System-wide Ecological Indicators
Independent Scientific Reviews
Built system Indicators
Phase II Plan Progress

South Florida Ecosystem Restoration Task Force
Science Coordination Group

31 August 2005

Recap of Ecological Indicators

PLEASE

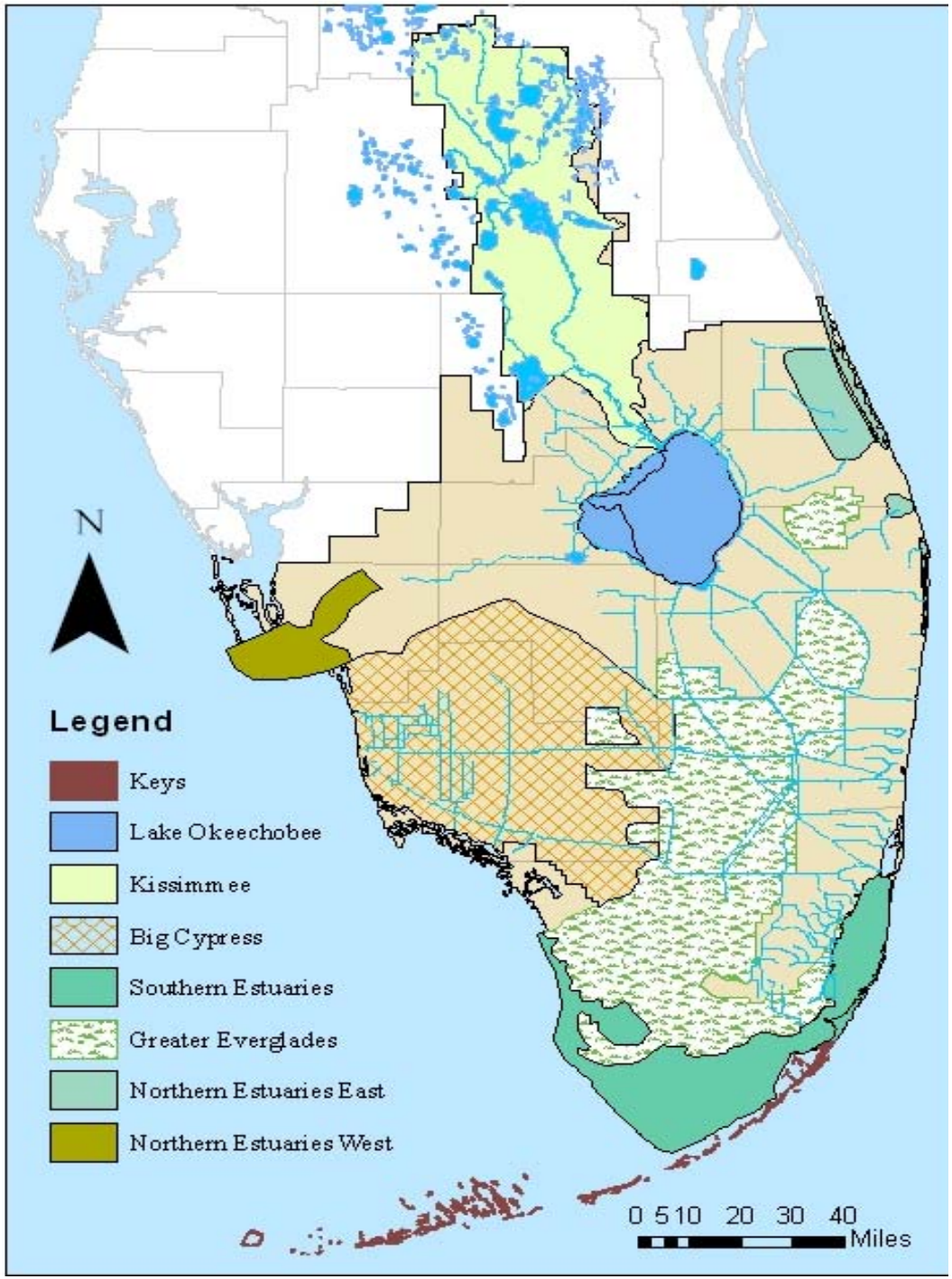
REFER TO YOUR HANDOUT ON

FISH & MACROINVERTEBRATES

SCG Approved List of Ecological Indicators

1. Periphyton-Epiphyton (RECOVER)
2. Fish & Macroinvertebrates (RECOVER)
3. Big Wading Birds (Spoonbill, Woodstork, White Ibis) (RECOVER)
   (Spoonbill element still under review for inclusion per discussion with John Ogden)
4. Eastern Oysters (RECOVER)
5. Juvenile Pink Shrimp (RECOVER)
6. Florida Bay Algal Blooms (RECOVER)
7. Florida Bay Submerged Aquatic Vegetation (RECOVER)
8. Lake Okeechobee Littoral Zone (RECOVER)
9. American Alligator (RECOVER)
10. American Crocodile (RECOVER)
11. Exotic Plants/Vegetation Mosaic (in development)
12. Contaminants (Needs development)

