

South Florida Ecosystem Restoration Task Force

Science Coordination Group

Task Force Update
September 21 – 22, 2006



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Report on Priority SCG Tasks

1. System-wide Indicators

2. Plan for Coordinating Science



System-wide Indicators

➤ **TASK FORCE DIRECTIVE** – Develop a process for identifying and developing a suite of System-wide Indicators for restoration success using peer review and with opportunities for public input for the 2006 biennial report and strategic plan.

➤ **STATEMENT FROM THE PLAN FOR COORDINATING SCIENCE**

➤ “[Ensuring] that relevant scientific information is synthesized and *conveyed in formats that facilitate management decisions, and that this is done in a timely manner. This type of activity includes the development of metrics, such as indicators of restoration success and associated performance measures.*”



Task Force Strategic Plan Goals

- **Goal 1: Get the Water Right**
 - Hydrology
 - Water Quality
- **Goal 2: Restore, Preserve, and Protect Natural Habitats and Species**
 - Natural Habitats & Species
 - Control Invasive Species
- **Goal 3: Foster Compatibility of the Built and Natural Systems**
 - Use & manage land in a manner compatible with ecosystem restoration
 - Maintain or improve flood protection compatible with ecosystem restoration
 - Provide sufficient water resources for built and natural systems



Two Types of Indicators

- Ecological
 - Biological and Ecological Features
 - Assesses these “features” in response to environmental “improvements” & “benefits” as described in goals
- Compatibility
 - Some CERP & SFERTF projects relate to “built system” components (e.g. flood protection)
 - Assesses the ecological compatibility of these “built system” projects



Five Steps

1. Evaluate existing restoration efforts from various sources for indicators for possible application to the Task Force suite of system-wide indicators
2. Using established guidelines select relevant indicators for Everglades Ecosystem applicability, evaluate the list of Indicators for individual and collective value and coverage of Everglades' "FEATURES" i.e. ecosystem Regions, Characteristics, Trophic Interactions, and Functions
3. Identify "indicator gaps", and where feasible for the 2006 report, develop new indicators to fill identified gaps
4. Conduct an Independent Scientific Review of the suite of System-wide Indicators
5. Select final system-wide suite of indicators for the 2006 biennial report and develop indicator documentation and communication proposal and identify "indicator gaps" to be filled by 2008 or beyond



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Independent Scientific Review of Suite of Indicators

Jeffrey L. Jordan, Ph.D., Chair, U. Georgia

Joanna Burger Ph.D., Rutgers

JoAnn Burkholder, Ph.D., NC State

Robert Ward, Ph.D., Colorado State

Donald Kent, Ph.D., Community Watershed Fund



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Major Recommendations from ISR Panel Included in the 2006 Report

- Include a section that describes the scope of the System-wide Indicators Report
- Identify for which aspects of the restoration program performance is being judged
- Modify the existing list of 14 Indicators creating a list of 10 Indicators instead – **For 2006 Included Spoonbills in Wading Bird Group, Remainder moved to 2008 Timeframe**
- Modify the existing selection guidelines and add suggested guidelines
- Revise, modify and provide a fuller documentation to the 4-Steps used to select the indicators
- Revise “Stoplight Report Card” & improve communication approach



ISR Recommendations that will be considered for the 2008 System-wide Indicator Report

- Include a section that identifies and lists all of the other indicators evaluated but were not included and why
- Modify the existing list of 14 Indicators creating a list of 10 Indicators instead
- Add Mercury, Cattails, Contaminants, Exotic Animals to Indicators
- Develop an “Integrated Index of Ecological Health or Integrity”
- Establish a Bureau of Ecological Information for Restoration
- Statistically test data correlations among the indicators to determine if the indicators are integrative of ecological conditions
- Use alternative ‘communication tools’ incorporating line or column graphs with goal lines and timeframes
- Several recommended modifications to individual indicators
- Address long-term research needs identified in individual indicators to improve use and reliability of indicators



