Review and Re-evaluation of the System Wide Ecological Indicators

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System Wide Ecological Indicators Re-Evaluation

2004, the Task Force initiated the development of a Plan for Coordinating Science (Plan). In the Plan, the Task Force defines science application as:

[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.

In 2005, the Task Force directed the Science Coordination Group to develop a "suite" of system-wide indicators for restoration. The Task Force will use these system-wide indicators to judge the performance of the CERP and non-CERP restoration projects toward achieving restoration goals that are outlined in both the Comprehensive Everglades Restoration Plan (CERP), and the goals and projects included in the Task Force Strategic Plans

System Wide Ecological Indicators Re-Evaluation

- The SCG developed the initial suite of South Florida system-wide indicators of restoration success through the execution of a 4-step process.
  - Step 1. Evaluate existing restoration efforts from various sources for indicators for possible application to the Task Force suite of system-wide indicators
  - Step 2. Using established guidelines, (next slide) to select relevant indicators for Everglades Ecosystem applicability, evaluate the list of Indicators for individual and collective value and coverage of Everglades' ecosystem Regions, Characteristics, Trophic Interactions, and Functions
  - Step 3. Identify "indicator gaps", and where feasible for the 2006 report, develop new indicators to fill identified gaps
  - Step 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

Table 2. Restoration Indicator Guidelines developed by South Florida Ecosystem Restoration Task Force, Science Coordination Group (SCG)

Ecological Indicator Guidelines	***Restoration Compatibility Guidelines***
1. Is the indicator relevant to the ecosystem and does it respond to variability at a scale that makes it applicable to the entire system or a large or important portion of it?	1. Does the indicator provide a measure of compatibility of the built system with ecological restoration?
2. Is the indicator feasible to implement (is someone collecting data already)?	2. Is the indicator feasible to implement (is someone collecting data already)?
0. Is the indicator sensitive to system drivers?	3. Is the indicator sensitive to system drivers (stressors, operations of water management)?
4. Is the indicator interpretable in a common language?	4. Is the indicator interpretable in a common language?
5. Are there situations where even an “optimistic” trend with regard to the indicator might suggest a “pessimistic” restoration trend?	5. Is the indicator scientifically defensible?
6. Are there situations where a “pessimistic” trend with regard to the indicator may be unrelated to restoration activities?	6. Are clear measurable targets established for the indicator to allow for assessments of success of affects of management actions and operations on ecological restoration?
7. Is the indicator scientifically defensible?	7. Does the indicator have specificity? Does it indicate a feature specific enough to result in management action or corrective action?
8. Are clear, measurable targets established for the indicator to allow for assessments of success of ecological restoration and effects of management actions?	
9. Does the indicator have specificity? Does it indicate a feature specific enough to result in management action or corrective action?	
1. What level of ecosystem process or structure does the indicator address?	

System Wide Ecological Indicators Re-evaluation

Technical questions to consider for the re-evaluation of the indicators include:

- Are these still the most appropriate indicators?
- Do we have sufficient data?
- Are they sensitive to hydrology?
- Can we detect trends?
- Can we separate natural variability from trends due to restoration actions?
- What are the gaps? (i.e trophic levels)
- Do we expand beyond organisms to include other measures such as landscape patterns?
- Do we need to re-define or re-confirm the geographic scope for revised indicators?
- Do we have the necessary ecological models? Are they still appropriate?
- Can we assess the influence of sea level rise and/or changes in climate?

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Prior to initiating an assessment of the appropriateness of the current indicators, need to ask the WG and Task Force the following questions:

- What are the Task Force and Working Group getting out of the reporting on the ecological indicators?
- What is not needed and what is missing?
- How is this information used? Who are the point of contacts to ask?
- How does the TF and WG want to use this information?
- How can this information be used to further restoration?
- Reporting every 2 years is tied to the Task Force bi-annual strategy document, but do the indicators show change that can be attributed to restoration actions at this frequency? If not, can we modify the frequency of reporting?
- Identification of additional resources are estimated to required approximately 5-6 **additional** participants to coordinate, organize and conduct this effort at 25% of their time over two years
- Will also need the participation of the subject matter experts , which may preclude other activities they are doing

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- Other considerations include the following:
- Need to have a process that includes the PIs, stakeholders
- Task Force indicators need to be broader than CERP. i.e. addition of exotics indicator
- What is the expected schedule and deadline to complete the re-evaluation?
- Coordination between project and system wide monitoring (CISRERP)
- Temporal and spatial scale; why don't we used the same approach (i.e. GERTS panels) but modified at the appropriate scale to distinguish between project and system-wide effects (CISRERP)