Restoration Strategies Science Plan Progress

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Additional Studies: Brief Updates

Use of Soil Amendments/Management to Control P Flux

Can STA soil P flux be reduced with soil amendments or management techniques

Evaluate the Use of Alternative Vegetation Occurring in Low P Environments to Achieve Low P STA Discharge

Do rooted FAV reduce STA phosphorus discharge

Impacts of Deep Water Inundation Pulses on Cattail Sustainability

Evaluate the influence of deep water on cattails for management decisions

Additional Studies: Brief Updates

Develop Operational Guidance for FEB/STA Regional Operational Plans
Develop tools and operational protocols for FEBs/STAs to minimize STA outflow P

Sampling Methods for Total Phosphorus
Determine which sampling regime & method provides most accurate representation of TP

STA Water & Phosphorus Budget Improvements
Developing improved annual water and P budgets for STA treatment cells

Additional Studies: Brief Updates

Evaluation of the Influence of Canal Conveyance Features on STA & FEB Inflow & Outflow TP Concentrations

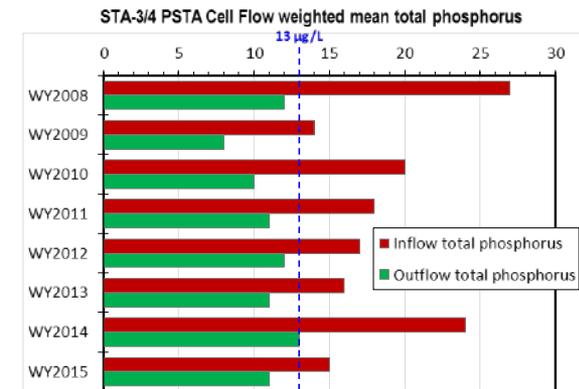Determine whether P changes when conveyed through STA inflow & outflow canals

STA-1 Inflow Basin Canal   Canal behaved as a source for TP

STA-1E Discharge Canal   Canal assumed to behave as sink for TP due to seepage from Loxahatchee NWR

STA-1W Discharge Canal   Analysis in review

STA-2 Supply/Inflow Canal   Could not determine if canal was source or sink for TP

STA-2 Discharge Canal   Analysis in 2017

STA-3/4 Supply/Inflow Canal   Canal behaved as a sink for TP

Additional Studies: Brief Updates

Periphyton-based Stormwater Treatment Area (PSTA): Performance, Design & Operational Factors

Average outflow TP over an extended period (2008-2015) has been consistently ≤ to 13 µg L^{-1} (13 ppb)

STA-3/4 PSTA Cell Flow weighted mean total phosphorus

- Inflow total phosphorus
- Outflow total phosphorus

Phosphorus Sources, Forms, Flux, & Transformation Processes in the STAs

Characterize P sources, speciation, cycling, & transport in STAs, and understand mechanisms and factors influencing P reduction in low P environment

Diffusive P flux estimated with Porewater samplers (peepers)

Net P flux measured in chambers (vegetated and non vegetated)

Net P flux in chambers indicates decreasing net P flux rates from inflow to outflow

Summary

- Restoration Strategies Science Plan Developed to optimize STA treatment performance to meet WQBEL

- Nine initial studies in various stages of implementation

- Science Plan updates and subsequent results presented in the annual SFER

www.sfwmd.gov/restorationstrategies/