# SFWMD Southern Everglades Nutrient Source Control Program Update

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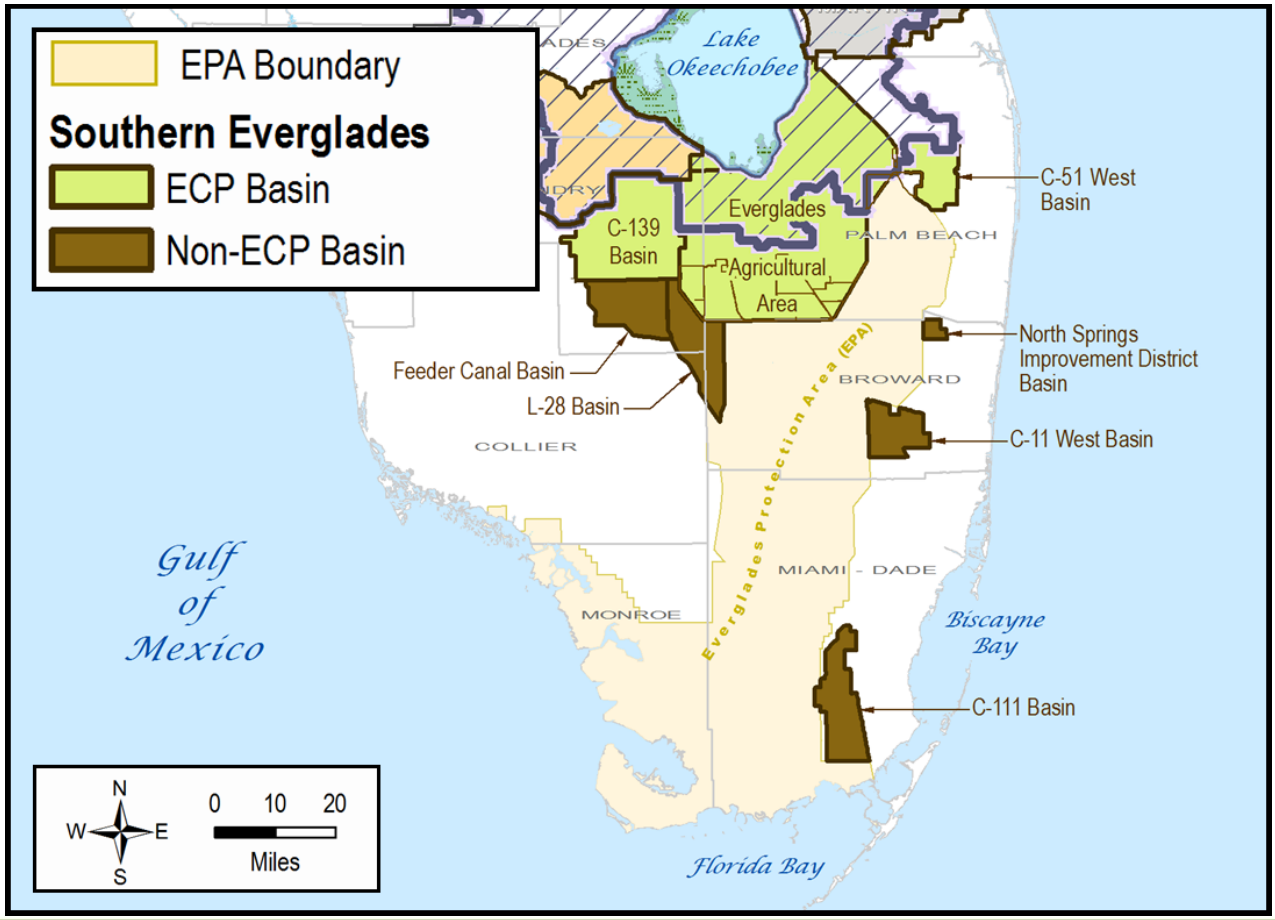
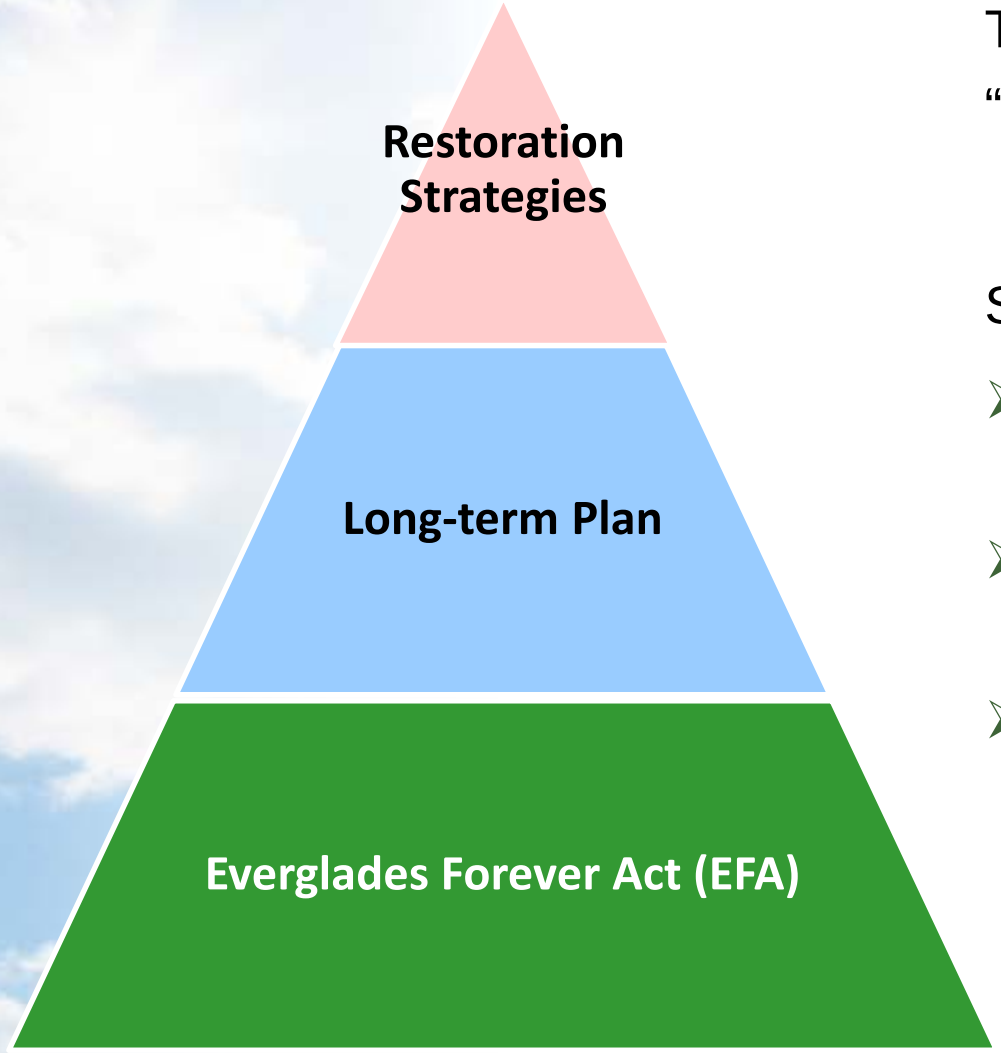
17th Annual Public Meeting on the Long-Term Plan for Achieving Water Quality Goals for the Everglades Protection Area Tributary Basins
February 24, 2020

