

South Florida Ecosystem Restoration Task Force

Science Coordination Group

Working Group Update
July 20 - 21, 2006



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Current Activities & Priorities

➤ System-wide Indicators

- ISR completed and recommendations divided into those possible for 2006 and those possible by 2008 biennial reports
- 2006 Indicator Report final draft in August 2006

➤ Plan to Coordinate Science

- All sections in first draft to SCG July 3, 2006
- SCG meeting review of first draft of PCS July 11, 2006
- First draft currently in review and revision with SCG, second draft expected August 2006
- Final Draft PCS – Sept. 2006

➤ Determine possible additional SCG topics for 2007 through 2008



System-wide Indicators

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 projects relate to “built system” (e.g. flood protection)
 - Assesses the ecological compatibility of these projects



Four 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. 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



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 (Recommend Deletion for 2006)



South Florida Ecosystem Restoration Task Force

Independent Scientific Review of Suite of Indicators

Jeffrey L. Jordan, Chair, U. Georgia

Joanna Burger, Rutgers

JoAnn Burkholder, NC State

Robert Ward, Colorado State

Donald Kent, Community Watershed Fund



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Major Recommendations from ISR Panel

2006 TIMEFRAME

- Include a section that describes the scope of the System-wide Indicators Report – **Completed 6/23/06**
- Identify for which aspects of the restoration program performance is being judged – **Completed 6/23/06**
- 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 – **Completed 6/23/06**
- Revise, modify and provide a fuller documentation to the 4-Steps used to select the indicators – **Completed 6/23/06**



Indicators with ISR Comments

- Fish & **Macroinvertebrates**
- Wading Birds (Woodstork, White Ibis & **Roseate Spoonbill**)
- Florida Bay Submerged Aquatic Vegetation
- **Florida Bay Algal Blooms**
- **Crocodylians (Alligators & Crocodiles)**
- American Oysters
- **Periphyton-Epiphyton**
- **Juvenile Pink Shrimp**
- Lake Okeechobee Littoral Zone
- Invasive Exotic Plants
- Water Volume (**Turn into Water Shortage**)
- **Salinity Intrusion in the Biscayne Aquifer (Integrate into Water Shortage)**
- **Flood Protection – C-111 Basin (too narrow and confusing integrate into Flooding)**
- **Flooding**
- **Cattails**
- **Exotic Animals**
- **Mercury**
- **Contaminants**



ISR Recommendations Continued

2008 TIMEFRAME

- Include a section that identifies and lists all of the other indicators evaluated but were not included and why – Moved to 2008 Timeframe
- 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**
- 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 alternate ‘communication tool’ incorporating line or column graphs with goal lines and timeframes
- Several recommended modifications to individual indicators – **Meeting August 22, 2006 with indicator scientists to discuss**
- Address long-term research needs identified in individual indicators to improve use and reliability of indicators – **Also need to review these in light of 2008 revision of PCS**



2006 Indicators

1. Fish & Macroinvertebrates
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Plan for Coordinating Science

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



Overview – ISR Comments Addressed

- **Defined a process to identify Needs, Gaps, and Actions**
- **Organized Needs, Gaps and Actions by eco-region (i.e., module)**
- **Addressed comment to develop CEMs for other regions of South Florida Ecosystem (updated gap and action)**
- **Established better accountability on how actions will be addressed**
- **Established a process for continuing to review Plan's goals and objectives**
- **Defined process to enhance communication between scientists and managers**



Overview – ISR Comments to be Addressed

- **Process to rank uncertainties of individual stressors that could help with risk identification and prioritization of needs**
- **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 (graphic in development)**



