Performance Measures and Adaptive Management in the Everglades

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Components of Everglades System Management:

- Hydrology
- Water quality
- Biology
- Flood protection
- Water supply
Adaptive Management (AM)

http://www.doi.gov/archive/initiatives/AdaptiveManagement/whatis.html
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Performance Measures

Assess problem

Adjust

Design

Evaluate

Implement

Monitor
Adaptive Management

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

- 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

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

Strategies for Assessment

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

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

- Insufficient Data and/or Time to Determine Trend
  - Continue Monitoring
- Monitoring Trends and Research Results Inconsistent with Hypotheses, Goals and Targets
  - Modify MAP
- Monitoring Trends and Research Results Consistent with Hypotheses, Goals and Targets
  - No Action Required
    - Modify Hypotheses, CEMs, or PMs
    - Modify Tools (e.g., hydrology models)
    - Identify System Needs

Adaptive Management
Thank you......

Questions?
Comments?
References