- RECOVER & SCG Regional Modules



INDEPENDENT SCIENTIFIC REVIEW OF INDICATORS

- **SCG agreed that suite of recover-based ecological indicators needs review as a collection for evaluating their use and purpose regarding restoration goals**
- **SCG agreed there was no need for technical scientific review of RECOVER-derived indicators**
- **SCG agreed on basic format for developing a descriptor for the indicators (example of Fish & Macroinvertebrates is provided as a handout). Format derived from:**
  - Calfed ecological indicators format
  - Recover interim goals & targets format
  - Vital signs selection guidelines

Ecological Indicator Review Questions sent to SCG for comment

1. Do we have too few, enough, or too many indicators?
   1. If you feel there are either too few or too many and this somehow jeopardizes the use of this suite of indicators, please explain your concerns and provide suggestions to address them.
2. Is the suite of indicators deemed useful for the purposes indicated?
   1. If not, can you suggest ways we might improve them?
3. Are the strategy and the guidelines used to develop the suite reasonable and appropriate?
   1. If not, what specific problems do you note with the approach or the guideline questions used to develop the suite of indicators?
4. How do you think the indicators might best me integrated across geographic and ecological lines?

Review Questions Con't.

5. Are the methods of reporting the indicators individually and collectively effective for both technical and non-technical audiences?
   1. If not how would you suggest we communicate how these indicators to assess restoration? (This has to be developed – see Handout example from SFWMD Environmental Report)
6. Do you think the suite of indicators is representative enough of the different ecological and biological dimensions of the Everglades' system that they may also be representative or indicative of important conditions of the ecosystem that we are not or can not measure?
   1. If not please explain your concern and provide us with guidance on how to improve or modify the suite in order to enhance this aspect.
7. If used, will these indicators provide a good indication that we are or are not meeting our ecological restoration goals?
   1. If not please explain why not, and how they might be used or modified for this purpose.

Ecological Indicator ISR

- Draft SOW for Ecological Indicator ISR complete will be reviewed by Indicator subgroup next
- SCG needs to approve/revise draft narrative statement (Fish & Macroinvertebrates) as format for individual indicators
- Develop communication tool(s) for indicators (See SF Environmental Report Handout example). At least provide some guidance on what kind of communication may be acceptable
- Determine agency and person(s) who will develop the narrative for the other indicators (name names)
- Set deadline for first draft of other narratives
- Set deadline for Background and Introduction
- Determine what support material to provide with narrative statements (publications, etc.) (Recommend only 5-6 key citations, or all citations for each?)