2006 Indicators

1. Fish & Macroinvertebrates
2. Wading Birds (Woodstork, White Ibis & Roseate Spoonbill)
3. Florida Bay Submerged Aquatic Vegetation
4. Florida Bay Algal Blooms
5. Crocodylians (Alligators & Crocodiles)
6. American Oysters
7. Periphyton-Epiphyton
8. Juvenile Pink Shrimp
9. Lake Okeechobee Littoral Zone
10. Invasive Exotic Plants
11. Water Volume
12. Salinity Intrusion in the Biscayne Aquifer
13. Flood Protection – C-111 Basin



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- ✓ **2006 System-wide Indicator Final Report**
- ✓ **2006 Independent Scientific Review Report**

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Plan for Coordinating Science

- **TASK FORCE DIRECTIVE** - “Draft a science coordination plan that tracks and coordinates programmatic-level science and other research, identifies programmatic level priority science needs and gaps, and facilitates management decisions”



Draft Plan for Coordinating Science

- **Four Major Sections**
 - Science Needs & Gaps (by RECOVER module)
 - Information Sharing (science information)
 - Quality Assurance (science products)
 - Progress Tracking (action implementation)
- **Actions** (address gaps, programmatic & strategic approaches)



ISR Comments Addressed and Included in the 2006 Plan for Coordinating Science

- Defined a process to identify Needs and Gaps
- Organized Needs, Gaps by eco-region (i.e., module)
- Developing sets of Actions on how gaps will be filled
- Established a process for continuing to review Plan's goals and objectives
- Address issues regarding scale of coordination and placing boundaries (time, space, parameters, and variability) on the program to ensure data gathered is the most relevant and informative
- Use visual tools to better communicate coordination process and efforts
- Defined processes to enhance information sharing
- Defined processes for supporting quality science

