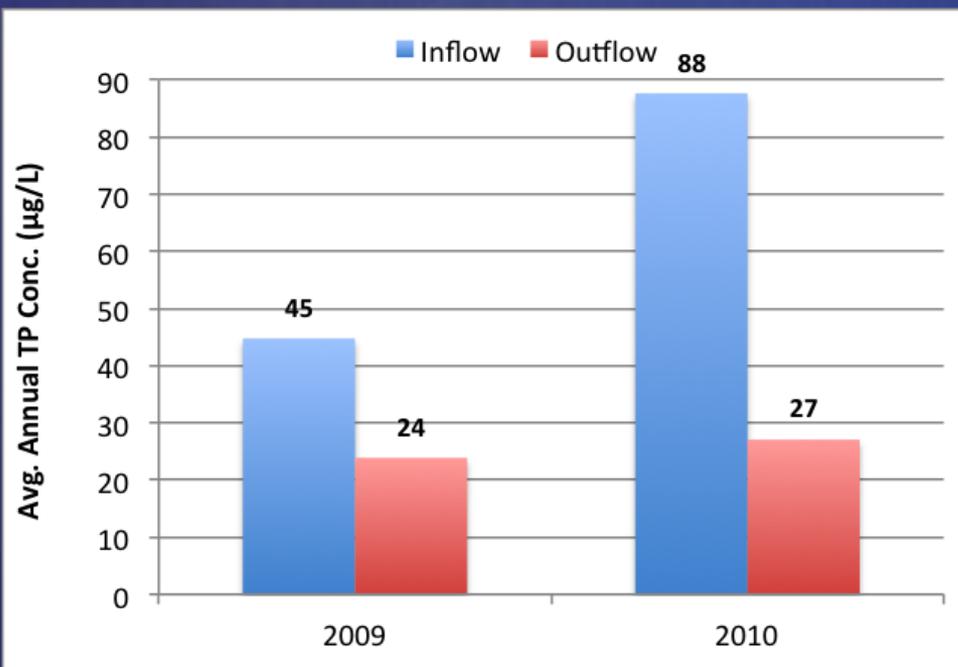
Lemkin Creek HWTT Facility

- 4.8 acres of treatment area
- Outflows are used to hydrate a downstream wetland
- Operations began late summer 2009