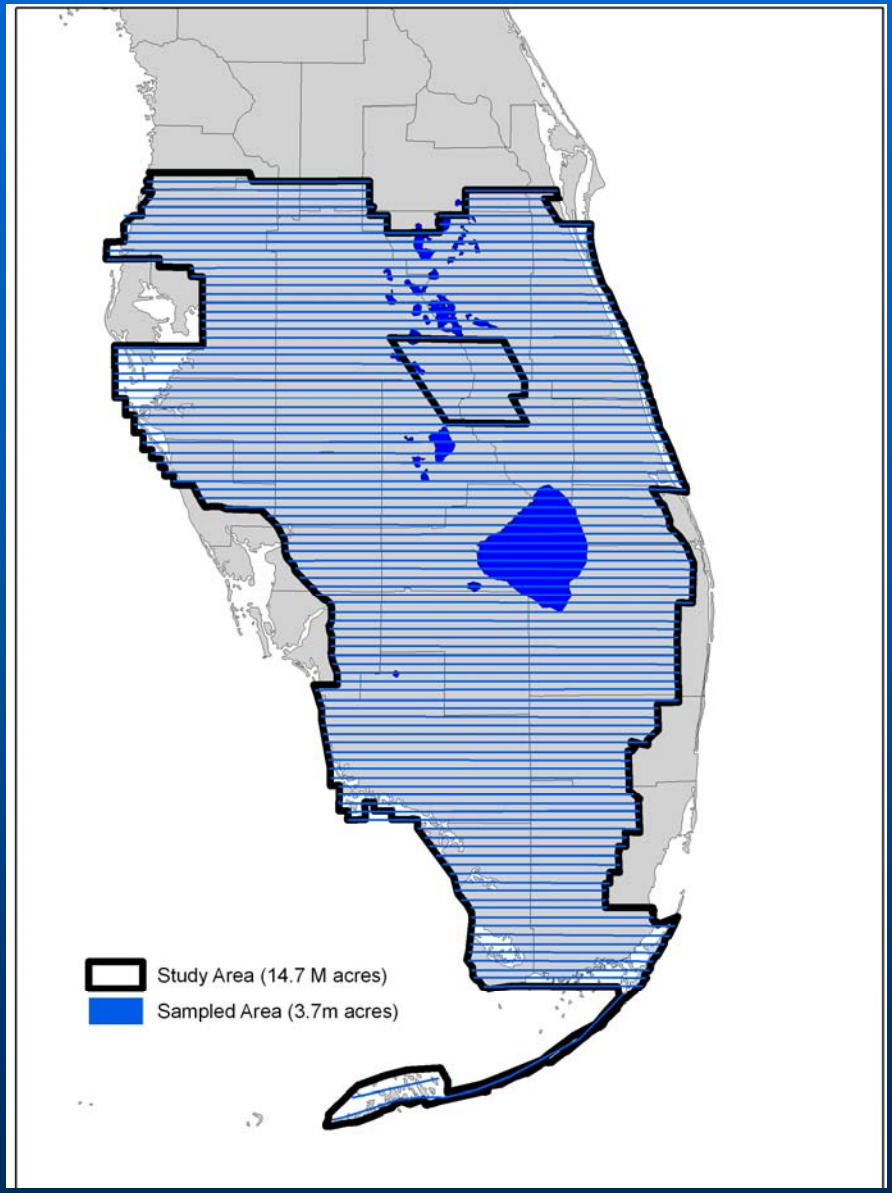
Exotic Plant Indicator

- Four Projects identified as basis of indicator
- Developed project metrics narrative to identify key "indicator" metrics
  - See handout
- Draft metrics narrative submitted to SCG for review & comment
  - Comments received from Susan Markley and expecting comments from USFW, not a word from anyone else!
- Provide draft metrics narrative to NEWTT to assist with determining key metrics and narrative for indicator report with supporting data & information
- Prepare final draft report for independent scientific review

PLEASE

REFER TO YOUR HANDOUTS ON

EXOTIC PLANT INDICATOR
&
S.F. Environmental Report (SFWMD)