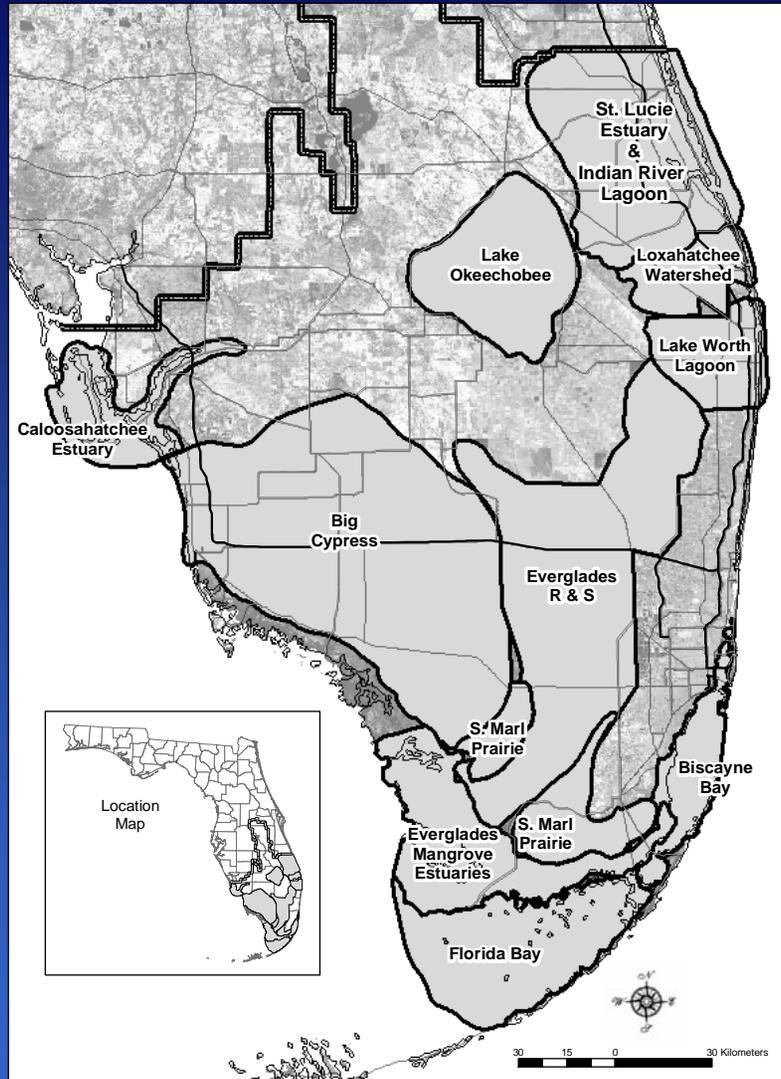


Needs and Gaps



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Conceptual Ecological Models within RECOVER MAP Regional Modules



Northern Estuaries

- Caloosahatchee Estuary
- Lake Worth Lagoon
- St. Lucie Estuary & Indian River Lagoon
- Loxahatchee Watershed

Southern Estuaries

- Biscayne Bay
- Florida Bay

Greater Everglades

- Everglades Ridge and Slough
- Southern Marl Prairies
- Big Cypress Regional Ecosystem
- Everglades Mangrove Estuaries

Lake Okeechobee

Total System



Science Needs & Gaps

- **Identifying Needs**

- Major hypothesis clusters from RECOVER's Monitoring and Assessment Plan (MAP) Regional Modules were reviewed by CEM sub-teams to identify critical science Needs

- **Identifying Gaps**

- Each CEM sub-team evaluated their science initiatives with respect to each identified need to ascertain any gaps in scientific understanding for their region



Information Sharing



Information Sharing

➤ ELEMENTS OF INFORMATION SHARING

- Web-based information sharing “Google-like” system
- Conferences, Workshops & Symposia (Research, Monitoring, Modeling)
- Syntheses of Scientific Work Products (Research, Monitoring, Modeling)



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Possible Information Components