# Basins Tributary to the Everglades Protection Area

# Long Term Plan Project Objectives

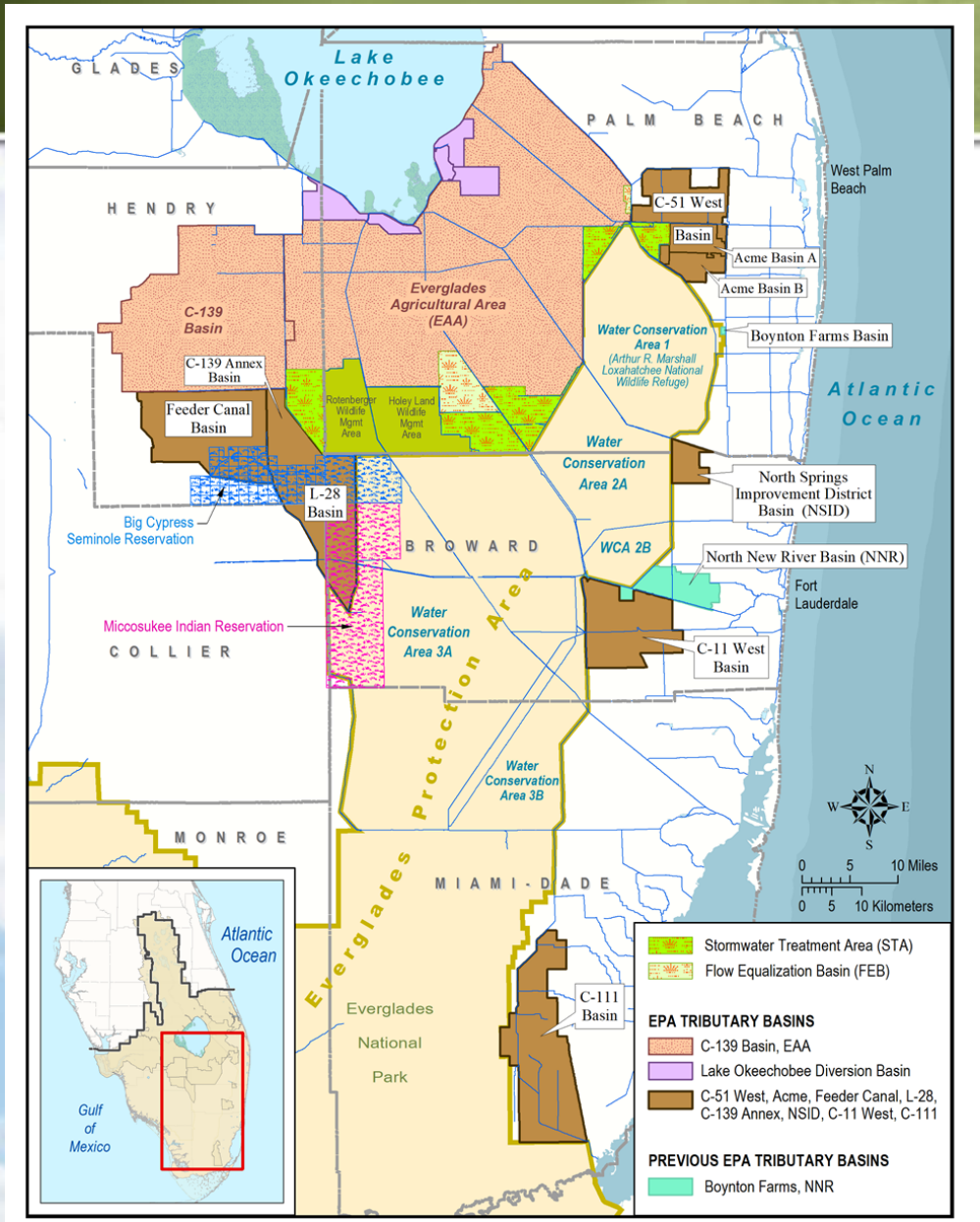



The Long-Term Plan recommends activities designed to:

"***Maintain and improve*** *upon the contribution of source controls to overall water quality improvement goals."*

Specifically:

- **Identify** discharges that are candidates for implementation of **cost-effective** source controls
- Characterize management practices on lands or processes tributary to those discharges
- Implement these source controls **in concert with** landowners or municipalities




# Contents

- EAA and C-139 Basins
  - Regulatory activities
  - Research and demonstration projects
  - Sub-regional source control projects
- Other Tributary Basins
  - Regulatory and cooperative activities
  - Project integration

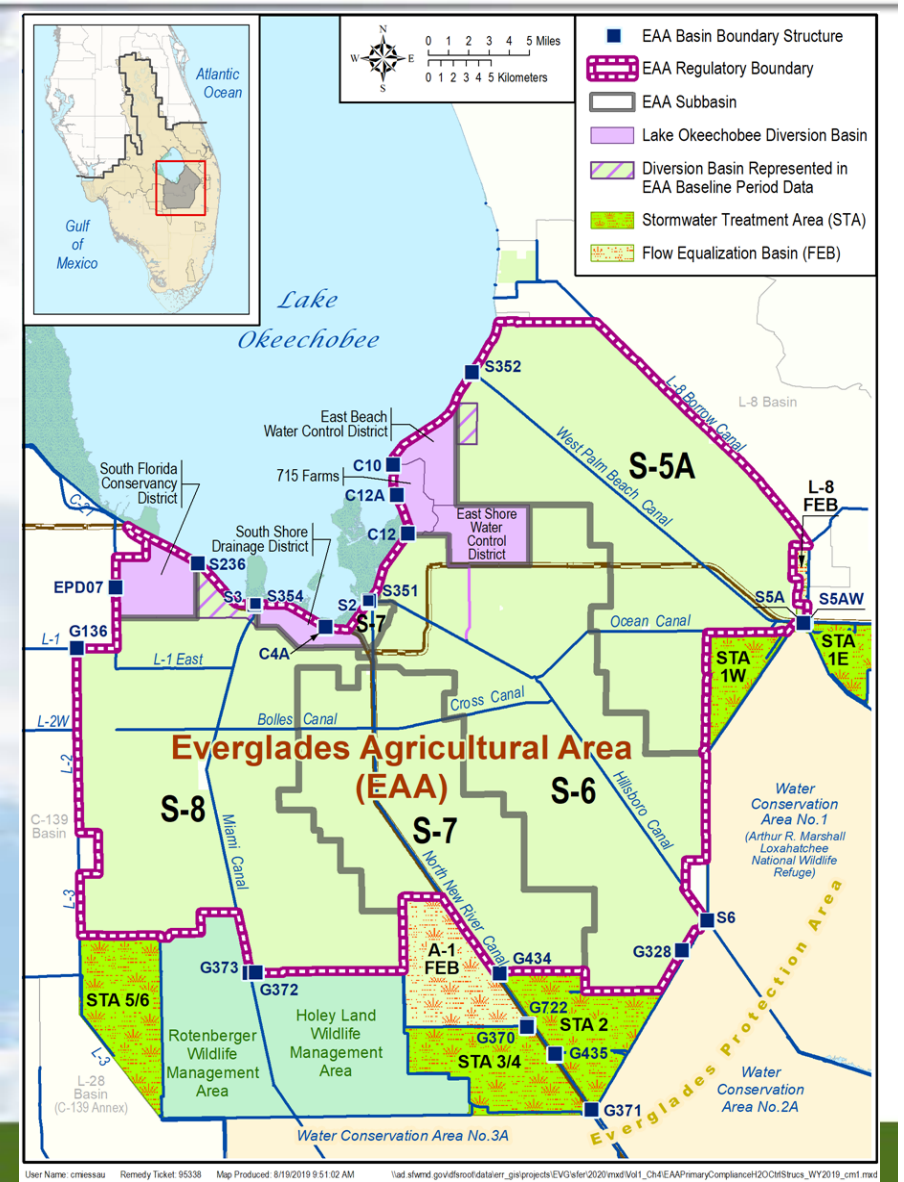
# WY2019 Phosphorus Data by Basin

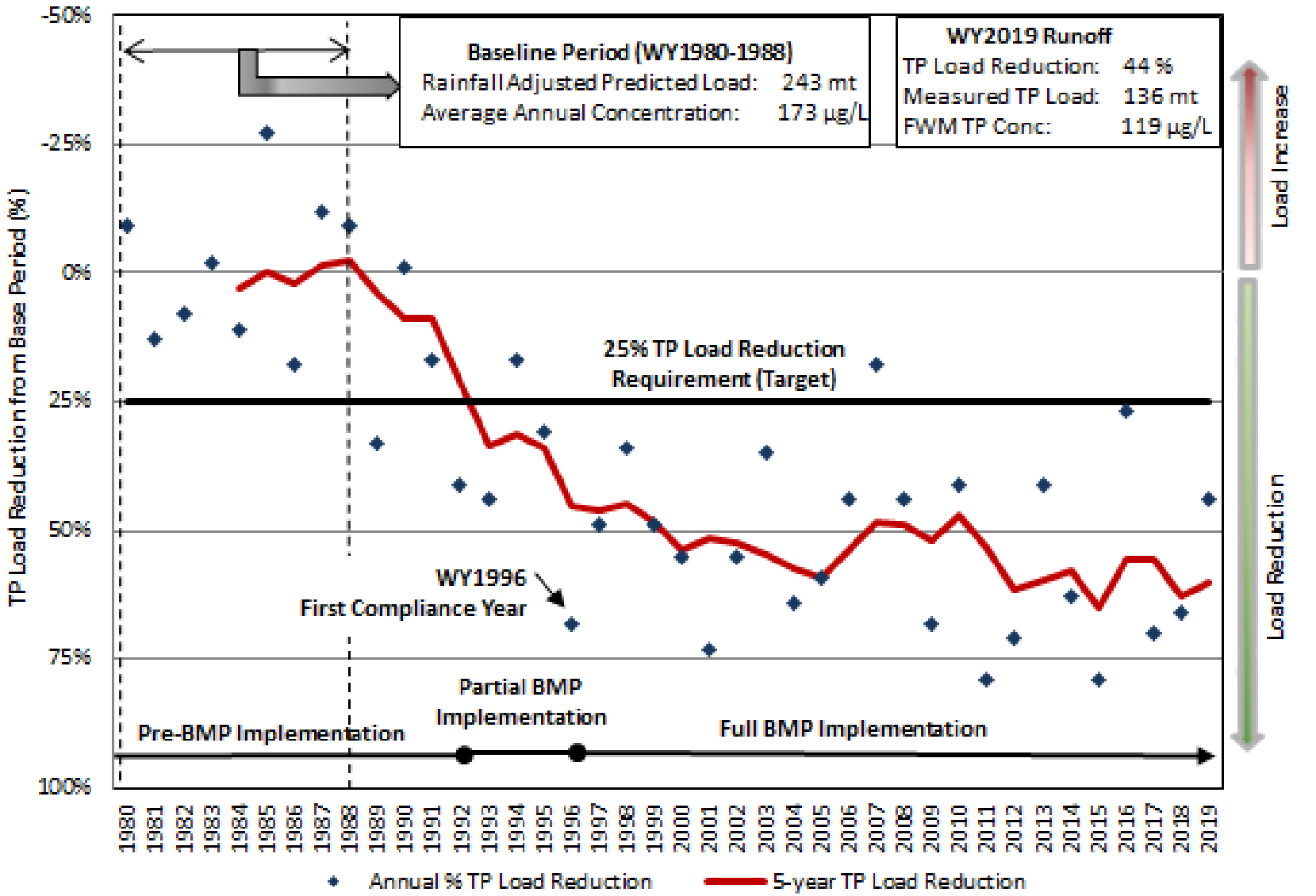
| Basin | Receiving Body | WY2019 TP Load (metric tons) | WY2019 TP FWMC (µg/L) |
|---|---|---|---|
| Everglades Agricultural Area (EAA) | STAs and Lake Okeechobee | 136 | 119 |
| C-139 | STA 5/6 and EAA | 30 | 153 |
| C-51 West and ACME | STA-1E and C-51 East Basin | 15 | 227 |
| L-28 | Water Conservation Area (WCA) 3A | 8 | 64 |
| C-11 West | WCA-3A | 5 | 18 |
| Feeder Canal | WCA-3A | 2 | 53 |
| C-111 ✖ | Everglades National Park | 2 | 7 |
| North Springs Improvement District (NSID) | WCA-2A | 0.03 mt (30 kg) | 29 |
| North New River (NNR) ✖ | Coastal Broward County | - | - |
| Boynton Farms ✖ | Lake Worth Drainage District | - | - |