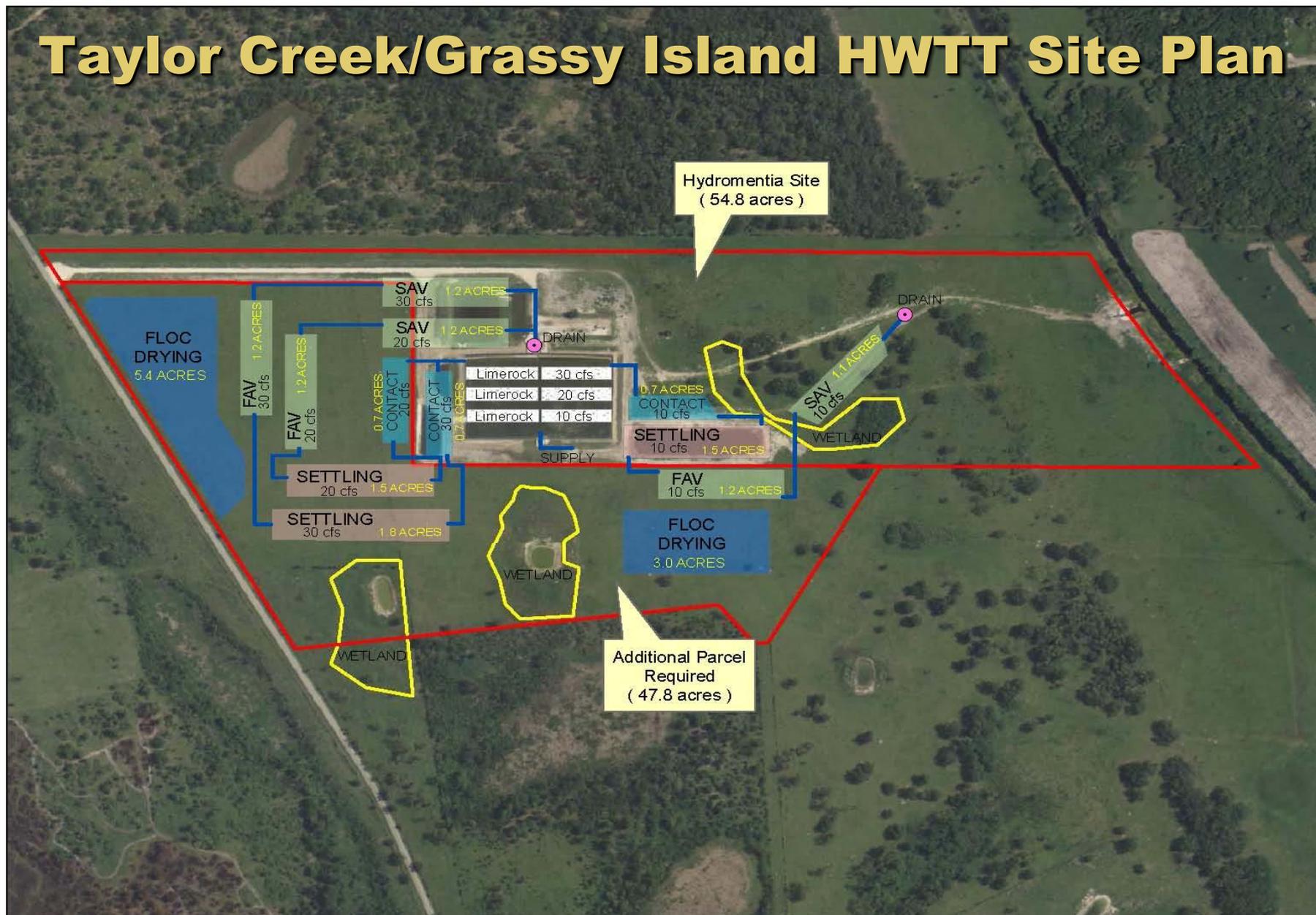


Wolff Ditch HWTW Facility

- 8.2 acres of treatment area
- Outflows are used to hydrate a downstream wetland
- Operations began late summer 2009

