

## **Vital Sign:      **Vegetation Communities Extent & Distribution****

[shortened name: Veg\_Mapping]

### **Parks Where Vital Sign will be Implemented:**

1/3 BICY, BISC, BUIS, DRTO, SARI, VIIS – SFCN implements mapping  
EVER, 2/3 BICY – Comprehensive Everglades Restoration Program (CERP)  
RECOVER funded mapping

**Justification/Issues being addressed:** Vegetation Communities Extent & Distribution ranked 7<sup>th</sup> among the 44 SFCN vital signs. The spatial patterns of vegetation in wet prairies and marshes, forests, tree islands, mangroves, beaches and tidal wetlands are expected to change due to management regimes (regional hydrology changes by Everglades restoration efforts; fire), natural succession processes, sea level rise, and invasive species. A baseline and sound monitoring program should be established to track impacts of these changes at a regional scale. The mosaic and diversity of vegetation communities across the landscape strongly influences animal communities, food web-structure and distribution of rare plants. Vegetation patterns are also useful in planning for management, monitoring and visitors.

### **General Monitoring Questions to be Addressed by the Vital Sign:**

- What are the status and changes in the extent and distribution of vegetation communities, e.g., wet prairies and marshes, hammock forests, pine woodlands, scrub, and mangroves?
- What changes relate to ecotonal and community structure changes, especially those related to hydrology management, fire management, nutrient enrichment, storm damage, and sea level rise?

### **Measures:**

Extent, distribution, shape, orientation of vegetation community types using remote sensing

### **Basic Approach:**

Mapping of EVER and BICY is being done using a raster approach in which each 50m x 50m grid cell is classified according to the vegetation classification using 1:24000 color infrared photography and stereoplotters. CERP is funding mapping of most of EVER and 2/3 of BICY every 10? years for 30 years. The remaining portions of EVER and BICY will be funded by SFCN every 10-15 years using a consistent approach.

Mapping of BISC, VIIS, BUIS, and SARI will be mapped as vector based maps using at least 1:24000 photography and is expected to be done by outside contractors. DRTO will be mapped internally by SFCN & EVER park staff. Mapping is expected to be redone every 10-15 years.

### **Principal Investigators/Key Contacts and NPS Lead:**

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- Kevin Whelan, National Park Service, South Florida/Caribbean Inventory and Monitoring Network. Kevin\_R\_Whelan@nps.gov, 305-252-0347 [SFCN lead]
- USVI - USVI Department of Planning and Natural Resources

**Development Schedule, Budget, and Expected Interim Products:** Mapping efforts as part of the NPS I & M program vegetation map inventories are currently underway for western BICY and BISC which should be completed by the end of FY2007 or early FY2008. SFCN hopes to work with NPS staff internally to create a DRTO vegetation map by the end of FY2007. A second effort is working to further refine the Vegetation Classification for South Florida. SFCN hopes that the Inventory program will continue to fund initial inventory maps of BUIS, SARI, and VIIS. A complete map of EVER and BICY by CERP is expected in FY2011.

SFCN anticipates remapping parks every 10-15 years. Estimated costs include: NPS funded portion of BICY/EVER=\$500,000; BISC=\$75,000; VIIS/BUIS/SARI=\$80,000; DRTO=mapped by park staff (2-3 staff weeks). This assumes that CERP continues to re-map EVER every 5 years. It's also possible we may be able to coordinate with the USVI Department of Planning and Natural Resources to map the USVI parks. GIS Technician time should be allocated towards these projects especially the change analysis and contract management of the mapping contracts. Contract management should take approximately 3 months of SFCN time. Change analysis between maps approximately 1 month of time each year. Table indicates proposed SFCN workload upon full monitoring implementation.

Expected SFCN staff time requirements once program is fully implemented in 5 years:

SFCN Staff	Full Time Equivalent (FTE)
Coordinator	0.2
Marine Ecologist	
Fisheries Biologist	
Marine Biologist Technician (So FL)	
Marine Biologist Technician (VI)	
Community Ecologist	0.04
Wildlife Technician (Wildlife)	
Wildlife Technician (Vegetation)	
Quantitative Ecologist	0.08
Data Manager	
GIS/Data Tech	0.1
Interns	
SFCN Total	0.42