FCE: social science approaches to changing landscapes

Human Dimensions Group
March 19, 2007
FCE All Science Meeting

Today

- Group Introductions
- FCE II Work Plan
  - Macro: Conceptual Framework for Everglades Socio-Ecological Research
  - Micro: Year One Research Question

who we are

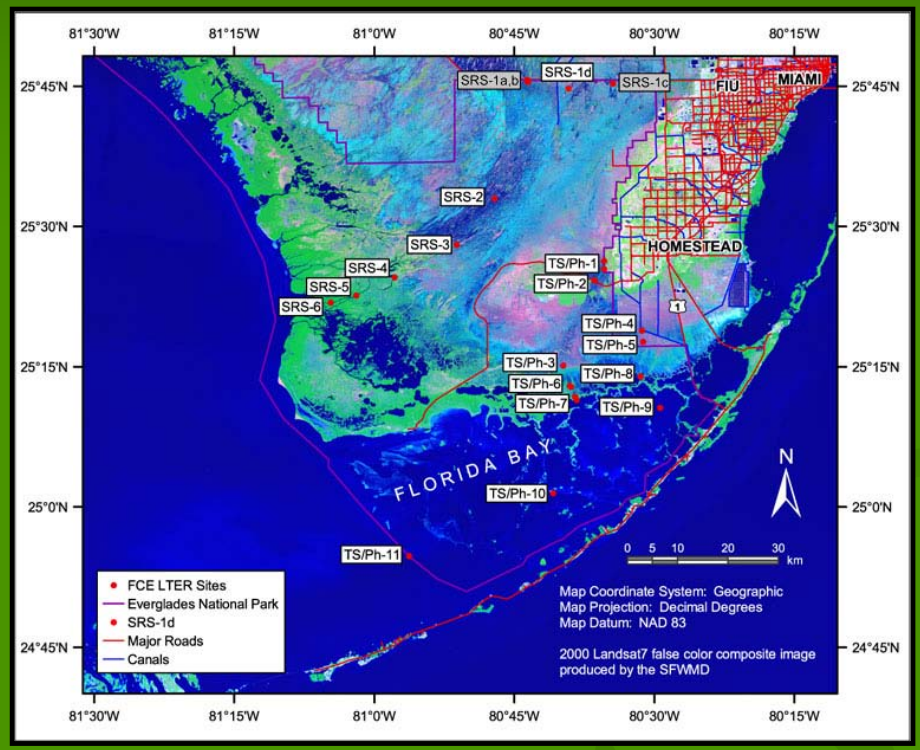
- Laura Ogden (anthropologist, FIU): Everglades cultural history, restoration policy and public involvement
- Gail Hollander (geographer, FIU): political economy of agriculture in the EAA, politics and policy of restoration
- Rinku Roy-Chowdhury (geography, UM): landscape change/land cover change, remote sensing, GIS
- Jen Gebelein (geography, FIU): GIS, remote sensing
- Rick Tardanico (sociology, FIU): political economy of consumption and production, GIS
- Hugh Gladwin (anthropology, FIU): public opinions research, hurricane and emergency response and planning, GIS
- Mahadev Bhat (economics, FIU): natural resource economics, agricultural economics
- Melissa Memory (anthropology, ENP): Everglades archaeology
- Margo Schwadron (anthropology, NPS): Everglades archaeology
- Rebecca Garvoille (anthropology grad. student): RA for FCE LTER

Overall Goal

- Understand how the Everglades is a socio-ecological system:
  - Understand ecosystem services and feedbacks & the social processes and perceptions shaping these relationships
    - Differential distributions of these relationships
  - Use landuse/land cover as a lens for understanding broader systemic social processes (at various temporal and spatial scales)
  - Model human-driven change working toward a connection with water quality/quantity models (need collaboration with other FCE working groups)

Florida Coastal Everglades: Expanding scale of research

- FCE ecological research within ENP
- To look at human dynamics, need to expand the scale of the research site



