

# Performance Measures and Adaptive Management in the Everglades



**Rebekah Gibble, Ph.D.**

**Senior Wildlife Biologist**

**A.R.M. Loxahatchee National Wildlife Refuge**

**Donatto Surratt, Ph.D.,**

**Wildlife Ecologist**

**Everglades National Park**

**INTECOL**

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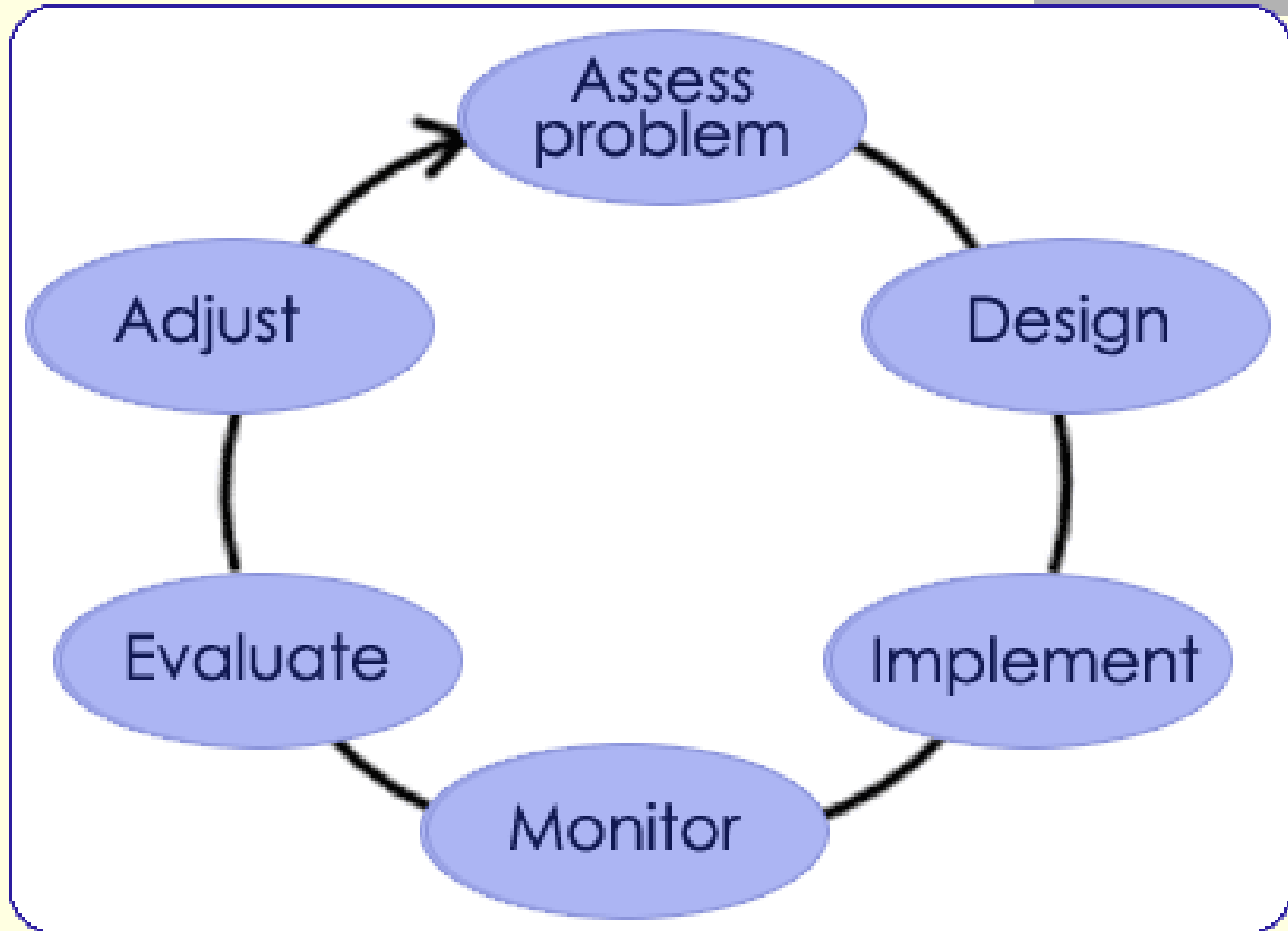


