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Summary of Greater Everglades Restoration Workshop: 4. Landscape Mapping and Topography, May 23, 2002

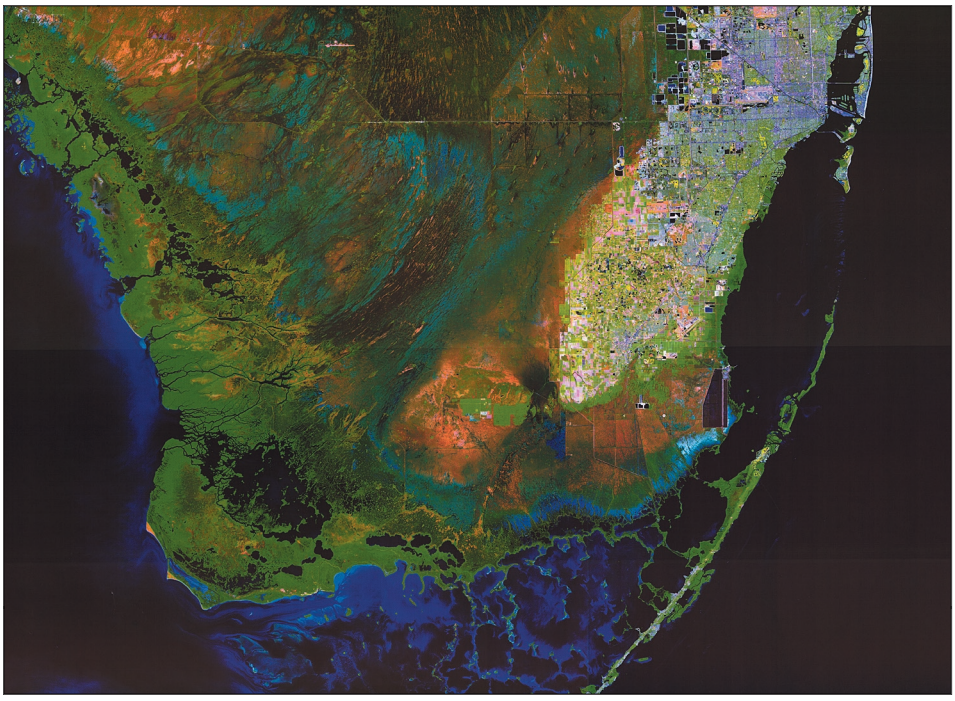
The Workshops

During April and May 2002, the United States Geological Survey's (USGS) Greater Everglades Place Based Studies (PBS) held five information workshops in south Florida to discuss the status of greater Everglades ecosystem research, and to solicit suggestions for additional studies from Everglades restoration partners. The Landscape Mapping and Topography Workshop was held at NOVA Southeastern University in Fort Lauderdale on May 23, 2002.

Background

The greater Everglades restoration program is prescribing ecosystem-wide changes to some of the physical, hydrological, and chemical attributes of the Everglades ecosystem. Information on the spatial aspects of this natural system allows restoration planners to establish realistic baseline conditions, restoration goals, and performance measures; create predictive models; and monitor the success of restoration efforts. USGS landscape and topographic mapping research is focused on providing information about the land surface beyond that being generated by on-going partner State and local government land cover and vegetation mapping efforts. Development of innovative mapping techniques enables involved parties to better understand the greater Everglades and to do so in a more comprehensive and cost-effective manner.

Many organizations and programs are dependent on scientific knowledge and more accurate models for restoring the greater Everglades ecosystem. These include federal, state, and local agencies, Native American tribal governments, as well as private organizations.



Southern Everglades satellite image map

The activities reviewed at the workshop are organized under the USGS project headings of "Land Characteristics from Remote Sensing" and "High Accuracy Elevation". These projects are partially funded by and contribute directly to the goals of the USGS Geographic Analysis and Monitoring, Land Remote Sensing, and Cooperative Topographic Mapping programs. Additional funding also provided by DOI's Critical Ecosystem Studies Program coordinated through the National Park Service.

Research Needs

Research needs, including those directly related to landscape mapping and topography, were compiled during the workshop. Participants were afforded the opportunity to identify research and data requirements that, once met, would make their monitoring and management activities more effective. The identified requirements provide a starting point for further discussion, planning, and conduct of collaborative research so that limited personnel and monetary resources can be used to produce the information most important in Everglades restoration. The needs identified by the participants are grouped into 1) landscape mapping and 2) topography categories. In no particular order, some identified requirements were:

Landscape Mapping

Expand the coverage of digital and hard copy satellite image maps like those created for the Southern Everglades.

Develop techniques to detect relevant land surface changes using remote sensing.

Collect data required to detect landscape change due to implementation of CERP and Modified Water Deliveries (MWD) projects.

Collect data required to track vegetative change from wet to dry season.