State of Everglades Socio-Ecological Research

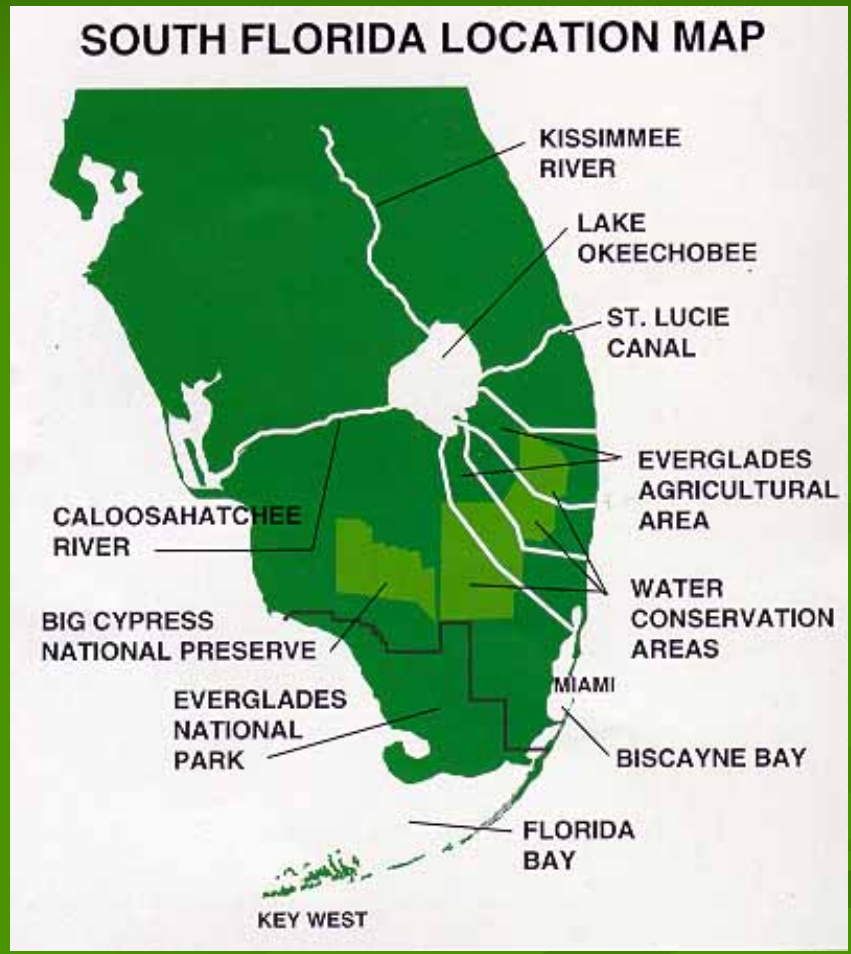
- Currently
  - Lots of social science research in S. Florida
  - Fragmentary, multiple theoretical and methodological approaches
  - Little socio-ecological frameworks guiding this research
  - Some long-term data (census, land use mapping and other data)

- Need to Do (Simultaneously)

1. Evaluate existing data/research and identify key gaps to help us conceptualize the Everglades as a coupled human-ecological system.
2. Begin a focused research project that asks an integrated socio-ecological question

Research Approach

- Research Sites
  - Everglades Agricultural Area
  - Urban Miami
  - Southern Everglades buffer zones (suburbanizing)



Questions: FCE II, III, and so on

- What are the social dynamics (political/policy, economic, cultural, demographics) that shape land & water use decisions and patterns at each of the sites?
- How have they changed over time?
- In what ways (if at all) does what is happening at one site shape land & water use decisions and patterns at the other sites?
- How are these patterns (localized at a variety of scales) global?

Focus on South Dade

- Focus on land use/land cover in South Dade
  - Area of rapid transformation (from agriculture to residential development)
  - Borders (and may include in the future?) critical buffer areas to ENP and BNP
  - South Dade Watershed Study

First Cut: Lawns

- In south Dade, how can we characterize the transition from rural land uses to residential lawns?
  - What are the processes driving this change?
  - What are the ecological results of this change?

Methods

- Political Economy of Lawns
  - Treat lawns as any other "crop" use agricultural economics approaches
  - Commodity chain research (inputs, costs, labor markets)
- Environmental Attitudes & Behaviors Survey
- Longitudinal Photo Experiment (documentary)
- Sampling of Grass– characterize inputs, etc. – to "ground" research

Remote Sensing

- Remote Sensing for land cover characterization
  - Continuous land cover to quantify regional gradients in net primary productivity (e.g., vegetation indices)
  - Categorical land cover (e.g., discrete cover/use classes, including open, green spaces such as lawns)
  - Set up landscape structure for linkages to hydrological and nutrient footprints of diverse land covers
  - Future stage: Use imagery-derived variables for spatially explicit models of land cover and its change

Other Issues

- Supplemental Funds Request
  - Hold a workshop to develop survey approach & methodology for conducting environmental attitudes and behaviors research
  - Core Long-Term Data Need
  - Cross-site support for project, for cross-site implementation (and future comparative research)