Information Sharing

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



Science Coordination Group



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Searchable Web-based System

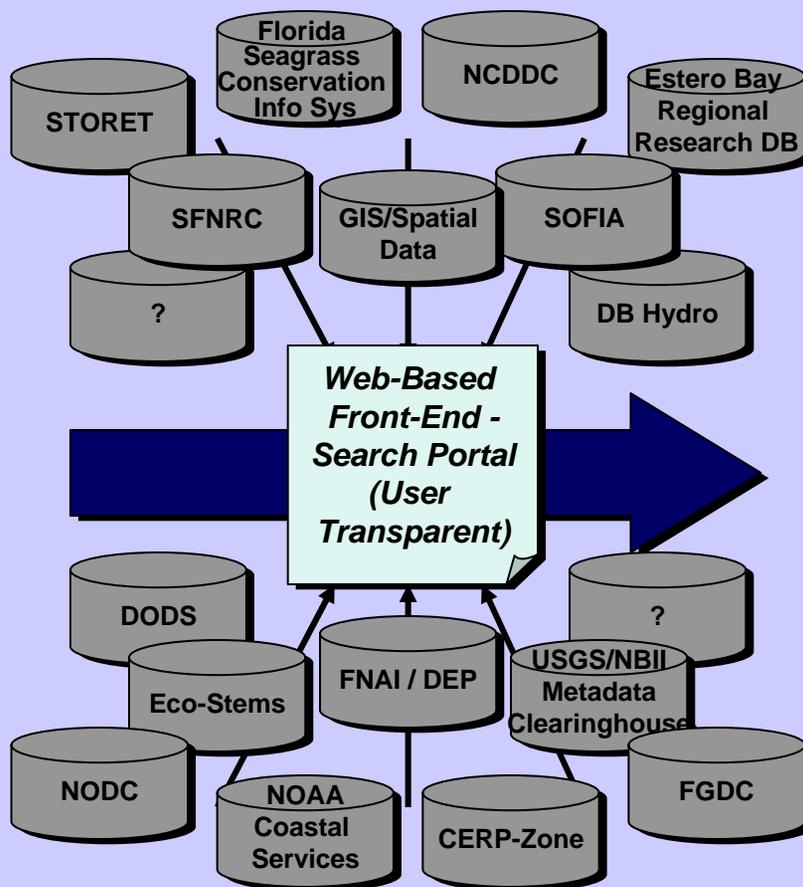
Possible Information

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

Minimum Requirements



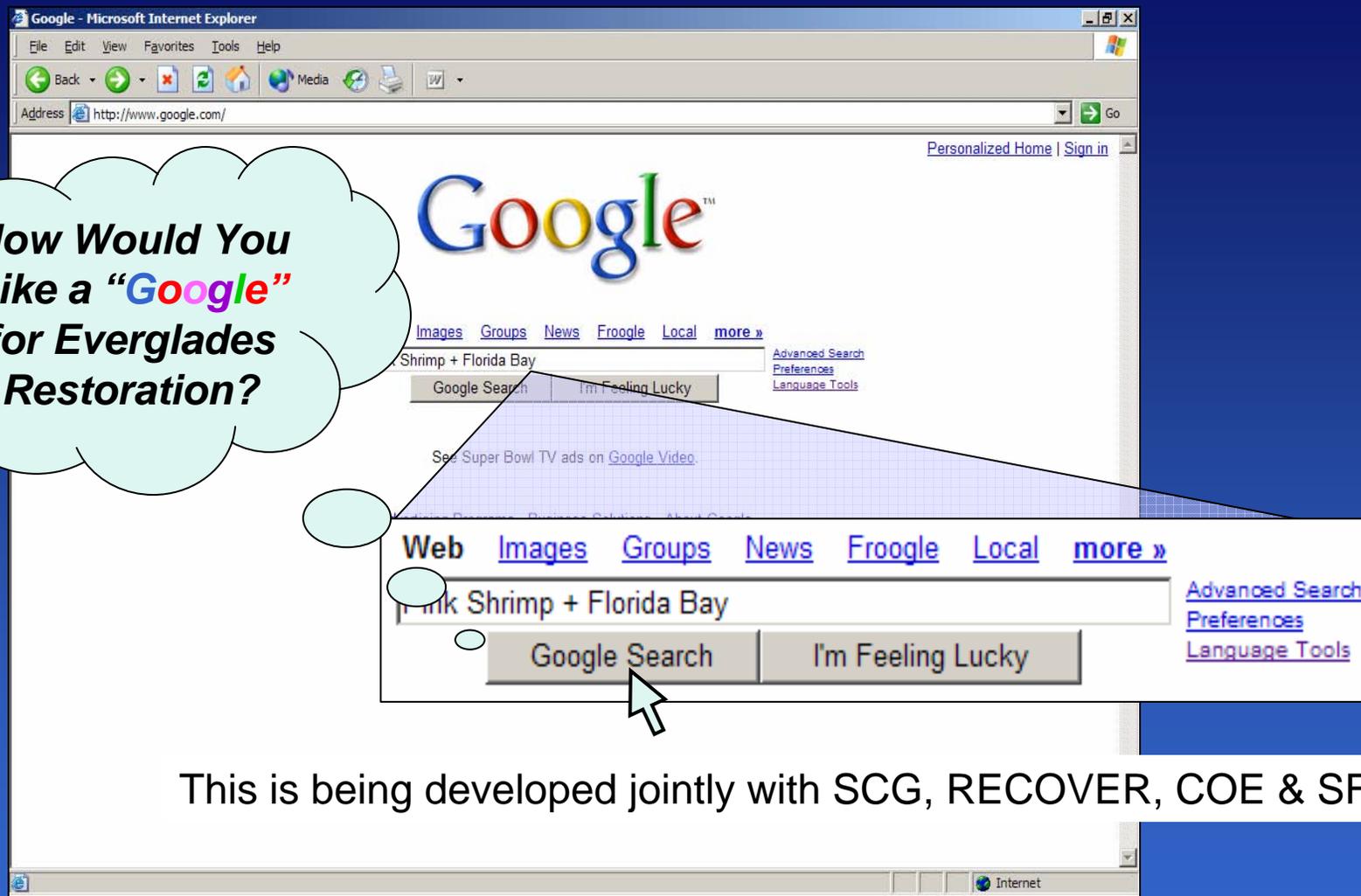
Possible Outputs

- 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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How Would You Like a "Google" for Everglades Restoration?