# EAA and C-139 Basin Source Control Programs

| Chapter 40E-63 | EAA | C-139 Basin |
|---|---|---|
| Permit-level compliance | • Comprehensive BMPs<br>• Permittee water quality monitoring<br>• Post-permit compliance activities | • Comprehensive BMPs<br>• Sub-basin water quality monitoring<br>• Post-permit compliance activities |
| Basin-level water quality compliance | Reduce TP Loads by 25% in comparison to pre-BMP period levels | Maintain TP Loads below pre-BMP period levels |
| Research and Demonstration | EAA Everglades Protection District (EAAEPD) Research Master Permit | Demonstration projects in partnership with landowners |
| Supplementary Projects | Restoration Strategies EAA Eastern Flow path source control projects | Upstream monitoring initiatives |

# EAA Basin-Level Compliance *25% Reduction in TP Load*



# EAA BMP Research Permit

- The EFA requires a comprehensive program of research, testing and implementation of BMPs.
- A 5-year Master Research Permit is issued if the scope is approved by the SFWMD
  - Qualified experts
  - Identify appropriate BMPs
  - BMPs field-tested in representative sites
  - Soil, crops, other factors affecting BMP design and effectiveness
  - Outreach and Training

Photo 1

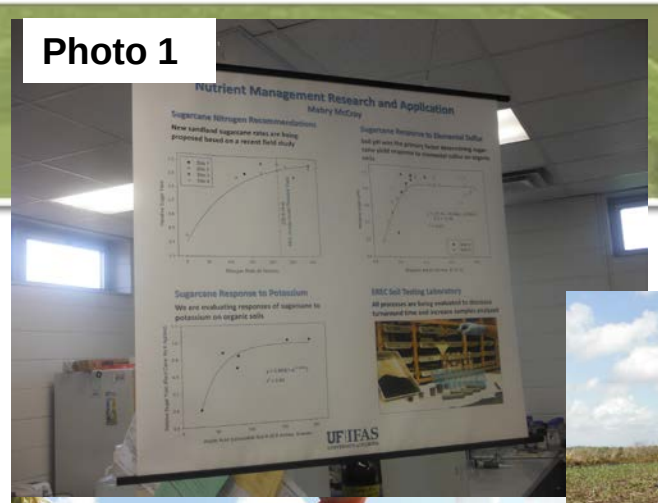
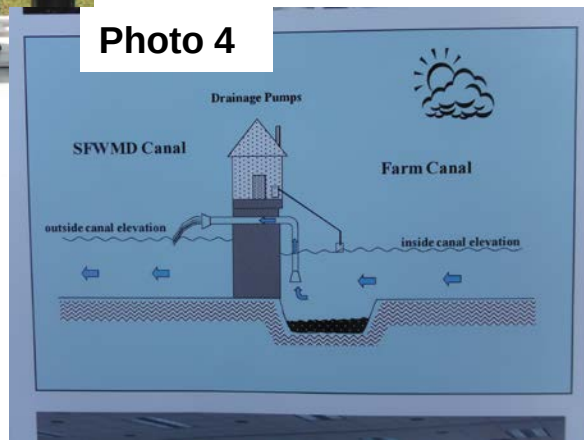



Photo 2

Photo 3

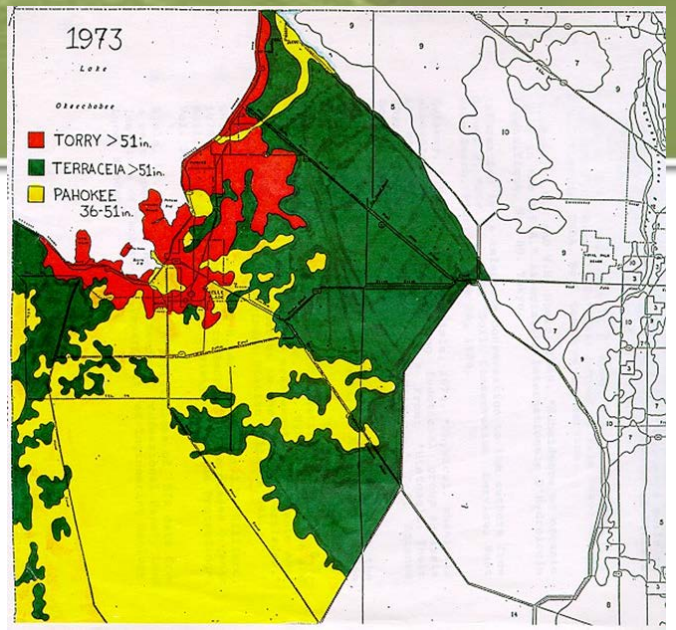
Photo 4

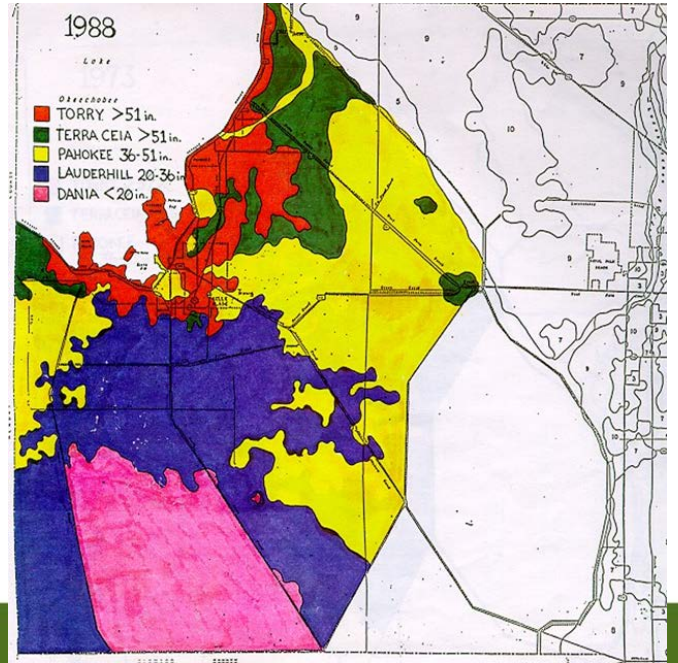



**Photos:**
1. Soil Testing Research at UF-IFAS Belle Glade
2. Controlled application
3. Aquatic vegetation and sediments research at UF-IFAS
4. Discharge pump diagram at UF-IFAS