Create a process for mapping water flow resistance due to vegetation.

Explore methods for estimating water elevations using past and future satellite data sources.

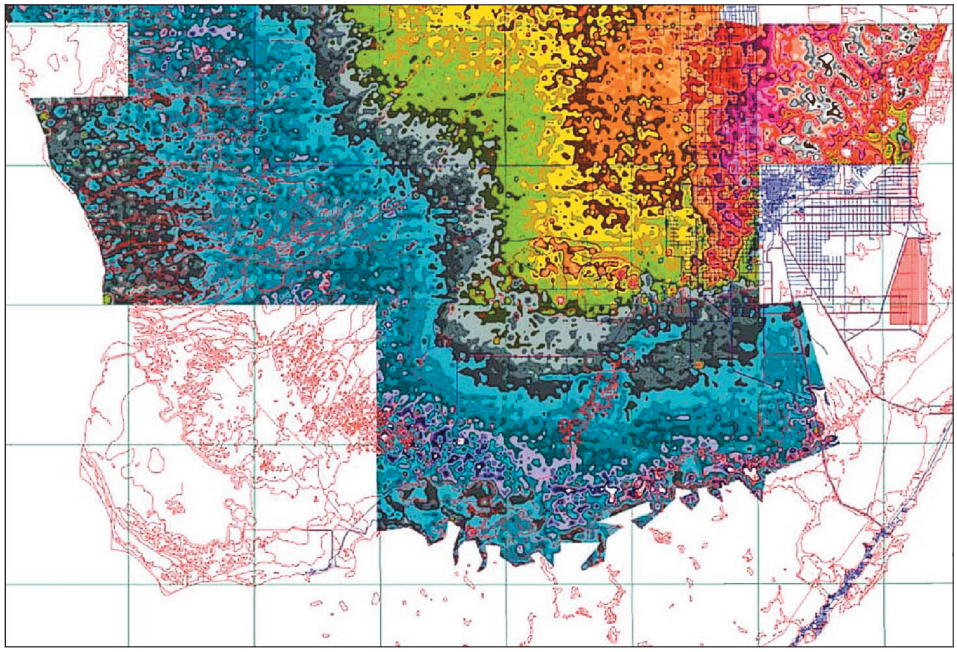
Develop mechanism for multi-agency coordination of ground-truthing and aerial/satellite data acquisition.

Topography

Complete topographic maps for the area encompassing the TIME (Tides and Inflows in the Mangrove Ecotone) models.

Create high resolution/accuracy topographic maps for WCA-1, WCA-2, and northern WCA-3A.

Collect bathymetric data for near-shore areas that have not been recently surveyed, including the southwest coast.



Southern Everglades topographic image

Increase spatial resolution of topographic data within selected landscape types, including ecotones, tree islands, ridge and slough, and rocky glades.

Map physical features including alligator holes and tree islands.

For Further Information

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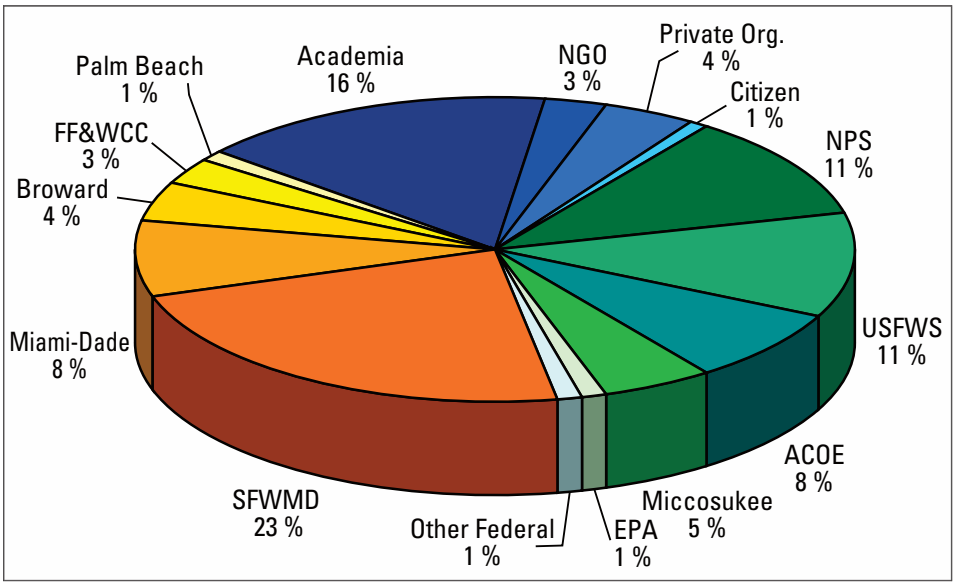

Participation by greater Everglades restoration partners during the 50-person Landscape Mapping and Topography Workshop (excluding USGS participants).