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



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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*
 - Policy statement characterized in Plan as approved by Task Force
 - Anticipate approval of overall Plan is tacit approval of the policy by the Task Force
- Described ability of Task Force to ensure quality of TF products
 - Independent Science Reviews
 - Scientific workshops (e.g., Avian Ecology Workshop)



Progress Tracking



Tracking Progress and Updating the Plan

- Brief Task Force on progress
 - Quarterly – on status of actions and outcomes of completed activities
 - Annually – on overall progress and updates required to the Plan
- Update Plan biennially
 - Full review of approach for needs, gaps, actions
- Updated to describe Excel-based tracking tool



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>



Needs, Gaps & Actions



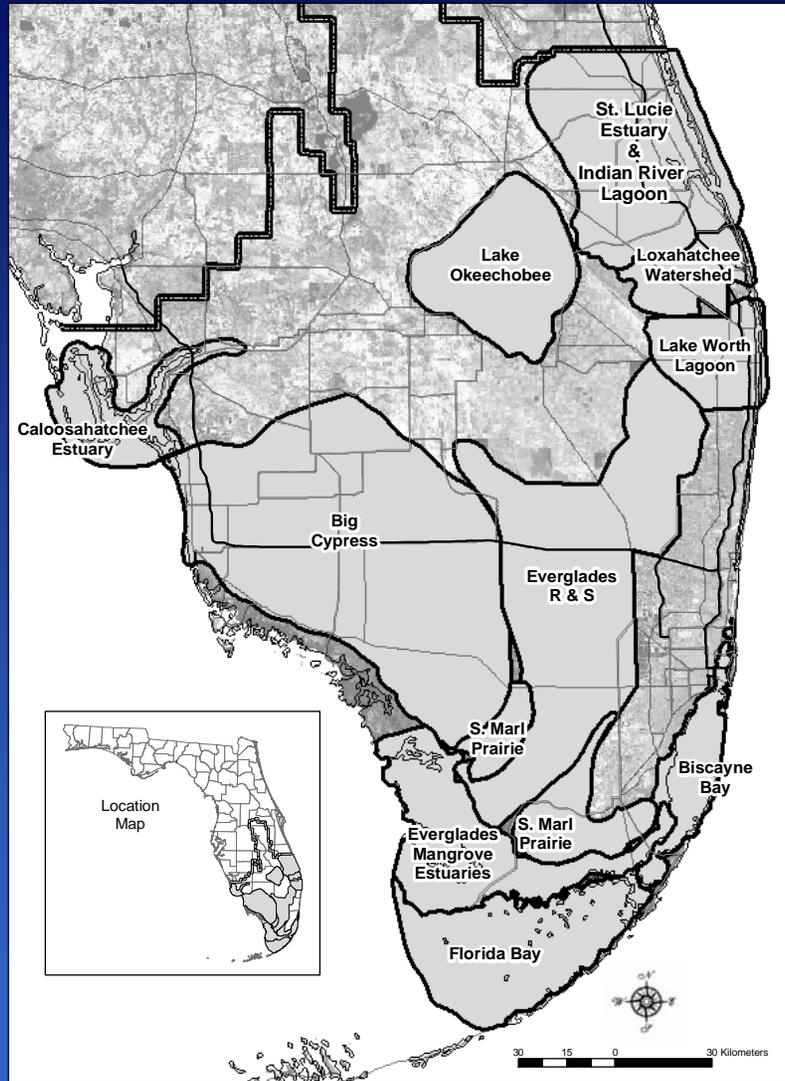
Science Needs, Gaps, & Actions

- 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.
- Identifying Actions
 - Each CEM sub-team recommended actions that they considered the most effective way to fill the gaps identified for their MAP Module.



South Florida Ecosystem Restoration Task Force

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 Wetlands

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

Lake Okeechobee

Total System



Summary

- Updated PCS
 - Incorporated full needs, gaps, action development by module
 - Updated portions of Ensuring Quality Science section
 - Incorporated conclusions of ensuring quality and tracking subgroups
 - Awaiting SCG conclusions on information sharing to update this subsection
 - Reviewed and incorporated (or are incorporating) resolution of ISR and GAO comments
- Will update appendices in parallel with SCG review
- Require SCG review and input on
 - Main body of Plan for completeness
 - Needs, Gaps, and Actions, including responsible organization and milestones.



Thank you.

Are there any questions?