# Proposed BMP Research Scope

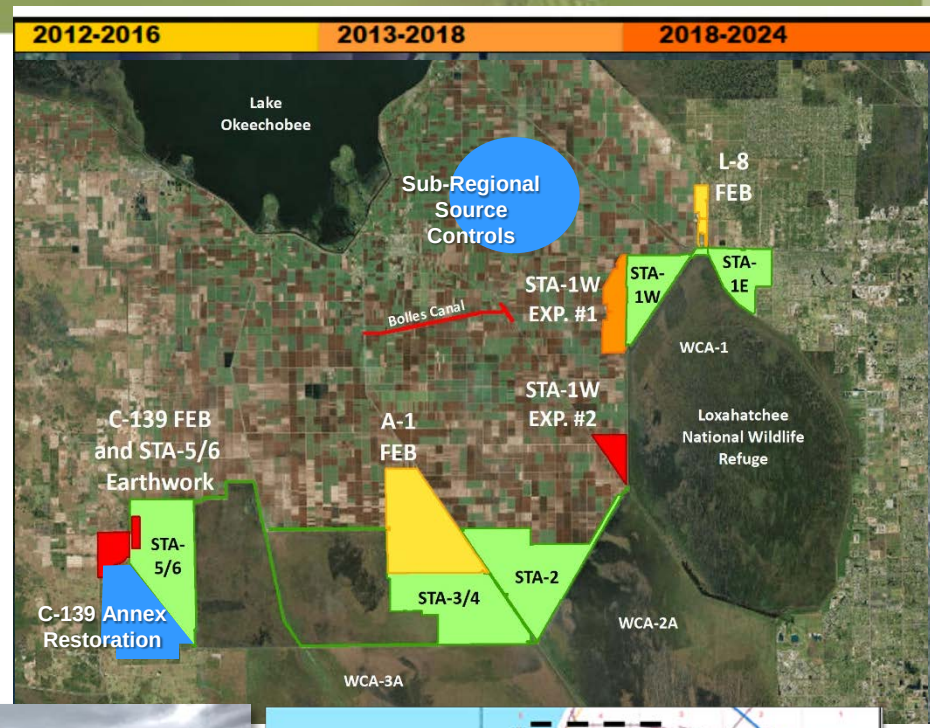
- Phosphorus concentration in drainage water is impacted by the chemistry and properties of organic soils and land management. Phosphorus in drainage water is higher with:
  - High TP and available soil test P due to prior agricultural use;
  - Deeper soils; and
  - Higher organic matter content and lower inorganic mineral content (carbonates, Fe, and Al oxides)
- Lessons learned from low TP farms to other farms with similar soil properties, crop production, and drainage systems.



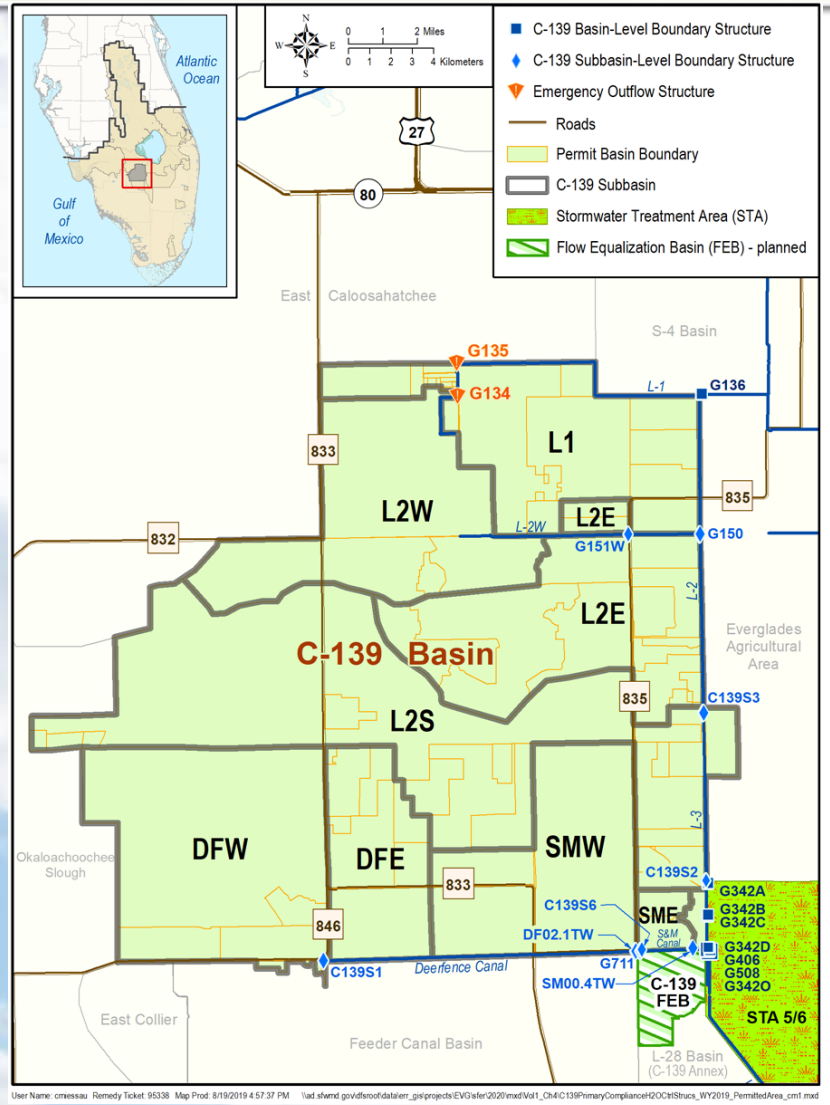



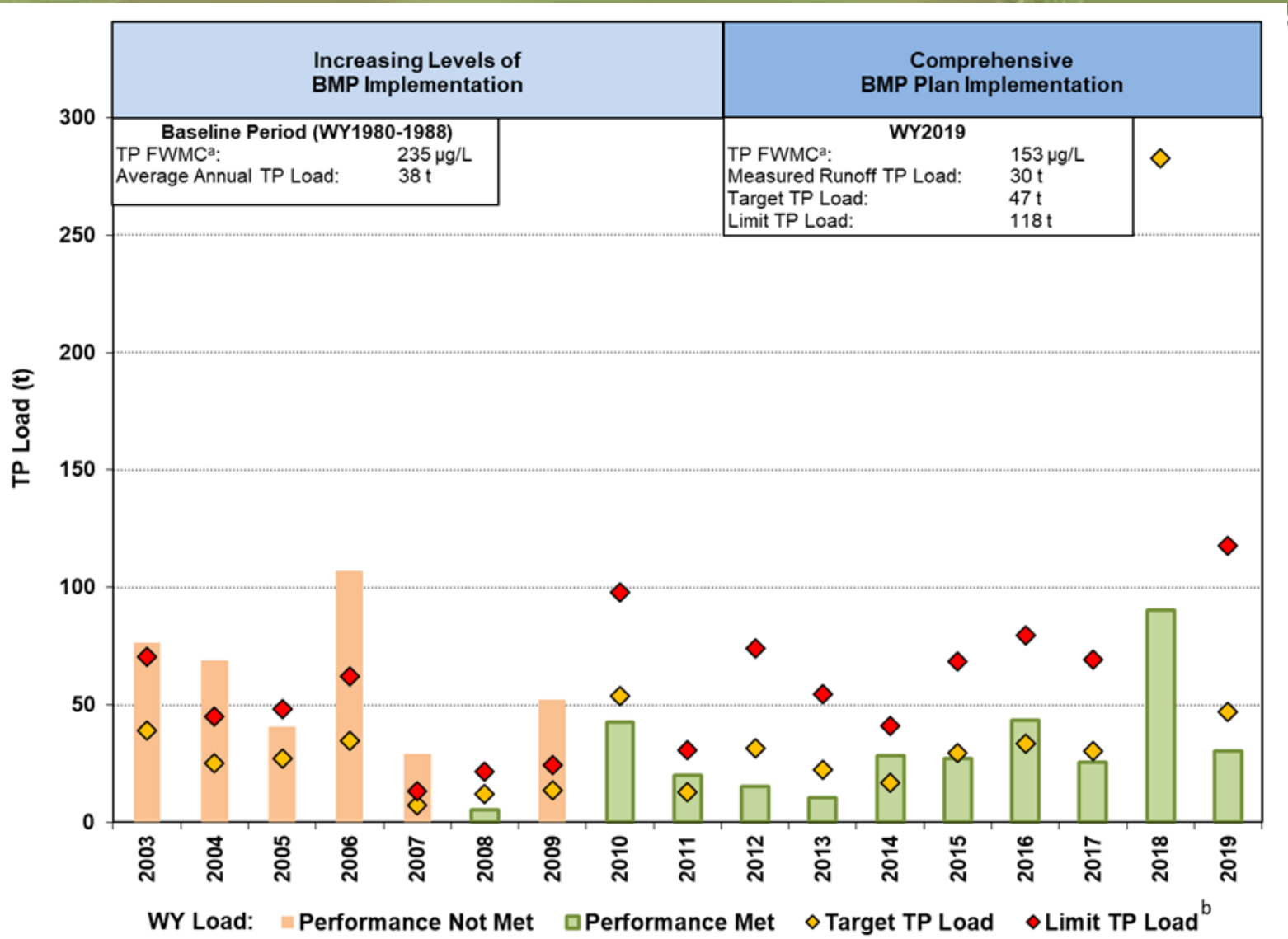
# Restoration Strategies Source Controls

