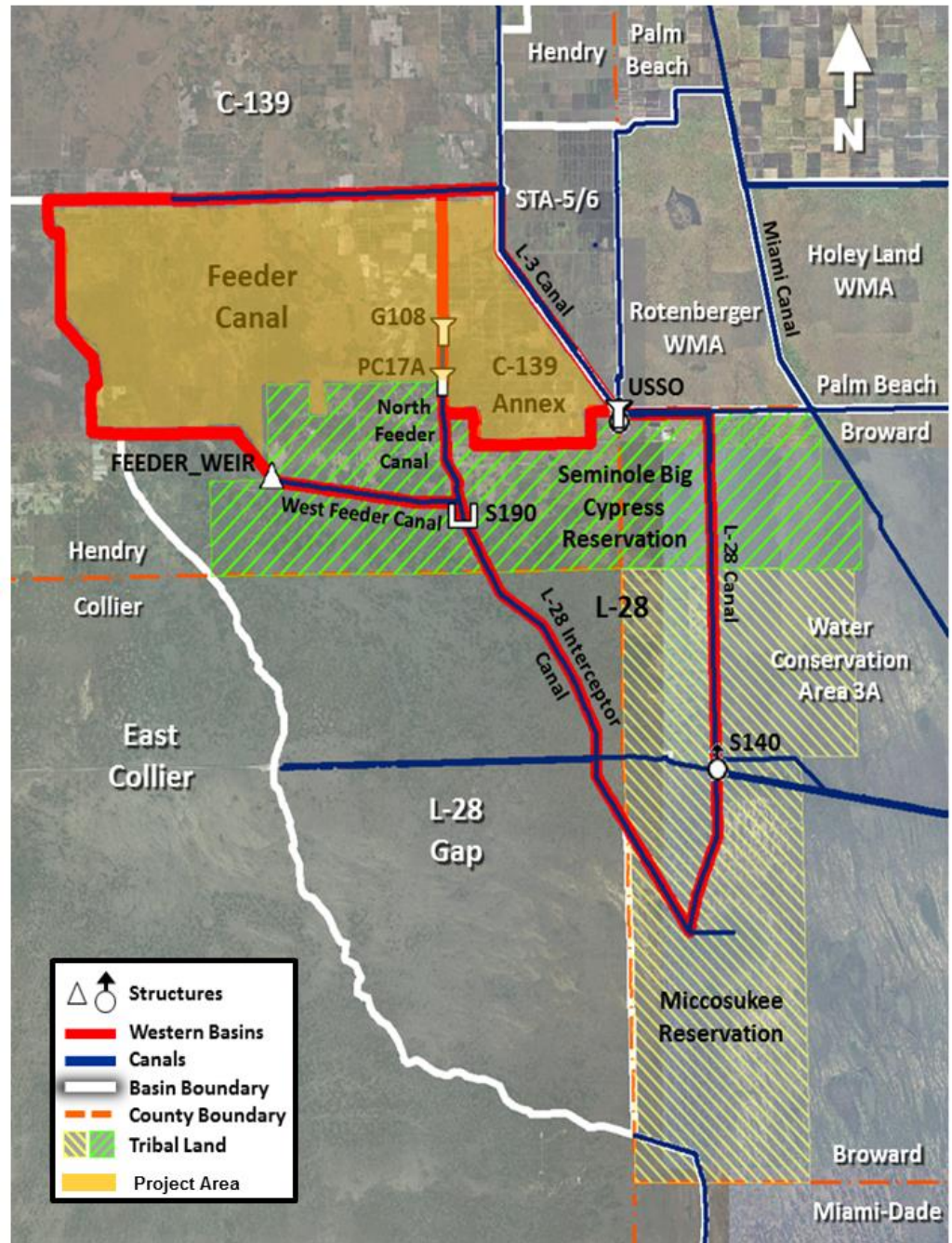
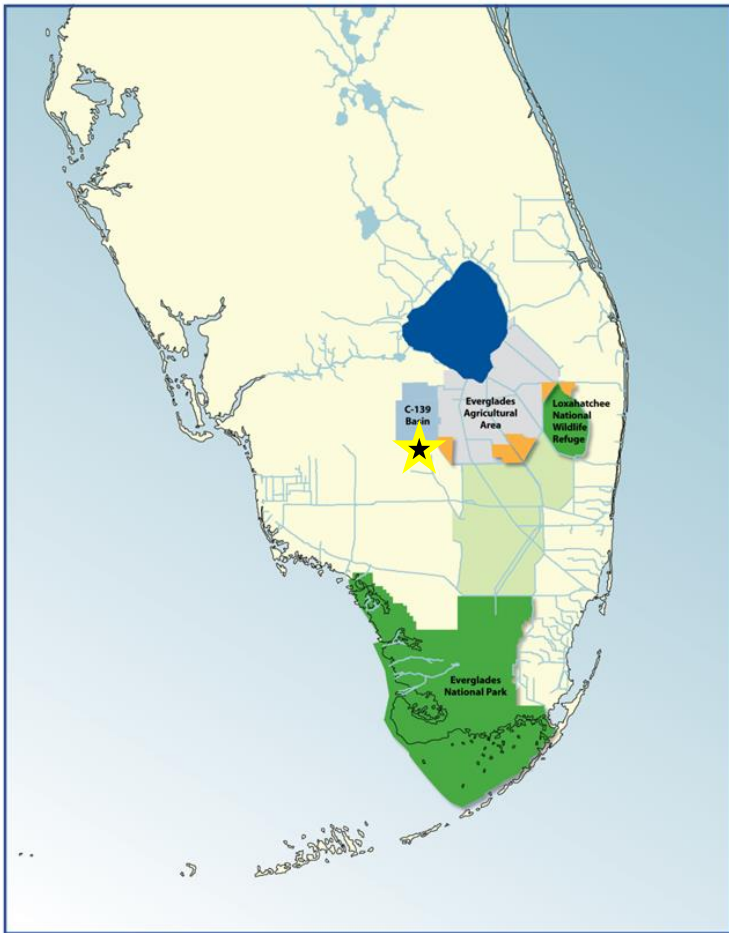