# Components of Everglades System Management:

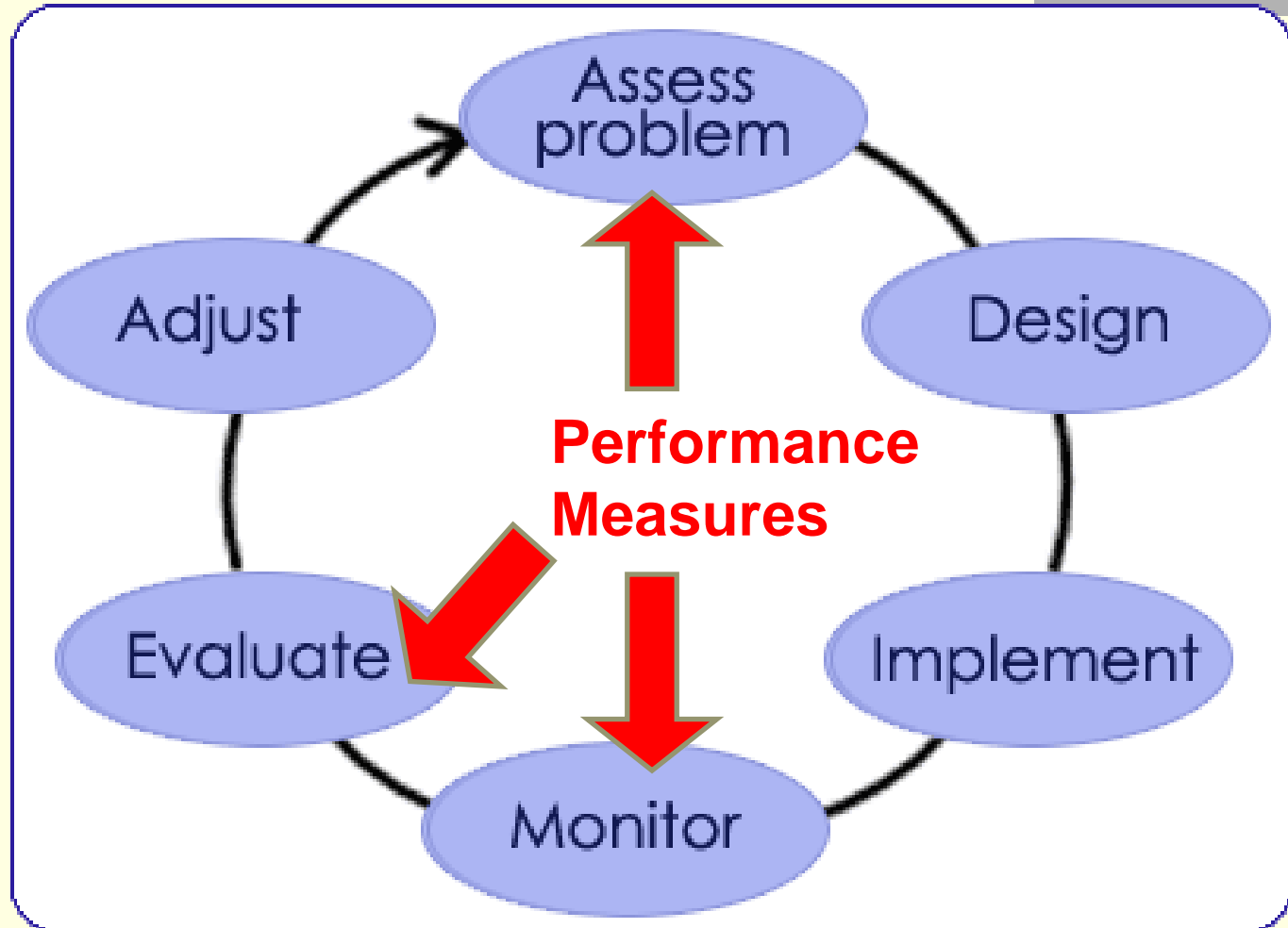
- Hydrology
- Water quality
- Biology
- Flood protection
- Water supply



