EVALUATION OF RESTORATION BENEFITS FROM PROJECT PLANS

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National Conference on Ecosystem Restoration
New Orleans, LA
August 30, 2018
THE YELLOW BOOK

- Largest environmental restoration program in history
- Ecological restoration via restoration of natural hydrologic flows
- 68 restoration components
- Signed into law: December 11, 2000
- Implementation Guidance
  - WRDA 2000
  - 6 Draft Guidance Memoranda (2007)
CERP: GUIDING RESTORATION

CERP Goals and Objectives

1. Enhance ecological values.
   A. Increase the total spatial extent of natural areas.
   B. Improve habitat and functional quality.
   C. Improve native plant and animal species diversity.

2. Enhance economic values and social well-being.
   A. Increase availability of fresh water (agricultural/municipal and industrial).
   B. Reduce flood damages (agricultural/urban).
   C. Provide recreational opportunities.
   D. Protect cultural and archaeological resources and values.
RECOVER AND THE PLANNING PROCESS

SCOPING
- ALTERNATIVES
  MILESTONE
  Vertical Team
  concurrence
  on Array of
  Alternatives

ALTERNATIVE FORMULATION & ANALYSIS
- TENTATIVELY
  SELECTED PLAN (TSP)
  MILESTONE
  Vertical Team
  concurrence on TSP

FEASIBILITY-LEVEL ANALYSIS
- AGENCY
  DECISION
  MILESTONE
  Agency
  Endorses
  Recommended
  Plan

CHIEF’S REPORT
- CIVIL WORKS
  REVIEW BOARD
  Release for State &
  agency Review

CHIEF’S REPORT

BUILDING STRONG.
INITIAL INTERACTIONS WITH THE PDT

1. Input to Project Management Plan Development

2. RECOVER Overview
   a. System-wide approach
   b. Project Goals/Objective relation to CERP
   c. Performance Measures

3. System-wide Model Assumptions
“Quantitative indicators of conditions in natural and human systems that have been selected as targets for restoration.”

Criteria:

1. Exhibit change directly in relation to CERP.
2. Tied into a Conceptual Ecological Model.
3. Be a strong indicator of ecosystem health or stress on the system.
4. Be an indicator of an important ecological process, ecological structure, or major environmental change.
5. Be a regional indicator of CERP performance (versus a project-level measure).
PERFORMANCE MEASURE APPLICATION

Background/Justification
• Rely on estuarine environments characterized by appropriate salinity regimes and freshwater inflows.

Restoration Goal
• Growth and survival increase when salinity fluctuates below 20 ppt in shoreline, pond, and creek habitats of Everglades coastal wetlands

Evaluation Metric
• Crocodile growth & Survival Salinity Index

Scoring
• Salinity < 20 ppt = 1
• Salinity ≥20 ppt but <30 ppt = 0.6
• Salinity ≥30 ppt but <40 ppt = 0.3
• Salinity ≥ 40 ppt = 0
### Restoriation Targets

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Formula for cells using 8/1/1965 Joe Bay as an example: =IF(E2>20,1,IF(E2<30,0.6,IF(E2<40,0.3,IF(E2>=40,0))))
EXAMPLES OF INDICATORS
CONSISTENCY REVIEW

Purpose:
1. Ensure consistency with CERP, RECOVER PMs, and system-wide approach.
2. Are the correct metrics being used? Will the resultant data properly assess project impacts?

Components:
1. Introduction: includes information and documents used for consistency assessment.
2. Goals/Objectives Consistency.
3. Performance Measure Consistency.

Correspondence:
1. RECOVER review submission to PDT.
2. PDT provides to Project Eco-subteam.
3. Eco-subteam addresses RECOVER review.
4. Responses provided to RECOVER review team.
5. Follow-up discussions as needed.
Purpose:
1. Evaluate alternative performance.
2. Assess benefits of each alternative.
3. Provide recommendations to PDT.
4. Alternative recommendation for TSP.

Sources of Information:
1. Modeling Results
2. Ecological Assessment Tools
3. Best Available Scientific Knowledge

Process:
1. RECOVER review submission to REC.
2. REC provides feedback to Review Team.
3. RECOVER review incorporated into PIR/EIS.
4. RECOVER draft PIR/EIS sections submitted to PDT.
5. Follow-up discussions as needed.
EVALUATION EXAMPLE: WERP

WERP: Roughly the size of Rhode Island
EVALUATION EXAMPLE: WERP
### Northern Estuaries (NE):

1. **Performance Measures**
   - NE Salinity Envelope
   - Oysters
   - SAV

2. **Ecological Planning Tools**
   - Salinity in Florida Bay
   - American Crocodile Growth and Survival

3. **Additional Hydrological Model Output**
   - Transect Flows

### Southern Coastal Systems (SCS):

1. **Performance Measures**
   - Salinity in Florida Bay
   - American Crocodile Growth and Survival

2. **Additional Hydrological Model Output**
   - Transect Flows

### Greater Everglades (GE):

1. **Performance Measures**
   - Inundation Duration
   - Vegetation Communities
   - Fire Risk
   - Soil Oxidation/Drought Intensity

2. **Ecological Planning Tools**
   - Cape Sable Seaside Sparrow (Sparrow Helper)
   - Marl Prairie Hydrologic Suitability Model
   - Wading Birds (WADEM)
   - Alligator Production Probability
   - Small Freshwater Fish Density Model
   - Apple Snail Population Model

3. **Additional Hydrological Model Output**
   - Dry Events in Northeast Shark River Slough
   - Transect Flows
RECOVER EVALUATION EXAMPLE

GULF OF MEXICO

ATLANTIC OCEAN

Little Madeira Bay - WFWO

Garfield Bight - WFWO

RECOVER Southern Coastal Systems
EMP Marine Monitoring Network and Florida Bay Zones of Similarity

16
Florida Bay Salinity PM: Overlap Metric

Florida Bay Salinity PM: High Salinity Frequency Metric
6. Review of adaptive management and monitoring plans.
   • Consistency, complimentary, and compatible with RECOVER’s Monitoring and Assessment Plan.
   • Identify duplication of monitoring efforts or reliance on RECOVER monitoring
   • Identify potential information that could be incorporated into future system-wide assessment reports.

7. Review of the project operating manual.
   • Optimize performance of each project feature
     • CERP
     • System-wide restoration goals
SUMMARY

• Everglades restoration guided by “Yellow Book” containing 68 restoration components.
  • Enhance ecological values.
  • Enhance economical values and social well-being.

• RECOVER has 7 interaction points with the PDT during a project’s planning phase.
  • RECOVER members participate on PDT.

• Key interactions
  • Consistency Review
    • Ensures consistency with CERP, RECOVER PMs, and system-wide approach.

• System-wide (Regional) Evaluation
  • Evaluates alternative performance.
  • Assesses benefits of each alternative.
  • Provides RECOVER recommendation for TSP
Questions?