## **Overview of Western Basins Water Resource Evaluation Study**

Jennifer Leeds, Section Lead  
Everglades Policy and Coordination Office

## South Florida Water Management District Study Funded by Florida Department of Environmental Protection



# SFWMD Western Basins Water Resource Evaluation Study Focus

- Identify potential issues and opportunities
  - Challenges of improving the water quality coming from the Western Basins flowing into the Everglades
  - Importance of flowing water into the Western portions of the Everglades
  - Hydrologic enhancements
  - Operations
  - Data gaps
- Two areas of focus
  - C-139 Annex and USSO Structure
  - Feeder Canal Basin upstream of the Feeder Weir (West Weir) and PC-17A



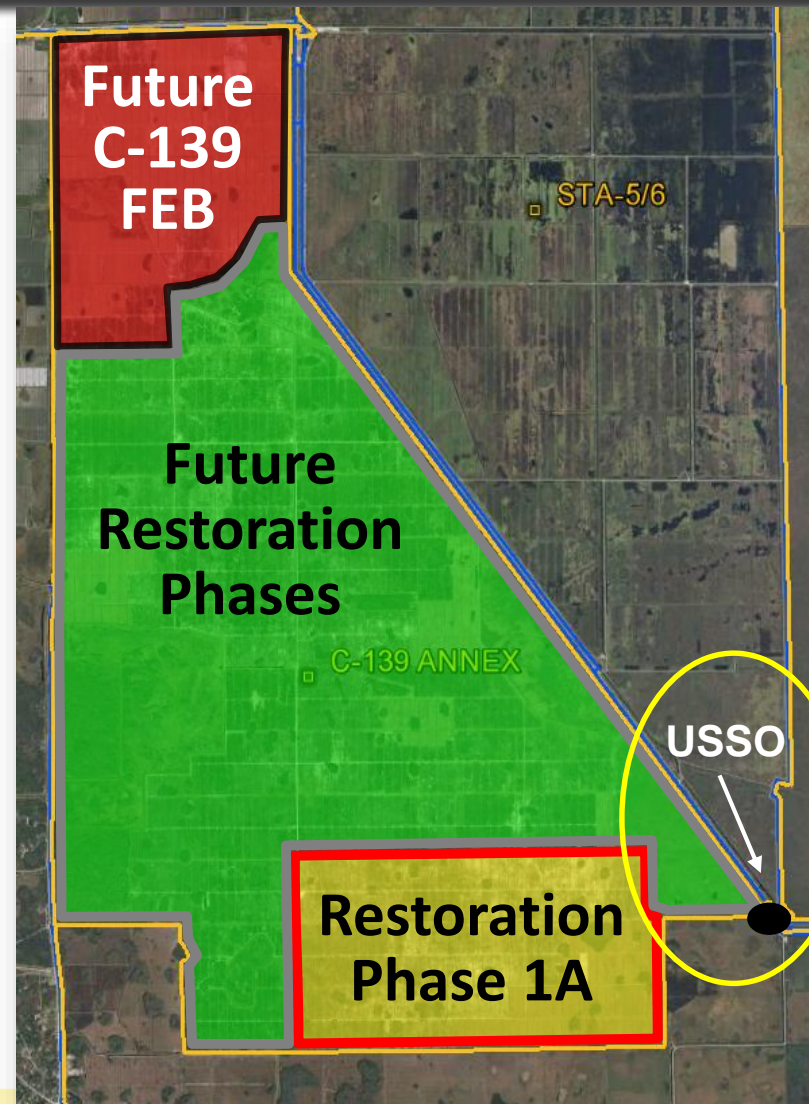
# SFWMD Western Basins Stakeholder Engagement