# Adaptive Management (AM)



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# Adaptive Management

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## AM components include:

- **Evaluation of proposed plan performance**
  - Estimates system-wide performance
  - Determine 'acceptable' or 'unacceptable' outcomes of proposed projects
- **Assessment following implementation**
  - Monitor completed projects using Performance Measures
  - Track changes in the state of the natural and human systems
  - Incorporate into adaptive management



# Tools for Evaluating Projects

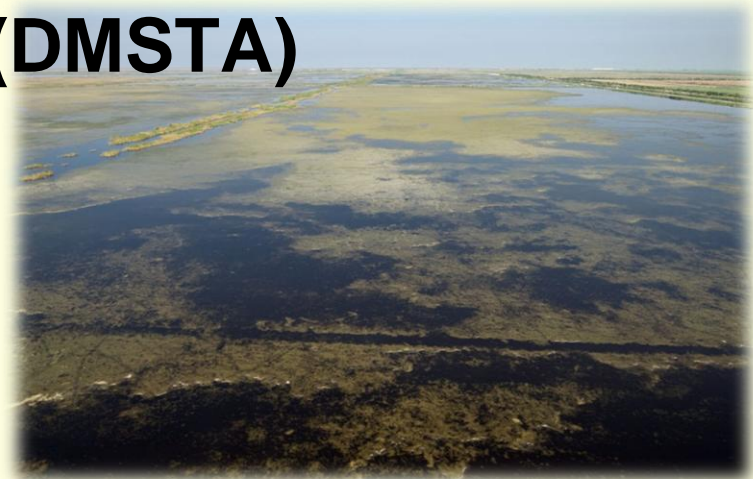
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- **Simulation modeling**
  - NSM
  - HSIs
  - DMSTA
- **Best available science**
- **Best professional judgement**
- **Weight-of-evidence**



# Evaluation Examples

- **Natural System Model (NSM)**
  - Develop interim goals/targets for regional aquatic prey populations
- **Habitat Suitability Indices (HSIs)**
  - Region-specific periphyton distribution
- **Dynamic Model for STAs (DMSTA)**
  - STA expansion planning to reduce phosphorus levels



# Adaptive Management Context

- **Linked to AM through assessment PMs**
  - **Iterative process**
    - **Use models to evaluate proposed projects in the context of PMs**



- **Examples**

- **Site 1**
- **DMSTA tool applied to assess the feasibility of proposed STA expansion to achieve TP targets**





# Strategies for Assessment

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- **Establish baseline conditions**
- **Determine detectability of parameters of interest**
- **Assess ecosystem performance – multiple levels**
- **Assess hypotheses**