- Build on the SFWMD regulatory BMP program
- Projects…
  - Strategic on-site locations or sub-regional source control projects in series with on-site BMPs
  - Focus on areas and projects with the greatest potential to improve water quality
  - Designed to increase retention or detention of TP above what is currently required
- Evaluating feasibility of more flexible water management approaches in the Beach Water Control District

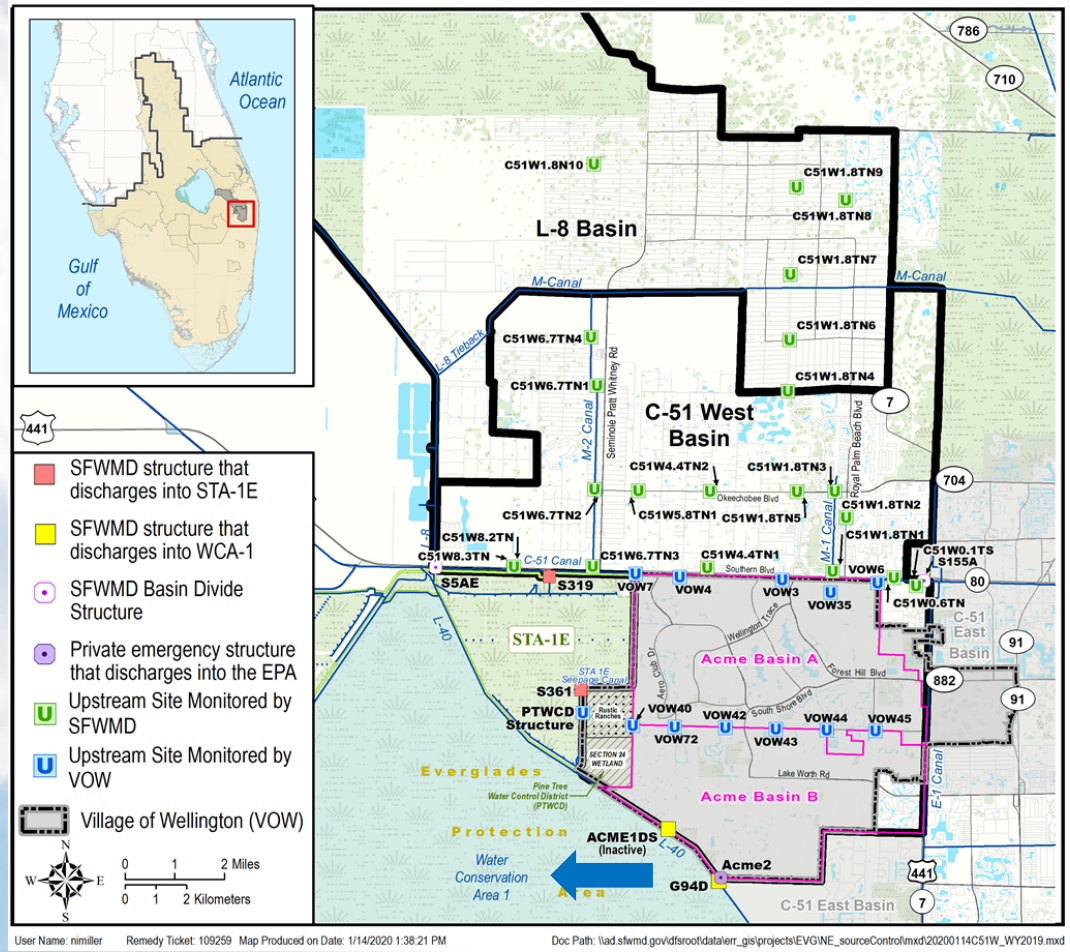


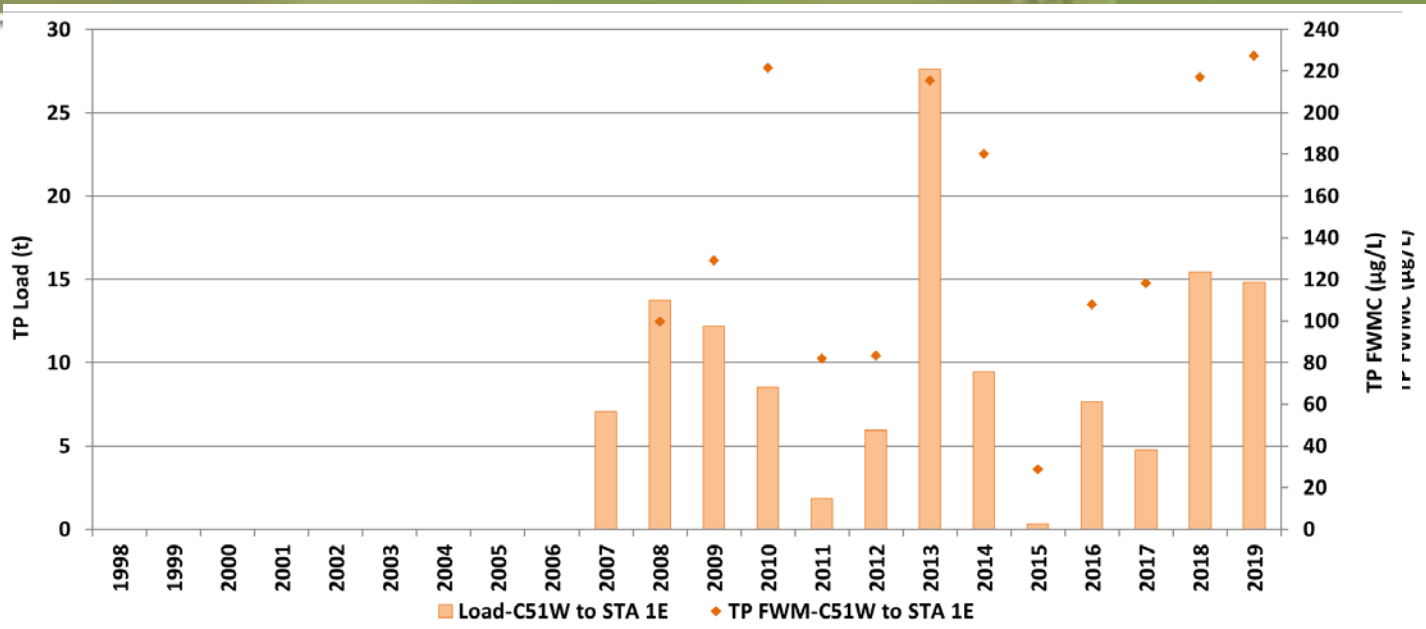

# C-139 Basin Level Compliance *TP Load below historic levels*



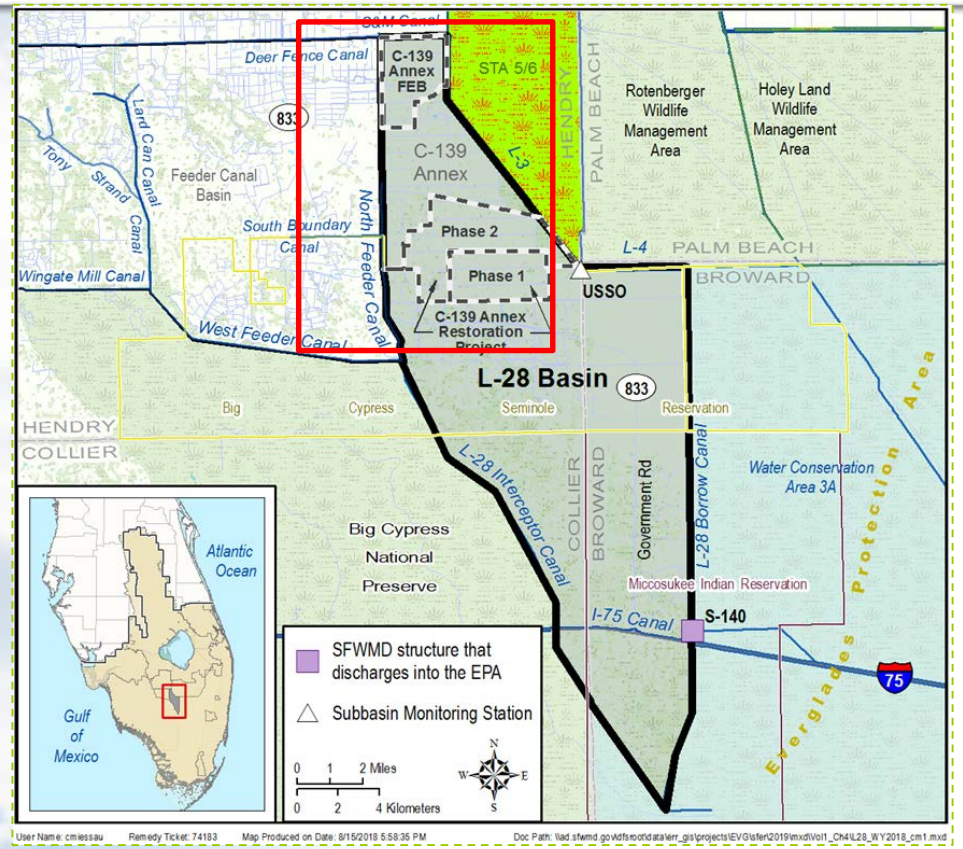
# C-51 West and ACME Basin

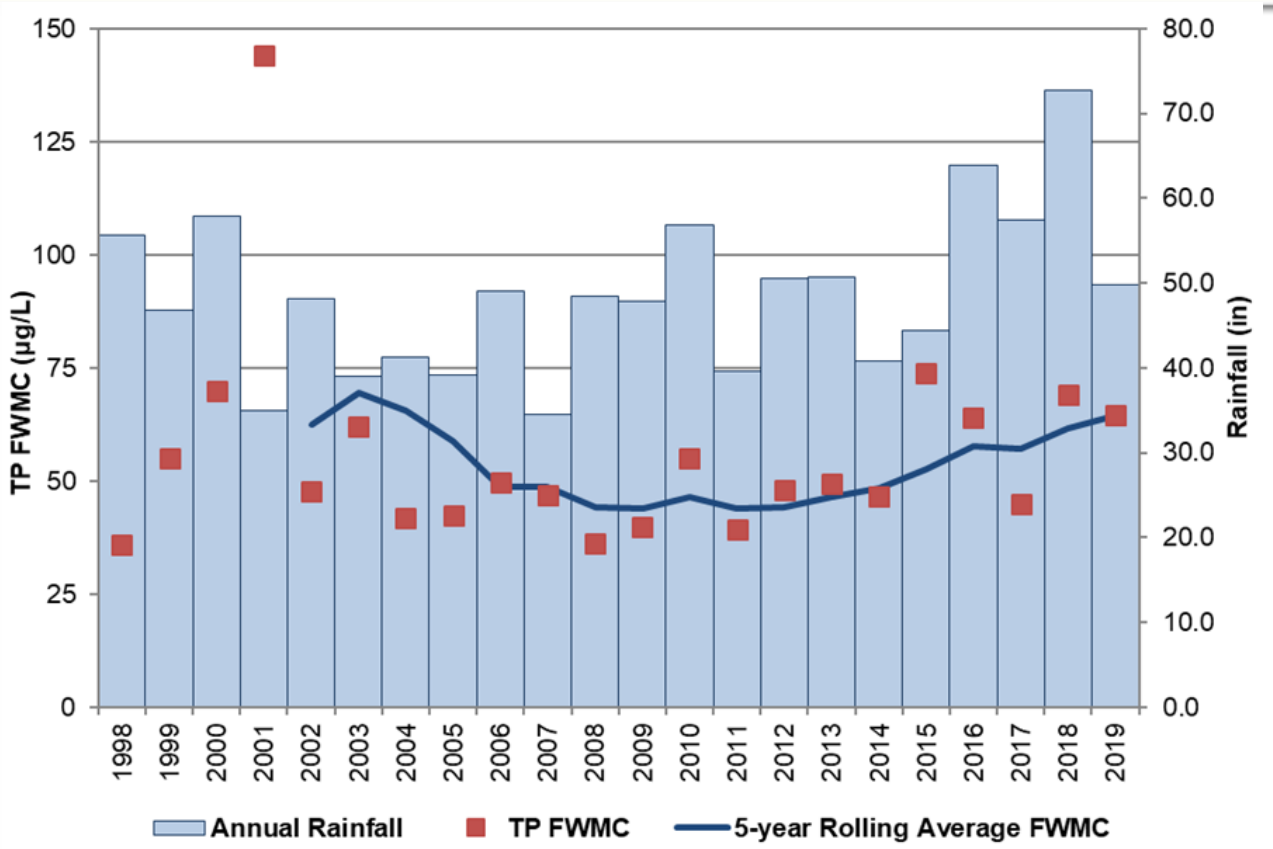



- Environmental Resource Permits to Village of Wellington and Pine Tree WCD (PTWCD)
  - BMPs and livestock waste storage and disposal
  - Water quality monitoring (**U** markers) and reporting
- **2019 Expanded monitoring network (U markers)**

