



U.S. Fish & Wildlife Service

Arthur R. Marshall

Loxahatchee National Wildlife Refuge

Summary and Future Plans



University of Louisiana

Institute of Coastal Ecology and Engineering

Summary

- Dual Modeling Approach:
 1. A completely mixed flow (CMF) mass balance model
 2. MIKE-FLOOD/ECOLAB spatially explicit model

Summary

- Migrated from Excel + WASP to STELLA
- Cluster analysis utilized to improve CMF model structure
- Refining CMF structure to capture dominant spatial variation
- Model results of TP using ECO Lab compares well with observations
- Availability of adequate TP boundary conditions were key to the quality of the model results

Summary

- Frequency of measurements at the boundaries directly impact the quality of modeling WQ constituents
- To model the marsh zone adjacent to rim canal, we need
 - Refined topographic data
 - Updated detailed vegetation information
 - Higher model resolution
- Investigate a numerical mechanism to mimic the bottom sediment entrainment at low stages and/or high velocities in rim canal

Workshop #3

- **Tentative Date: January 2008**
- **MIKE FLOOD & ECO Lab**
 - TP
 - SO4
 - CL
- **CMF (STELLA)**
 - Reconfigured cell-structure
 - TP
 - SO4
 - CL
- **Surface-Groundwater interaction: MIKE - MODFLOW**