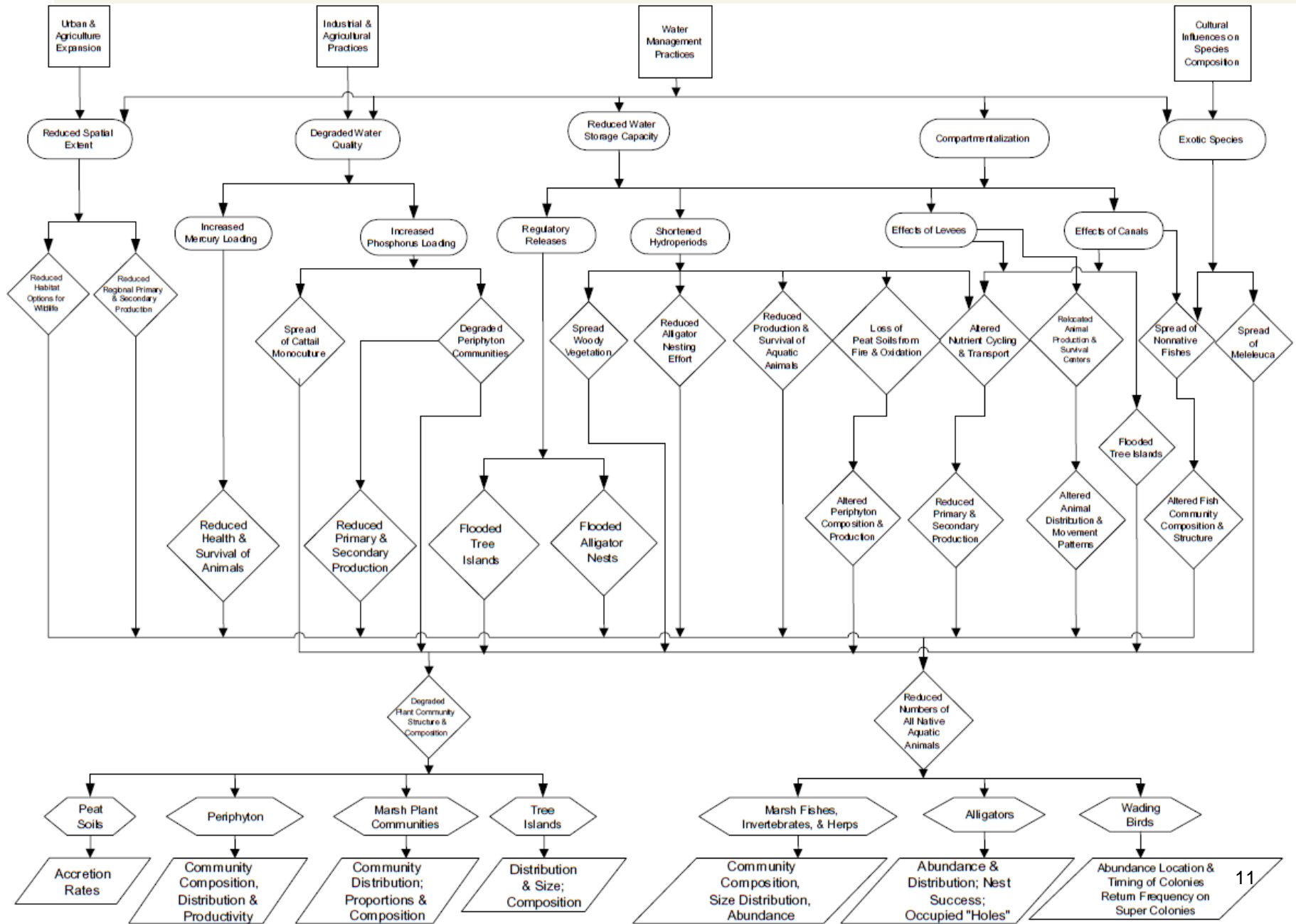
# Strategies for Assessment

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- **Incorporate interim goals and targets**
- **Possibly evolve/adapt the monitoring process**
- **Evaluate if corrective actions in management are necessary**