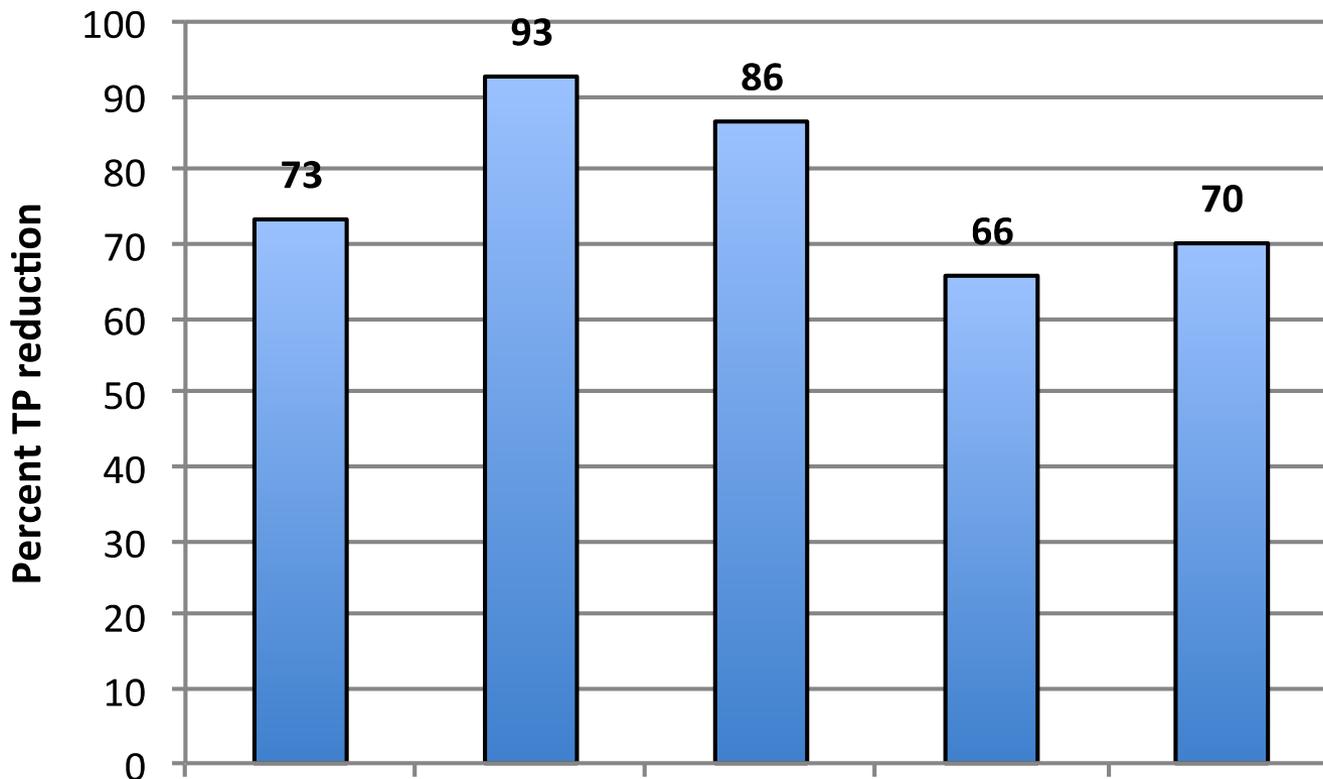


Taylor Creek/Grassy Island HWTT Site Plan



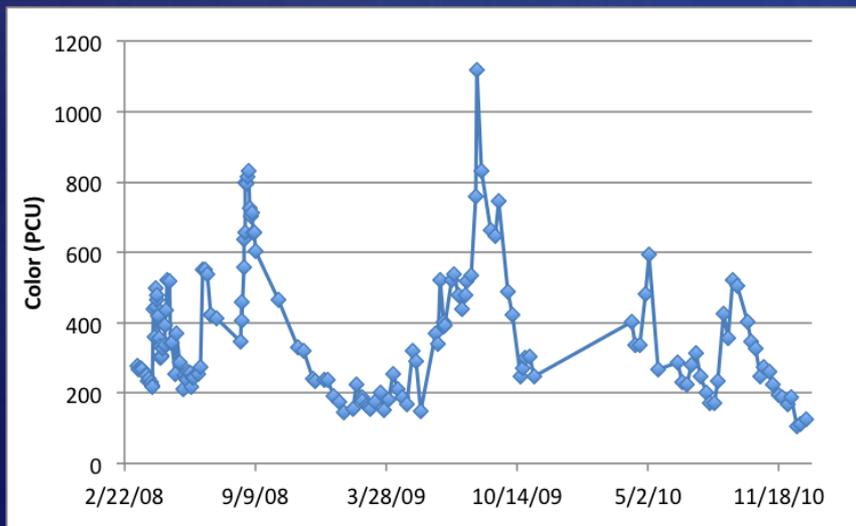
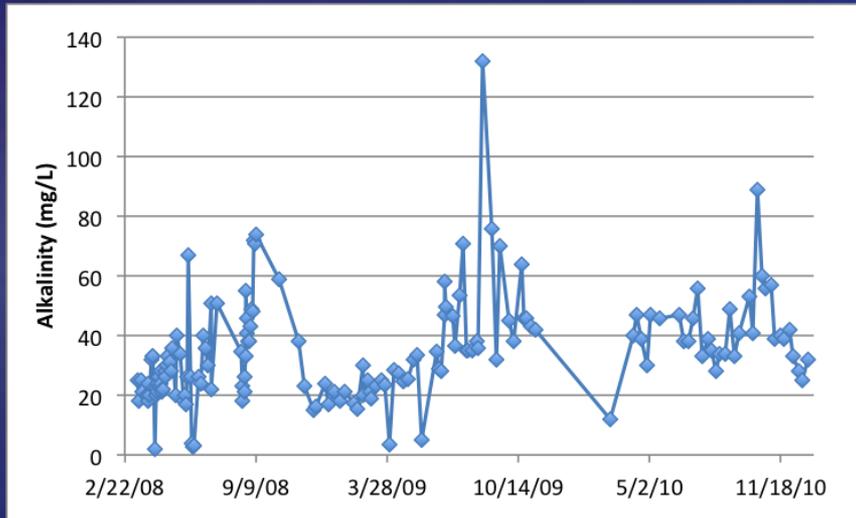
GRASSY ISLAND SITE PLAN

Flow-weighted TP Concentrations and Percent Reductions



	Nubbin	Ideal	Mosquito	Lemkin	Wolff
Inflow TP	872	231	387	79	105
Outflow TP	233	17	52	27	31

Water Quality Variability



- Charts depict Nubbin Slough temporal water quality fluctuations in Northern Everglades Watersheds
- Performance and cost implications for treatment systems

Potential for HWTT Use in the Northern Everglades - Summary

- The Northern Everglades can be a challenging environment for both chemical and wetland treatment systems
 - Broad temporal and spatial variability in water quality
 - Wet and dry seasons – short hydroperiod can impact Stormwater Treatment Areas
- HWTT systems are an appropriate technology for nutrient removal (P, N) in the Northern Everglades, with features for minimizing operating costs (chemical use) and maximizing performance, all within a relatively compact footprint

Governing Board Resolution

A Resolution of the Governing Board of the South Florida Water Management District to authorize an amendment to contract 4600001034 with the Florida Department of Agriculture and Consumer Services in the amount of \$1,484,120 for the continued monitoring, maintenance, operation and optimization of six Hybrid Wetland Treatment Technology facilities in the Lake Okeechobee and St. Lucie Watersheds, to extend the term by two months from November 14, 2011 to January 13, 2012, and authorize a budget transfer of Save Our Everglades Trust Fund funds from Managerial Reserves, Restoration Program, CERP Support to Everglades Restoration and Capital Projects, Restoration Program, Lake Okeechobee projects; providing an effective date. (Contract Number 4600001034-A04)



Questions?

Contract Transmittal Summary

- This project supports the Governing Board's strategic priorities and plan to achieve water quality improvements through the use of innovative nutrient control strategies and reduce phosphorus (P) loads entering Lake Okeechobee
- Development of this technology provides a tool for use by landowners, particularly in the agricultural industry, to help meet water quality goals. Private sector employment is thereby improved through :
 - Privatization of one of SFWMD's P reduction strategies
 - A reduction in government costs, which over time lowers taxing requirements to fulfill one of SFWMD's missions
 - Provides for cost-sharing opportunities with the private sector to reach common goals