- Key to study success and identification of best potential solutions
  - Local landowner Stakeholder meetings for input and site visits
  - Miccosukee Tribe
  - Seminole Tribe
  - Other State and Federal agencies
    - FDACS
    - NRCS



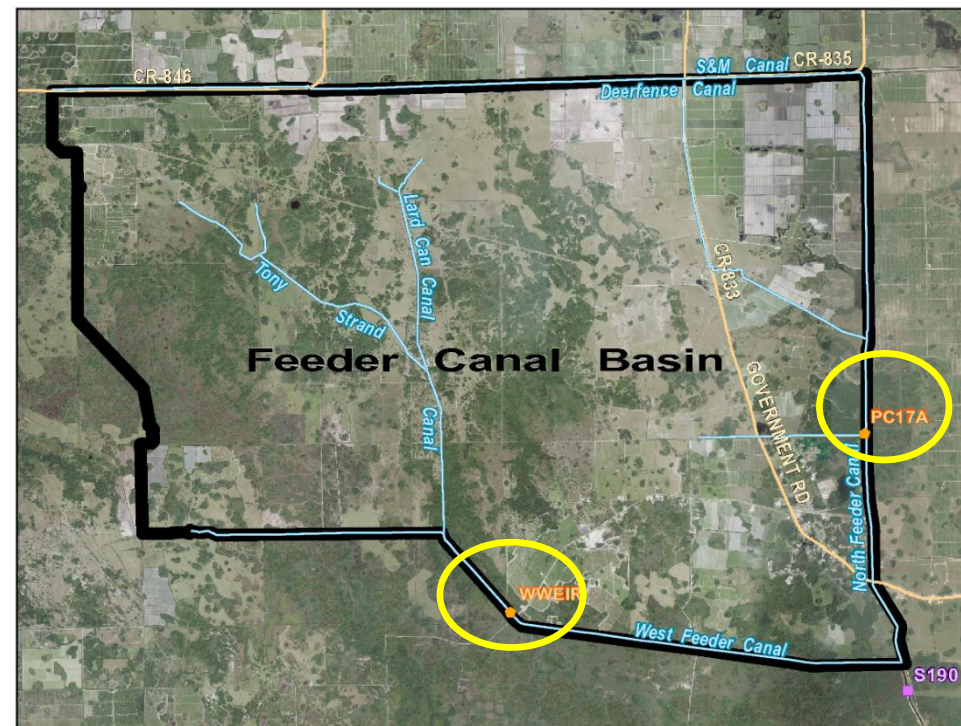
# SFWMD Western Basins C-139 Annex Restoration – Scope