• Project Information

- Title and Abstract
- PI Name and Contact Info
- Amount of Funding / Duration

• Final Project Reports

• Publication / Research Products

• Summarized/Reported Data

• SFERTF Calendar Input

- Conferences
- Symposia
- Workshops
- Other Related SF Restoration Projects

• Special Reports

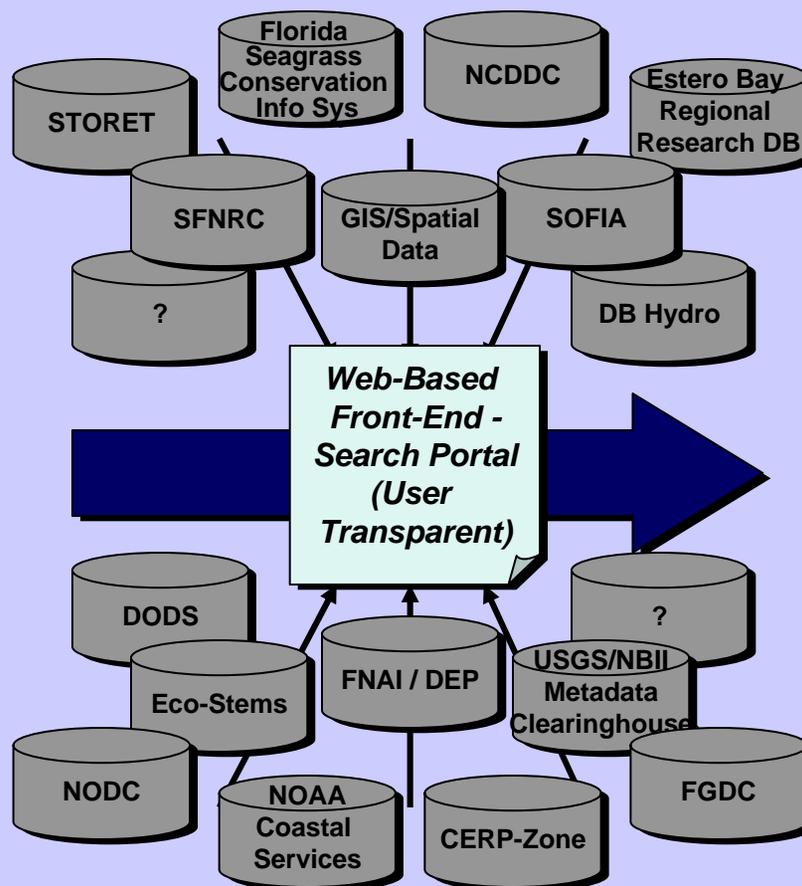
• Management Information / Analysis

• Agency Reports and Plans

• Other Restoration Programs in SF

Minimum Requirements

Searchable Web-based System

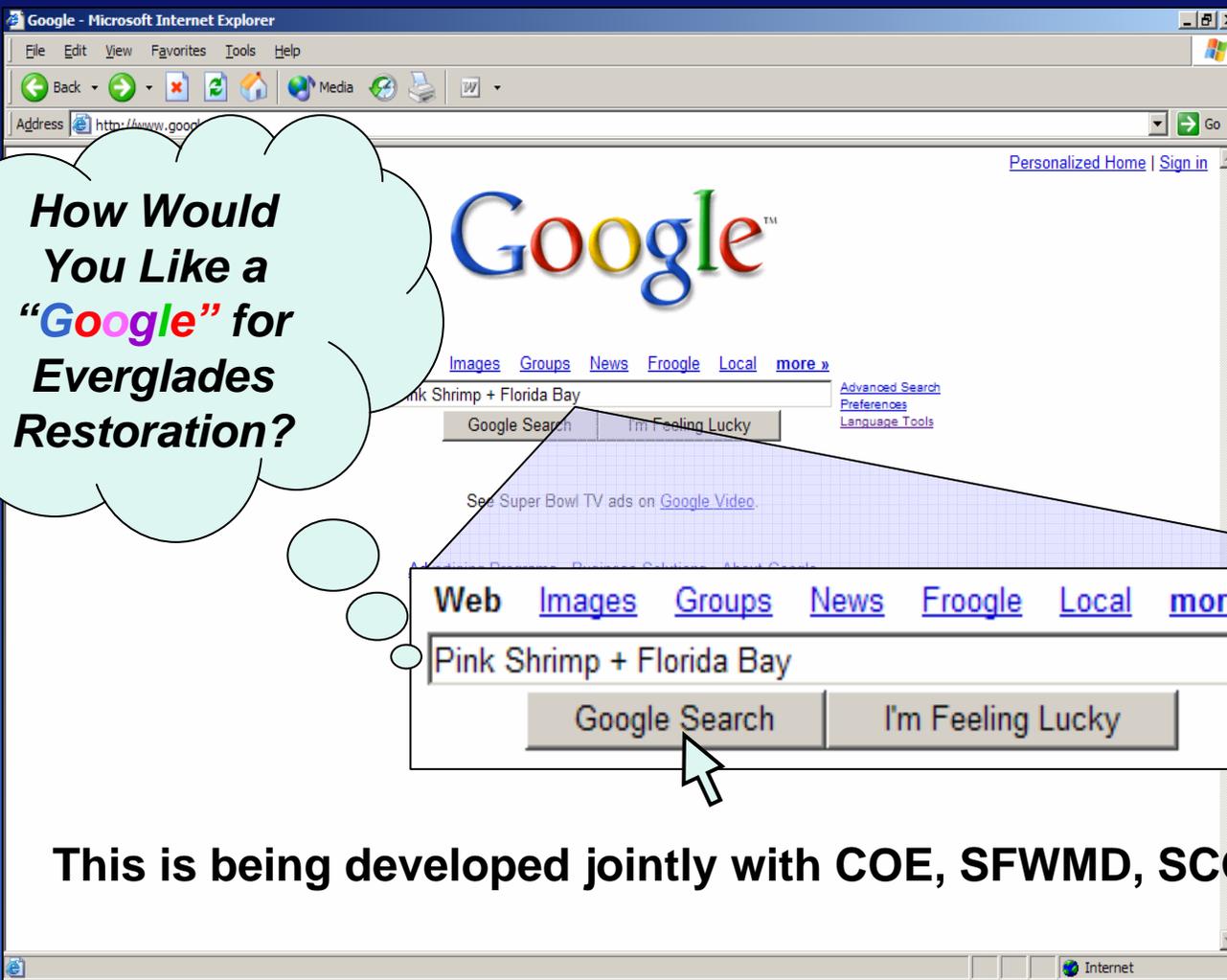


Possible Outputs

- Monthly/Quarterly SCG Newsletter
- SCG Calendar
- PI / Project Info
- Ad-Hoc Reports
- Bi-Annual TF Report
- Five-Year Report to Congress
- SF Environmental Report (SFWMD)
- Progress tracking for SCG



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This is being developed jointly with COE, SFWMD, SCG, & RECOVER



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Quality Assurance



Quality Assurance of Science Products

- Incorporated policy statement:
 - *“Scientific data collection and analyses shall be conducted according to current industry and academic standards, under transparent and reproducible procedures that support restoration projects, decision-making, and information sharing among Task Force member agencies”*
- Described ability of Task Force to ensure quality of Task Force products
 - Independent Science Reviews of Task Force Science Products
 - Syntheses of Research
 - Scientific workshops (e.g., Avian Ecology Workshop)



Progress Tracking



Tracking Progress and Updating the Plan

- Brief Task Force annually on overall progress and updates
- Update Plan biennially and review the needs, gaps, & actions



Tracking Progress and Updating the Plan

EXAMPLE

| Gap | Status | Progress | Action | Status | Progress | Comments |
|---|--------|----------|--|--------|----------|---|