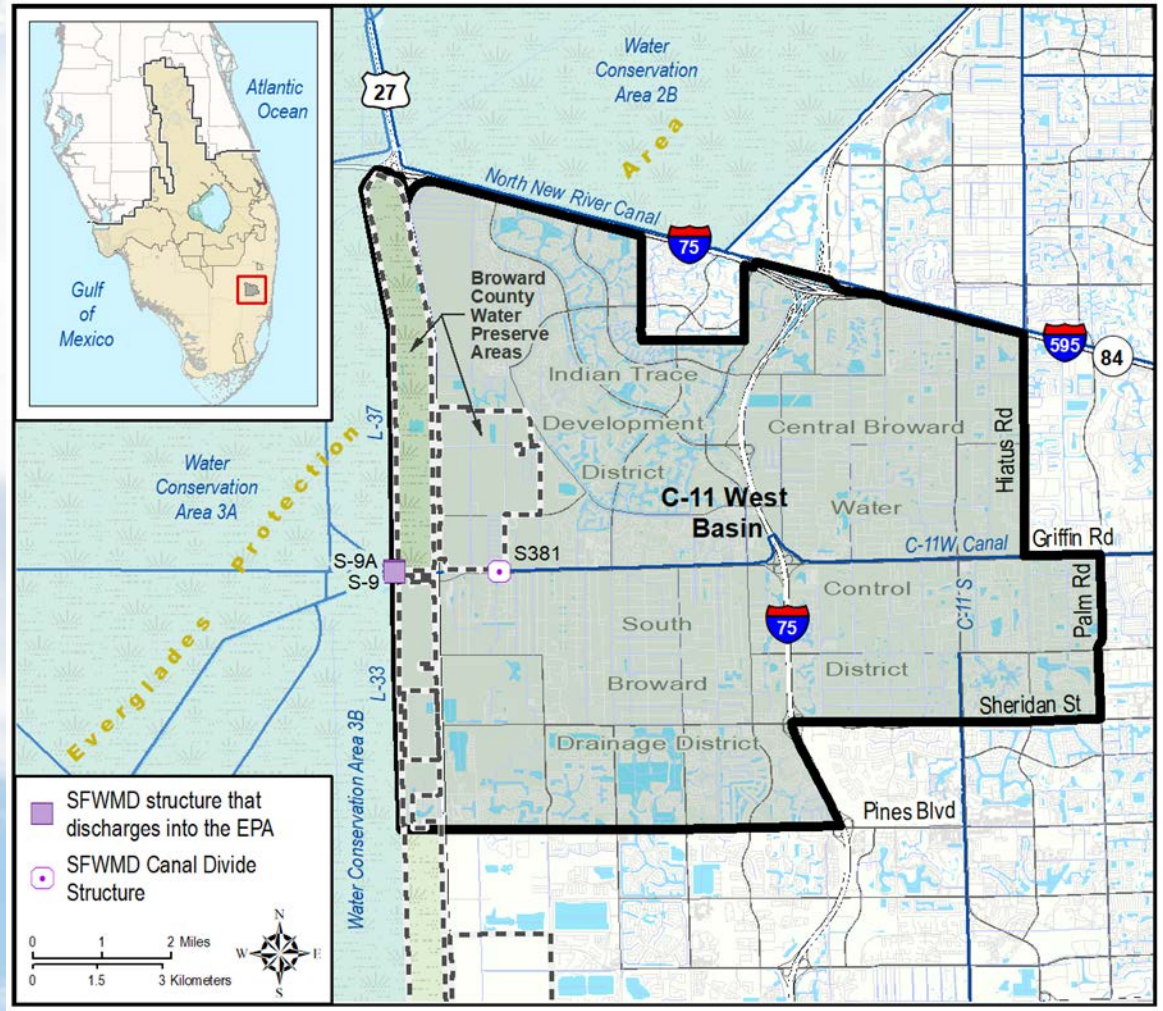
# L-28 Basin

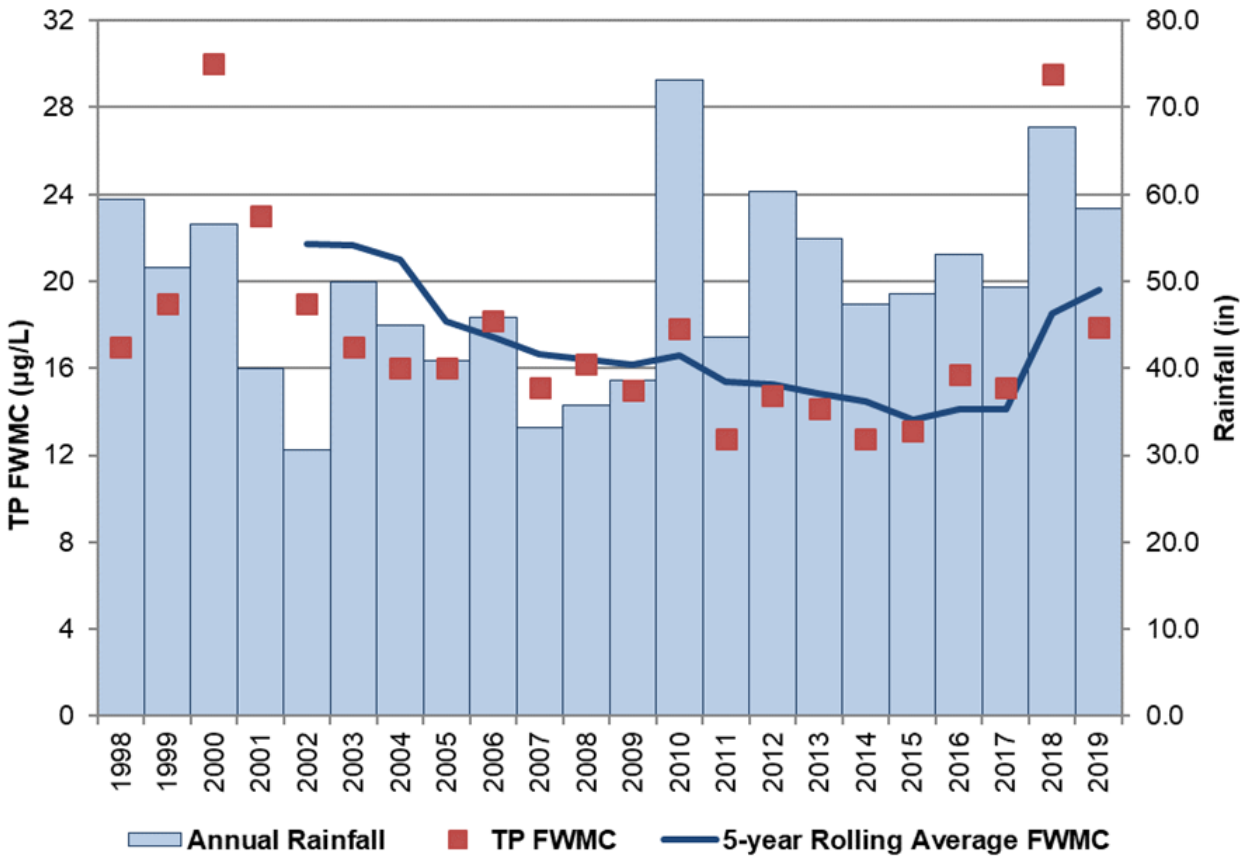



- Environmental Resource Permit to Southern Gardens Groves including Best Management Practices
- Other projects: C-139 Flow Equalization Basin and Sam Jones Abiaki Prairie Restoration