- Total Project Area ~ 17,275 acres
  - Restoration area 14,400 acres
  - FEB 2,875 acres
- Restoration Phase 1
  - 3,700 acres
  - Construction through 2017
- Restoration Phase II
  - ~10,700 acres
  - Construction 2018 - 2022
- C-139 FEB
  - ~ 11,000 ac-ft
  - Construction 2018 - 2024



# SFWMD Western Basins Feeder Canal Basin – Scope

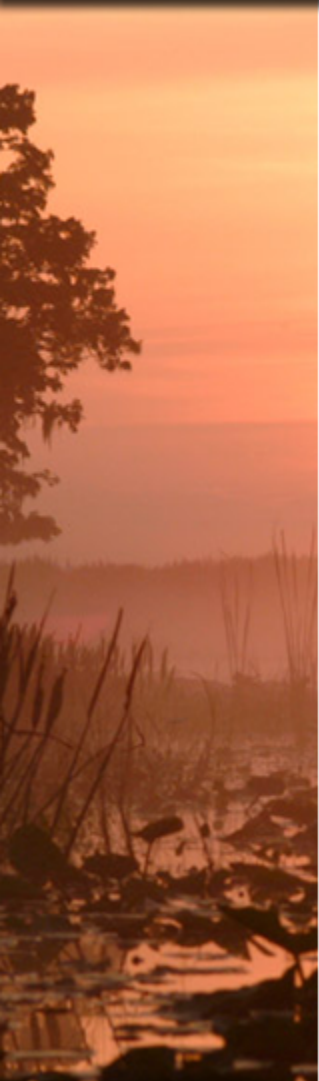
- Upstream of the Feeder Weir (West Weir) and PC-17A
  - Evaluate existing information and data
  - Fill key data gaps
  - Evaluate opportunities and identify potential projects to improve water quality



# Western Basins Deliverables

## 2.1.3 Northern Reach Assessment and BMP Implementation

- Collected and reviewed all previous studies, reports and available data
- Land Characteristics
  - Soil, topography, drainage
- Water Resource Inventory
  - Hydrography, hydrogeology, regional and local water control structures, farm scale AGI's, monitoring data (rainfall, ET, SW, GW)
- Regulatory Activities
  - BMP implementation
  - Data gaps



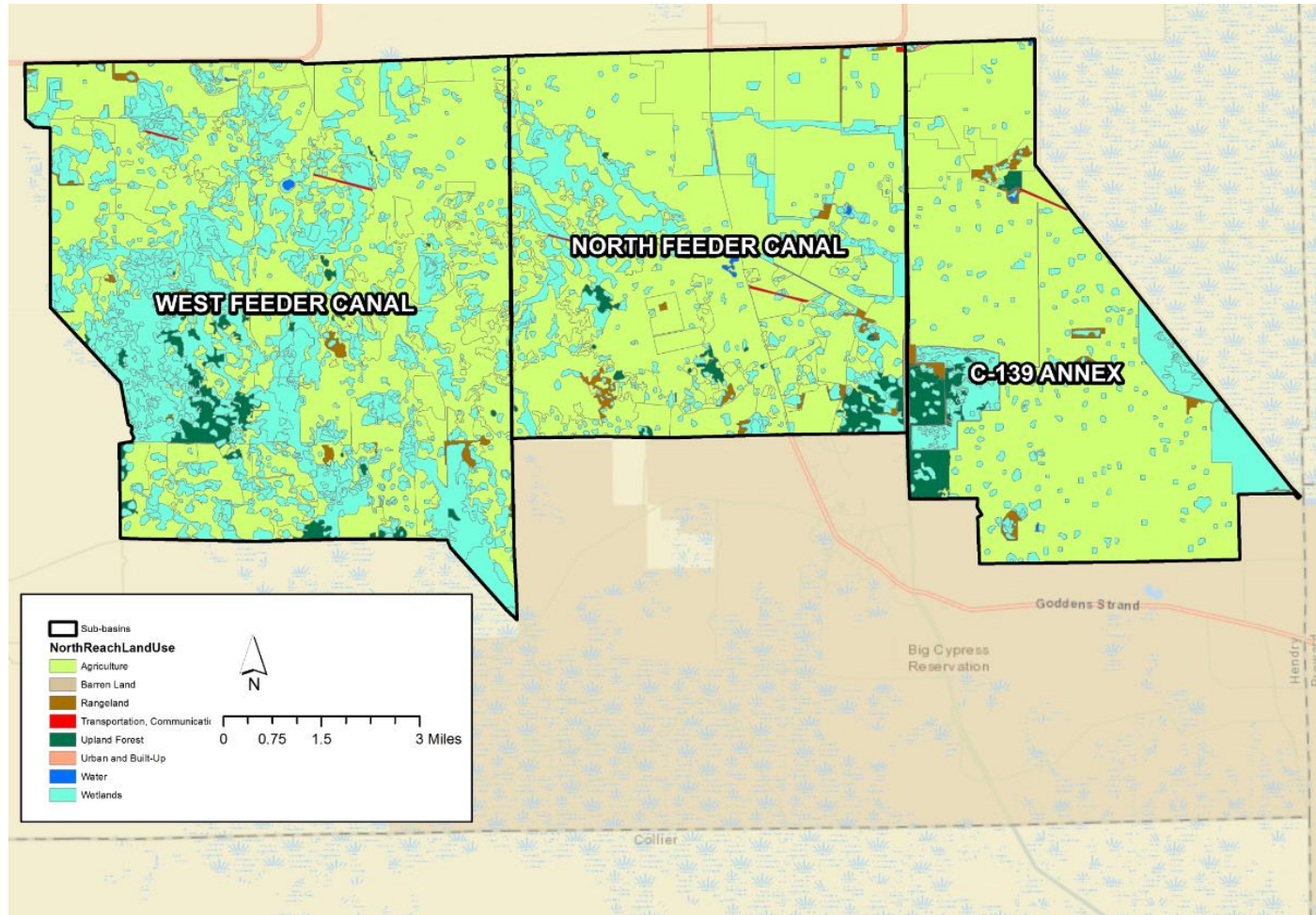
# Land Use in Feeder Canal Basin and C-139 Annex