| Developing and using Task Force-level system-wide indicators and restoration endpoints to include performance measures, monitoring, pre-restoration baseline, and assessment protocols to evaluate restoration progress | ● | ● | Design an approach for developing system-wide indicators and restoration endpoints | ● | ● | <i>SCG developed approach.</i> |
| | | | Implement approach to develop system-wide indicators and restoration endpoints | ● | ● | <i>SCG developing the first suite of indicators</i> |
| Developing a conceptual ecological model (CEM) for the Florida Keys and using it to identify science needs and gaps | ● | ● | Develop a CEM for the Florida Keys | ● | ● | <i>Need to identify SCG sub-group or system experts to develop Florida Keys CEM</i> |



Plan for Coordinating Science

- **STATUS**

- Task Force input needed on draft PCS following Sept. '06 meeting
- SCG review and incorporate review comments and develop recommended Actions
- Final draft of PCS presented for TF approval at Dec. '06 meeting



Initial SCG Workplan Topics for 2007 - 2008



Continuing SCG Workplan Topics

- Development of Individual Indicators
 - Performance Measures
 - Targets
 - Assessment Approaches
 - Communication Concepts
- Revisions of the Plan for Coordinating Science



Possible New SCG Topics 2007-2008

- Tree Islands
- Performance Measures
- Targets
- Uncertainty
 - ASR
 - Models
 - Water Reuse
- Adaptive Management (e.g. tree island performance measures, Florida Bay hydrodynamic & TIME models, Process for integration and use by Managers)
- Expansion of USGS Coastal Monitoring Program
- Independent Scientific Reviews & Syntheses
- Effects Of Re-hydration of Acquired Lands
- RECOVER Team's update & presentations to SCG
- EAA Strategic Plan



SCG 2007 – 2008 Workplan Next Steps

- Refine new topics list
- Present to Task Force for approval at Dec. 2006 Meeting



Thank you.

Are there any questions?