- CERP Big Cypress/L-28 Interceptor Modification (WERP) – Planning

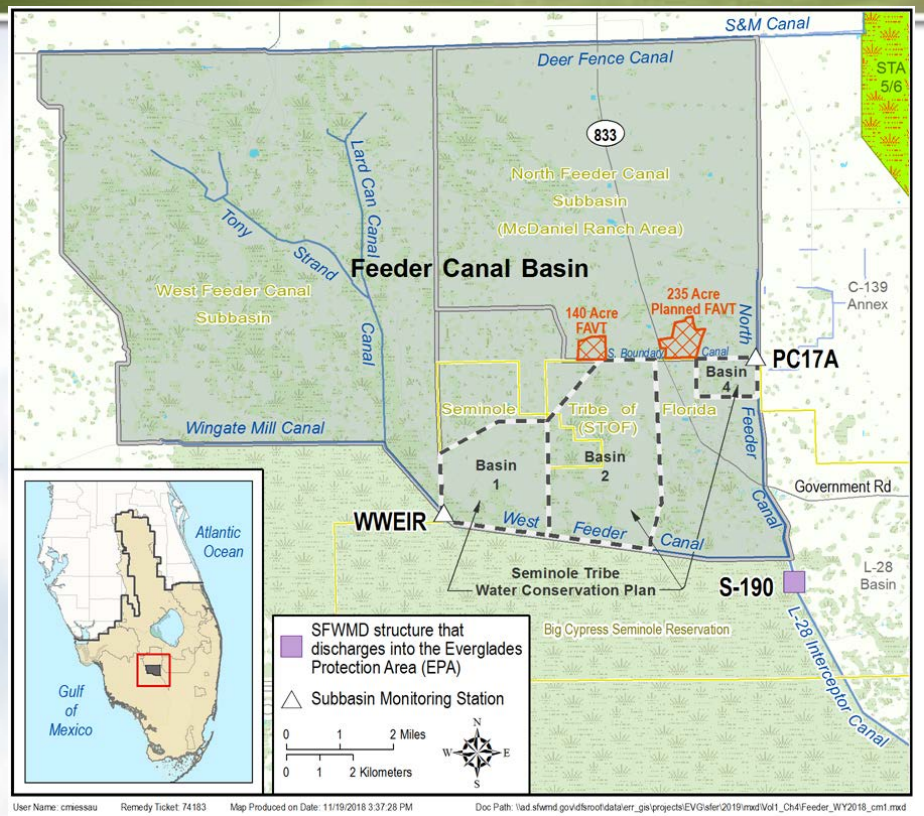
# C-11W Basin

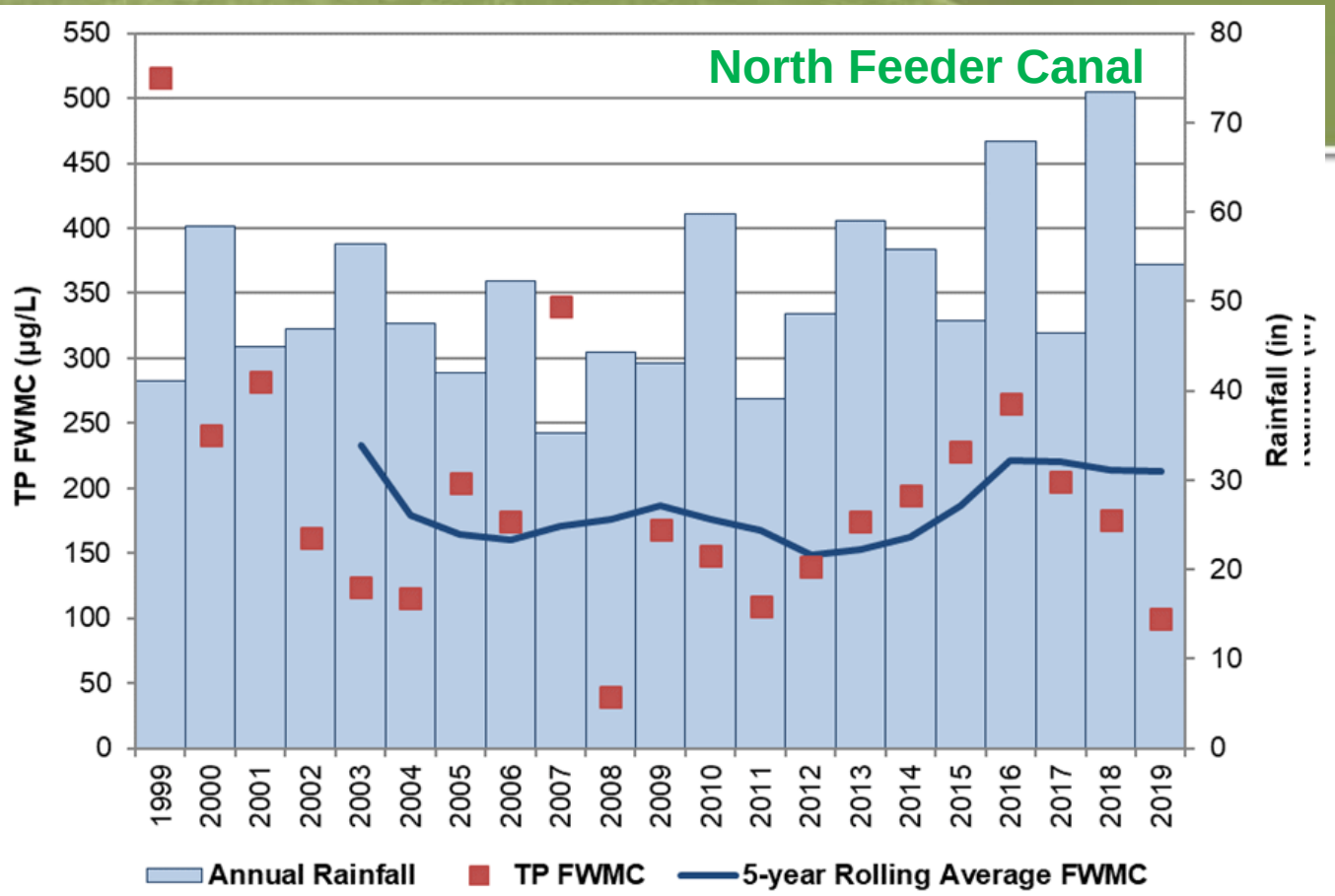



- Environmental Resource Permits to WCDs including optimized detention and water quality reporting
- Ongoing CERP Project: Broward Co Preserve Area