Agriculture: 69.5%  
(Improved pasture, citrus and row crops)

Wetland: 27%

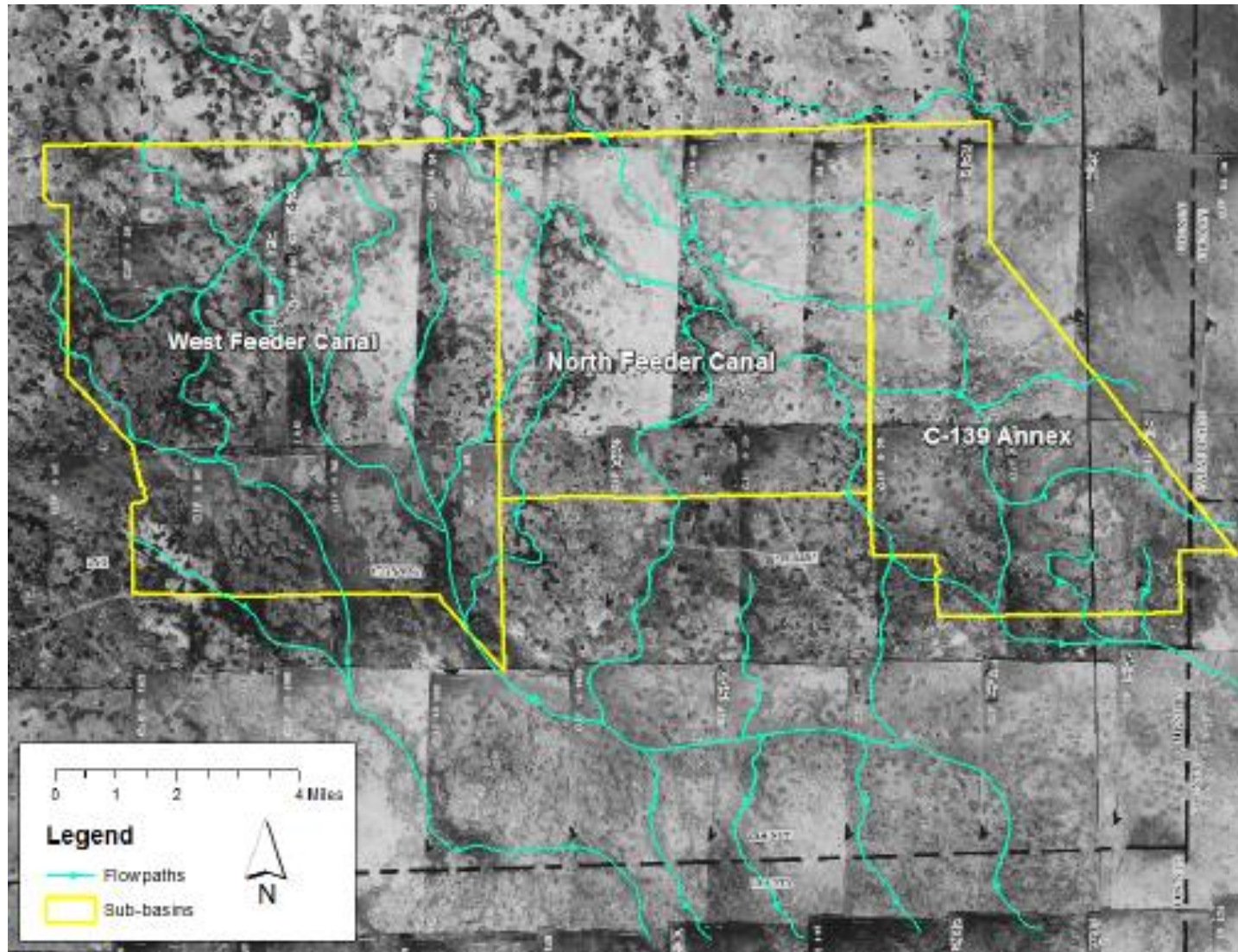
Upland forest: 2.6%

Rangeland: 1%

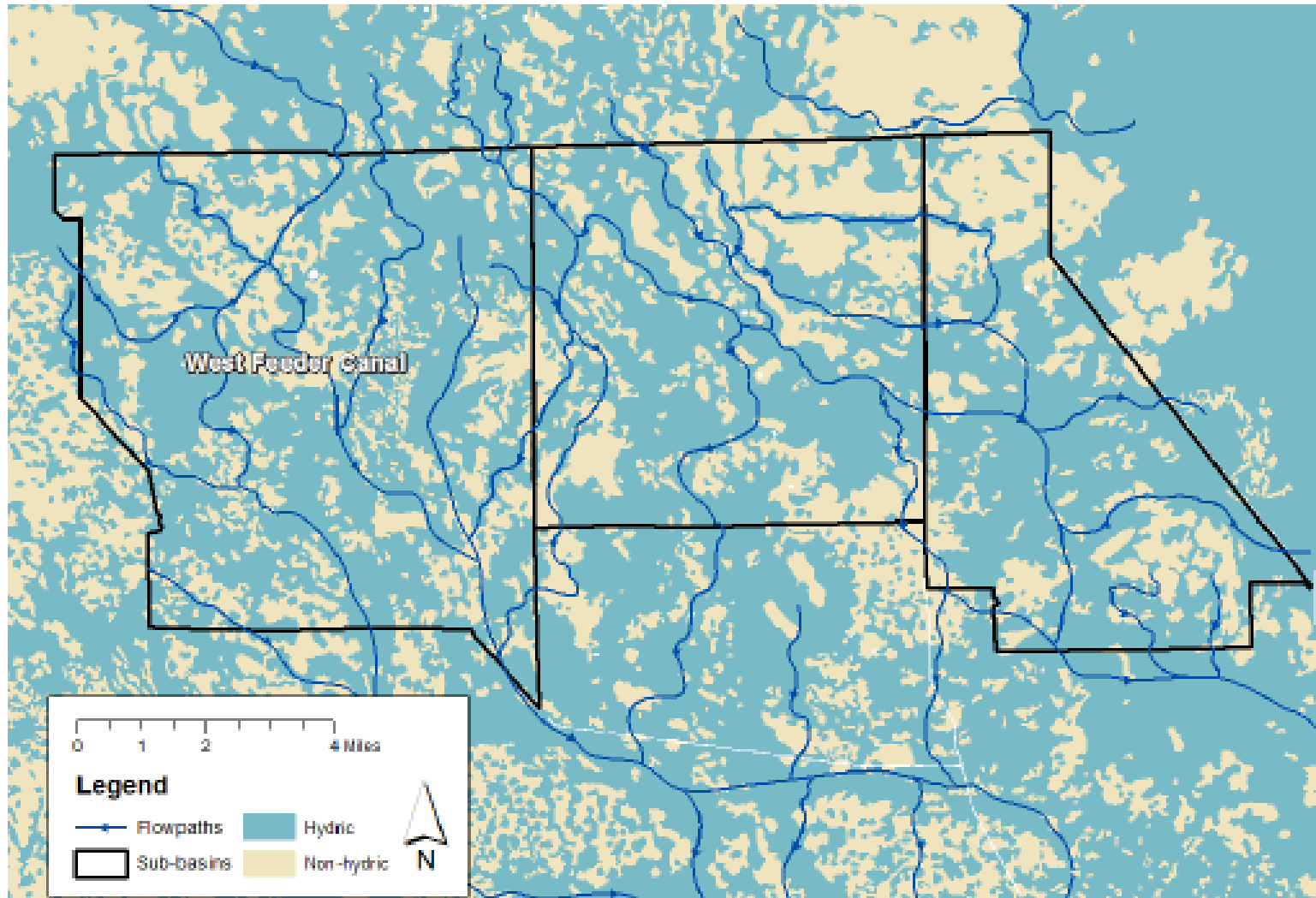




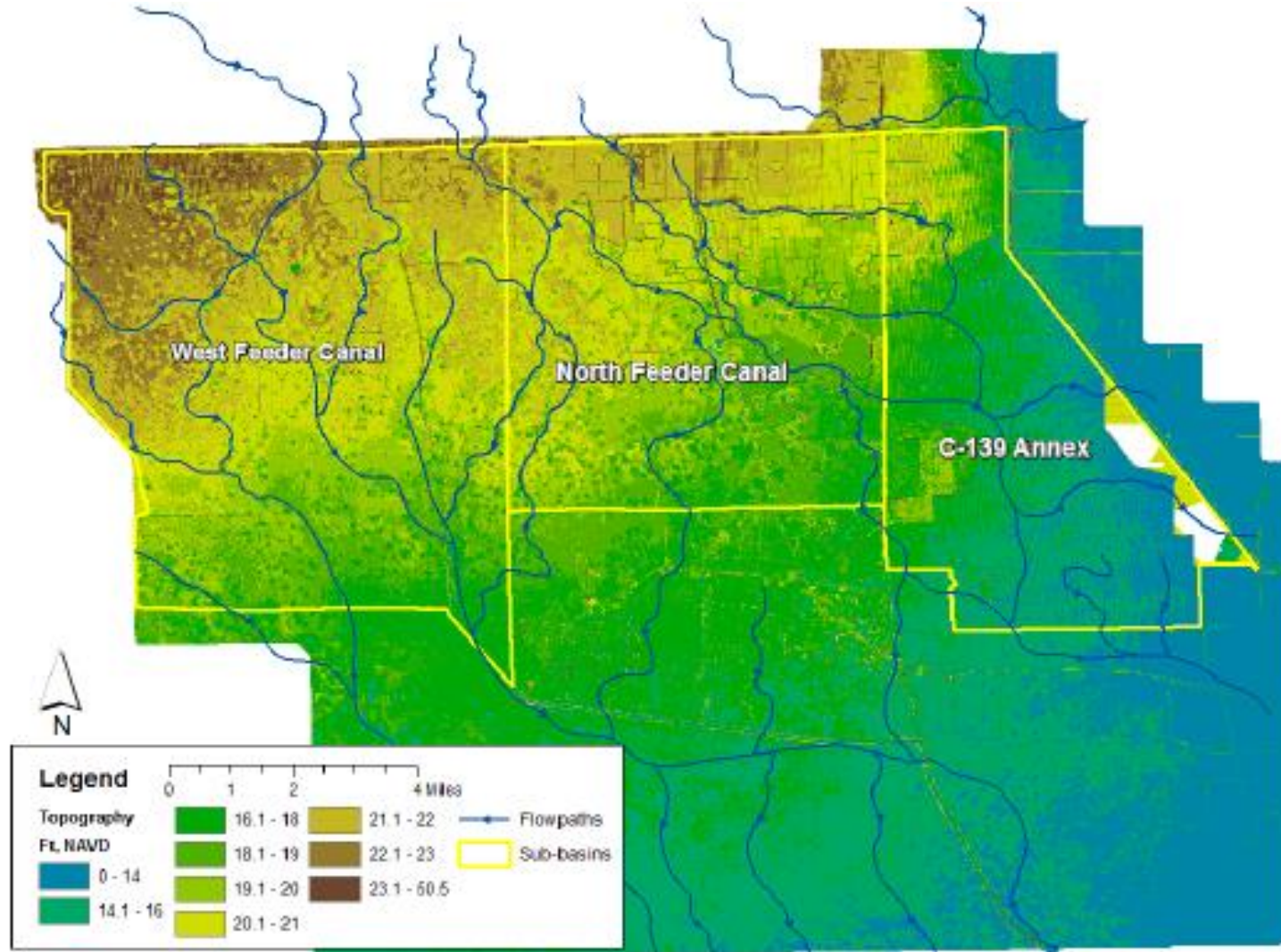
# Historic Flow path on 1940's Aerial



# Historic Flow path on Soil Hydrology



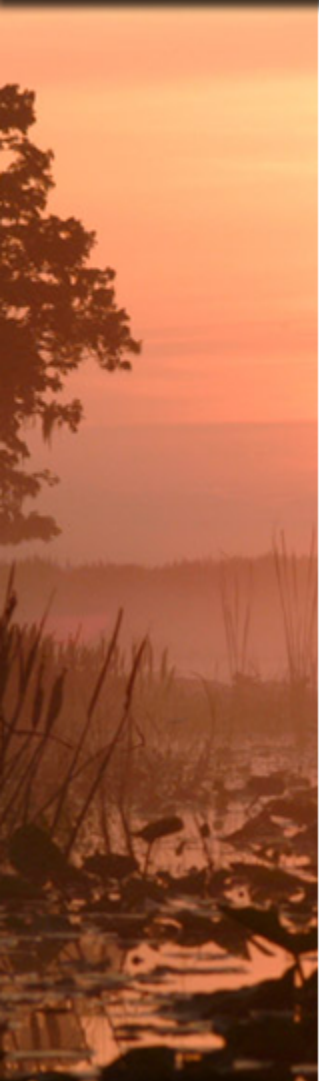
# Historic Flow Path on LiDAR



# Western Basins Deliverables

## 2.2.3 Final Landowner BMP's and Local Structural Improvements

- Historic and existing conditions
  - Flow patterns