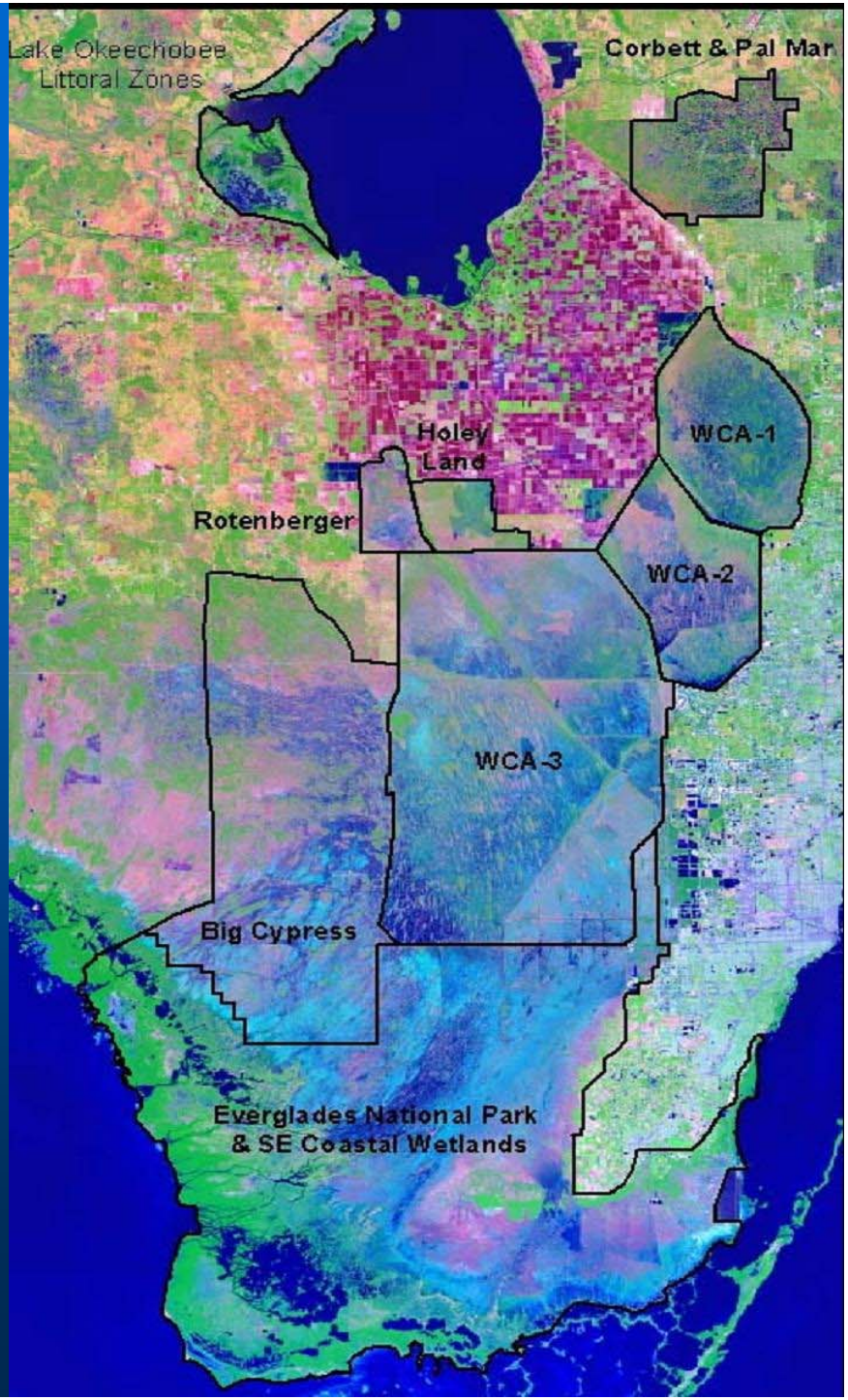
SRF

REMAP

- 250 sites throughout the Everglades Protection Area
  - 125 dry season, 125 wet season
  - Rigorous statistical application to plot locations & data
- Detailed vegetation survey at each site
  - General visual survey of dominant species
  - 2 types of visual surveys for vegetation & exotics
  - Photographic records of site (ground and aerial)
  - Transects across different identified habitats at each site
    - 5 X 1 m^2 with complete plant census at each transect

RECOVER MAPING

- Vegetation Mapping of 4,216 mi^2
  - Water Conservation Areas, Loxahatchee, Holeyland, Rotenberger, Lake O., Corbett & Pal Mar Natural Areas, Everglades National Park, Southeastern coastal wetlands, Big Cypress National Preserve
- Using Aerial Photography
- ¼ Hectare mapping unit (2,918,819 cells)
- Vegetation Classification for South Florida National Park (D. Jones, et al. 1999 – revised version Rutchey & Schall 2005)



TREE ISLAND SURVEY

- SFWMD – FAU (John Volin, PI)
- Transects (good statistical application)
- 600 islands to be surveyed
- Conservation Areas 2B, 3A & 3B
- Stratified by size of hammock (Randomized survey)
- Exotic species occurrence

Phase I Independent Scientific Review Questions

1. **Since the Task Force has no authority to coordinate science at an individual project or agency program level do you feel that the Plan employs a reasonable and useful approach for helping to coordinate the larger science picture among the agencies represented on the Task Force?**
   1. If not would you please provide examples of any approaches or methods you think might do a better job or provide suggestions on how to improve this approach?
2. **Given the non-traditional nature of this level of coordinating science do you feel that the use of the RECOVER Conceptual Ecological Models with expert teams to identify "critical science needs, gaps, and actions" is a good approach and if so, how might it be improved?**
   1. If not what approach or information would you have used to identify strategic science needs critical to restoration?
3. **Are the critical science needs and gaps pertinent to the issues of restoration based on what information is currently available?**
   1. If not, what critical science needs do you think are being left out or what other information should be considered in identifying these needs?

Phase I Questions Con't.

4. **Are the identified needs and gaps unambiguous and the remedies clear?**
   1. If not please tell us what specifically is unclear or provide us with your suggestions for improving the clarity of the needs and gaps to ensure they are understood.
5. **How would you suggest that the Task Force utilize the information on science needs and gaps to help them coordinate and persuade agencies of the importance of "filling the gaps" in the critical science needs?**
   1. Where possible please provide examples or documentation of possible ways to accomplish this.
6. **Do you feel that this plan and approach are addressing the concerns expressed by GAO (March 2003) within the limits of the Task Force's authority and responsibility?**
   1. If not could you please tell us specifically what you think we are not addressing or why this approach is not working, or if you think the Task Force is being asked to do something at a level it does not have any authority to act.

Phase I Review Status

- Statement of Work has been submitted through existing USACOE contract with Battelle
- Estimated Cost ~ $50,000.00
- Funded by OED

On to the next Side (sic) Show

- Built System Indicators – Tim Canan
- Phase II Developments
  - Needs & Gaps – Bob Doren
  - Quality Assurance – Kurt Buchholz
  - Information Sharing - Brian Siems
  - Progress Tracking – Walt Cybulski