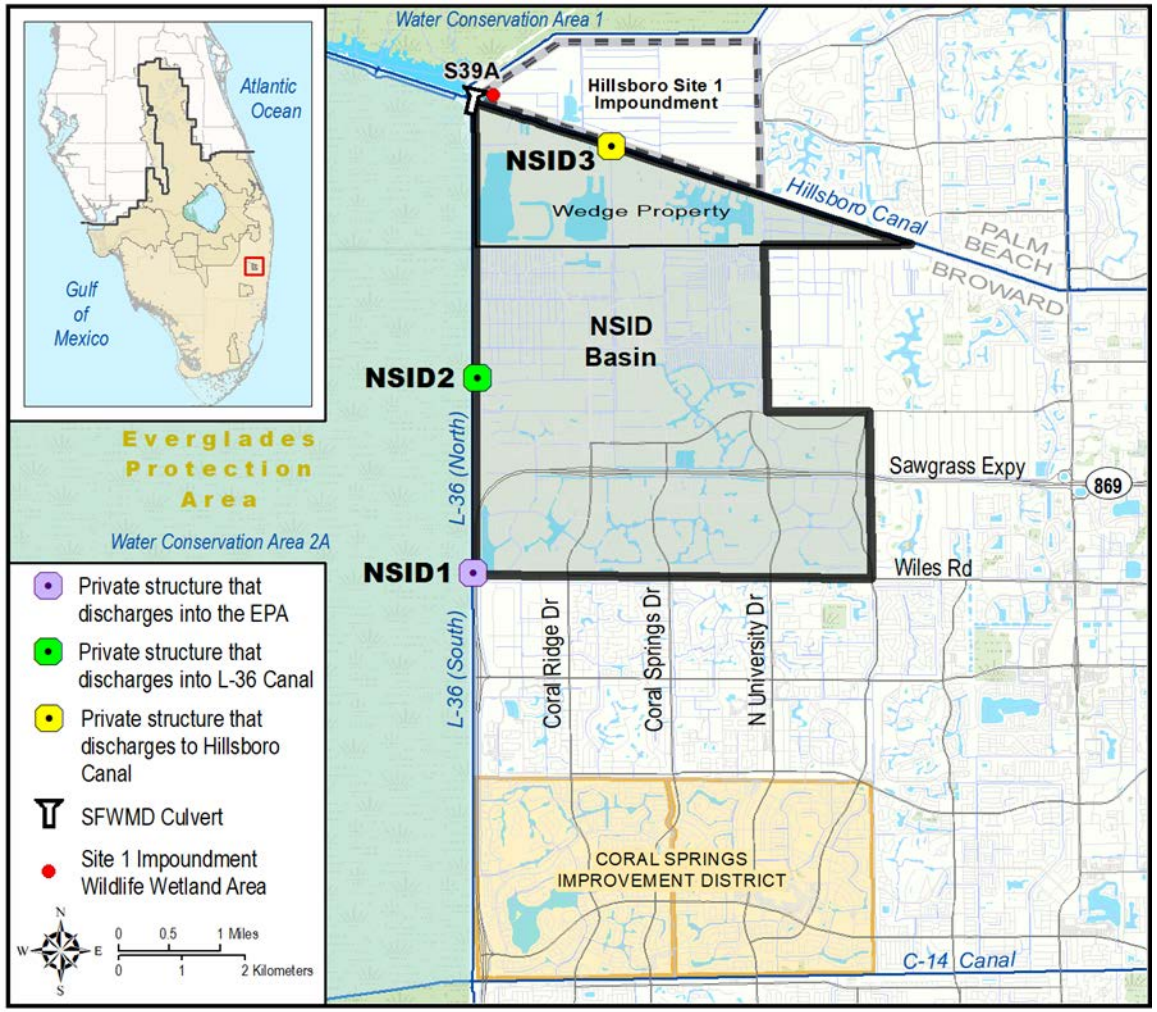
# Feeder Canal Basin

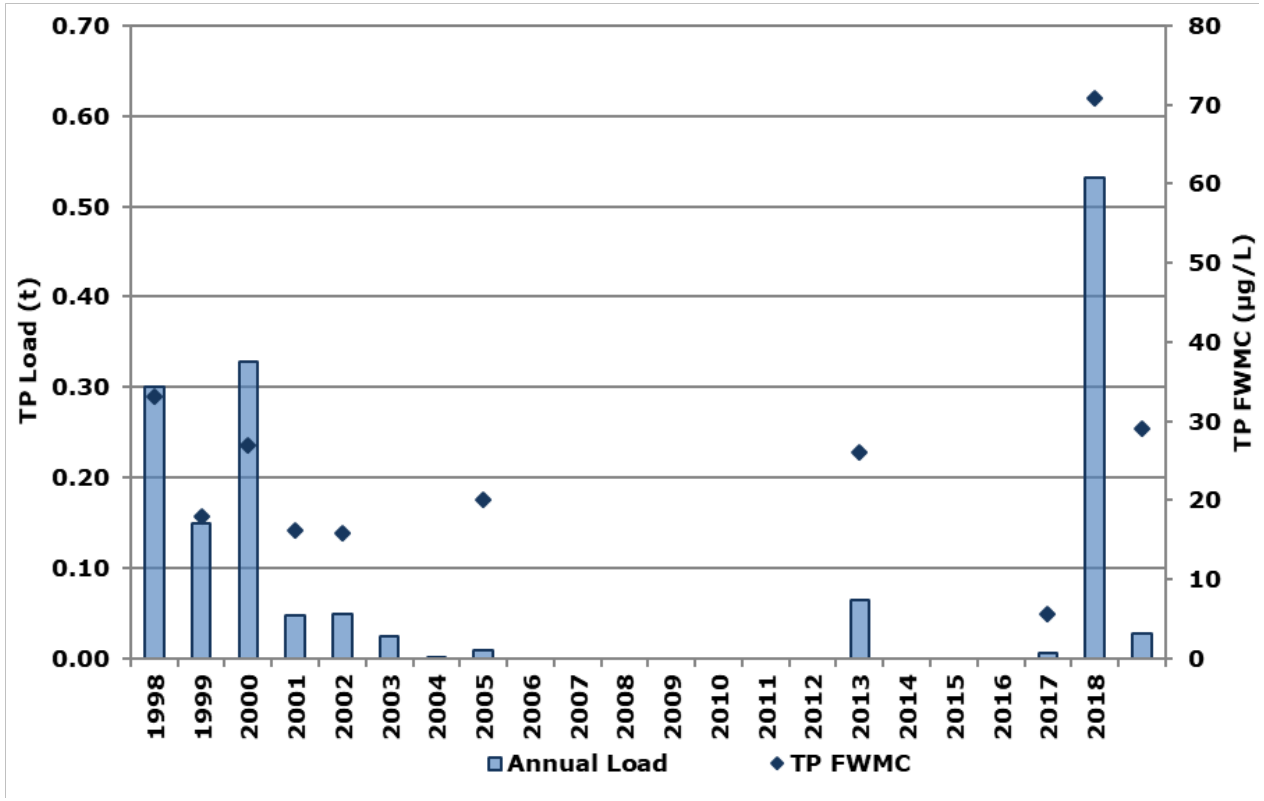



- CERP Big Cypress/L-28 Interceptor Modification (WERP) – Planning
- North Feeder: Required BMPs, water quality monitoring and TP goals under Environmental Resource Permits. Voluntary FAV tilling projects
- West Feeder: Landowners can enroll in the FDACS BMP program.

# NSID Basin




- Environmental Resource Permits to NSID including limited discharge and water quality reporting
- CERP Project: Hillsboro 1 Impoundment (on-hold)

# Summary

- Regulatory programs
- Cooperative agreements

  - Verification of implementation
  - Water quality monitoring to ensure effectiveness

- Program improvement

  - BMP research and demonstration projects
  - Data collection and supplemental evaluations

- Synergize benefits with regional and sub-regional projects

  - Restoration Strategies source control projects
  - CERP and others

# Additional Information

Everglades and Estuaries Protection Bureau

www.sfwmd.gov/sourcecontrols

www.sfwmd.gov/sfer

# Questions

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