  - Water quality (West Weir, PC-17A, USSO)
- Water quality improvement alternatives
  - Additional BMP's, structural improvement alternatives, research studies
- Sub-regional water quality improvement projects
  - Initially proposed eight, screened to six for further analysis



# Western Basins Deliverables

## 3.3.1 Sub-Regional Water Quality Management Measures Evaluation

- Diverting discharges from North Feeder Canal into C-139 Annex Pond 3
- Replace PC-17A (option to automate, adjust operations)
- Degrade southern bank of Wingate Mill Canal allowing for sheetflow in L-28 Gap Basin
- Divert water from south Boundary Canal to the south possibly into existing AGI's
- Utilize the C-139 Annex Flow Equalization Basin
- Sub-regional detention storage and treatment facilities (FAVT and FEB)



# Western Basins Deliverables

## 5.3.3 C-139 Annex Water Quality Monitoring Report

- Existing conditions vs. fully restored site conditions
- Modeled using WAM
- Anticipated percentage range in water quality improvement of total phosphorus concentrations at USSO structure as a result of the fully implemented restoration effort



## SFWMD Western Basins Next Steps

- Contract end date is November 2016
- August 30 - Finalize the Potential sub-regional water quality management measures technical memorandum
- September - Final calibration and technical report on MikeShe/Mike 11 integrated SW/GW/P Model for the Feeder Canal Basin
- October – Nine Point Basin Watershed Management Plan
- November – Alternative, scenario analysis and modeling runs
  - Integrated model runs on 10-year POR for various alternatives



**Questions?**