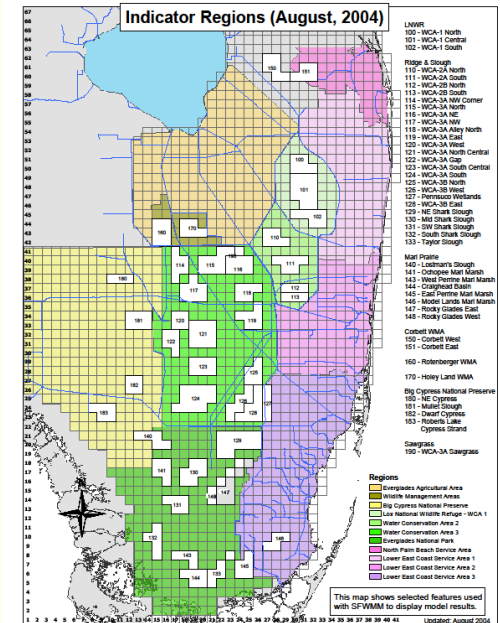


# Everglades Ridge and Slough CEM – Ogden 2005



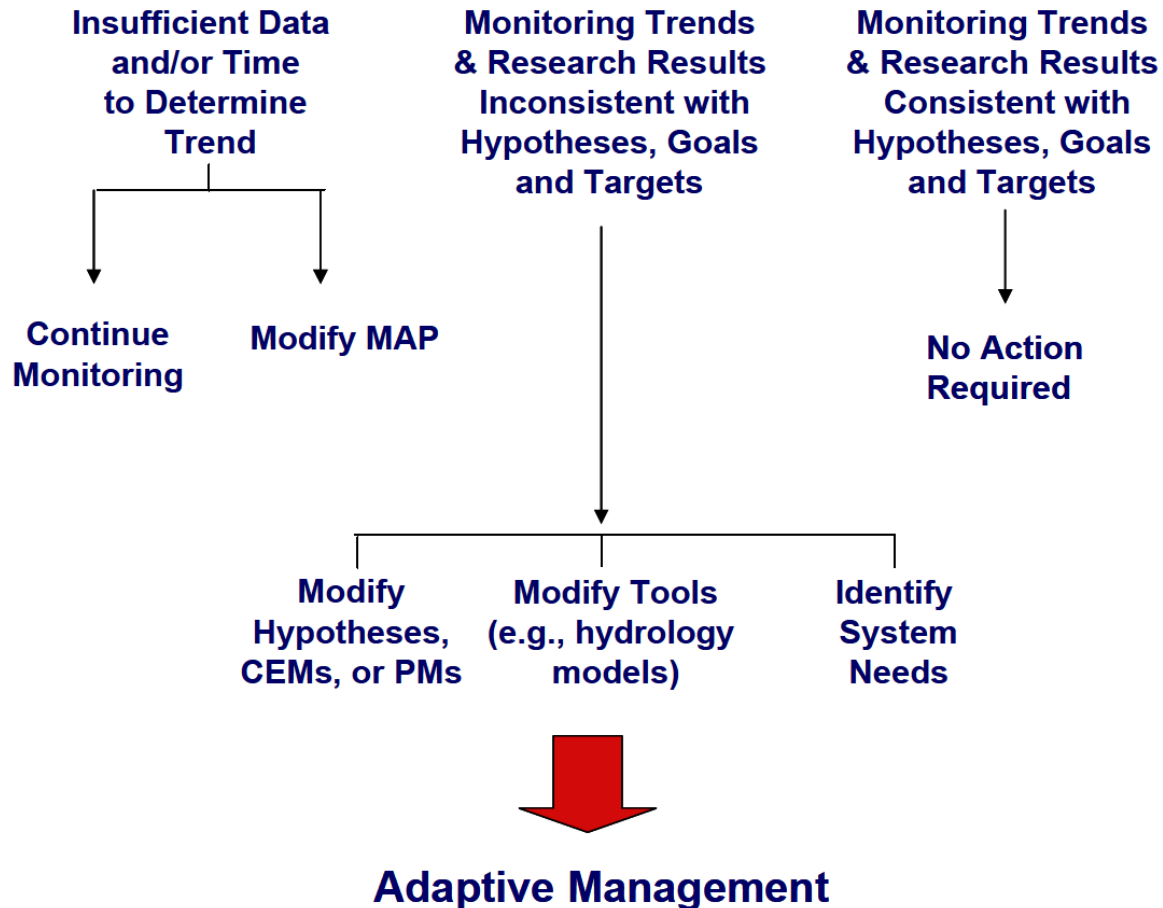
# Assessment PMs

- Select parameters monitor (from CEM):
  - Plant community structure and composition
  - Abundance of aquatic native wildlife
- Interim goals established
  - Status check toward long-term goals at 5-year intervals



# Adaptive Management Context

## Synthesis and Interpretation Framework



***Thank you.....***

**Questions?  
Comments?**

# References

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- ***Assessing the Response of the Everglades Ecosystem to Implementation of the Comprehensive Everglades Restoration Plan Available at:***  
[http://evergladesplan.org/pm/recover/recover\\_docs/aat/rec\\_prelim\\_guid\\_dec\\_2004.pdf](http://evergladesplan.org/pm/recover/recover_docs/aat/rec_prelim_guid_dec_2004.pdf)
- **CERP System-wide Performance Measure Report Development and Application of Comprehensive Everglades Restoration Plan System-wide Performance Measures 17 Oct 2007- Available at:**  
[http://evergladesplan.org/pm/recover/perf\\_systemwide.aspx](http://evergladesplan.org/pm/recover/perf_systemwide.aspx)

