SOUTH FLORIDA WATER MANAGEMENT DISTRICT

MARSH VEGETATION METADATA

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Water Quality Bureau

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Technical Oversight Committee Meeting

Problems with Current Methodology

- Anecdotal data rather than empirical are being collected
- Format of the data inhibits accessibility
- Lack of formalized training programs to assure consistency of data collection
- Purpose of collecting data has not been well articulated

Anecdotal Vegetation Data

995, 1438 (1648) (1649)

P#: 52850 Date: 10/5/11 Collectors and Tasks: Kim 10/5/11

Pilot: JK Wells - District — MAD (1438) - collect ~~process~~

Weather: Partly Cloudy ~82°F — Kim (995) - notes, sonde

Windy ~20 Knots — MPW (1649) process

Training USFW to process samples, EJL + MPW — EJL (1648) - process

Methods: One 2L and one 1L nalgene bottles are used for sample collection (2L filled using 1L); sites accessed by float helicopter. Samples processed (FCEB also) and analyzed at District lab on Skees Road.

General information: DCS = depth to consolidated substrate. Corrected DCS = measured value + .03 m to account for length of tip of PVC pole.

Equipment		Acid (# drops)	H2SO4		HNO3	
Bucket #'s:	WQM 24, WQM 23	Lot #	50348		~~J1430~~ J41037 Kim 10/5/11	
Tray#'s:	WQM 51, FOC 3	Bt. Size	Sample	Blank	Sample	Blank
Other: Graduated PVC pole, syringes and		60 ml	4	4	4	4
.45u filters	D124851	250 ml	12	12		

Sample #	Collection time/ Collector	Processing time/processor	Site name	Sample type (SP, EB, FCEB, RS)	Corrected DCS (m)	Tdepth (depth of water column) (m)	Amount of suspended solids (NV, L, M, H)	pH<2? (Y/N)	Approx. dis. from collection site to helicopter (m)
-1	840 / MAD	1205 / MPW	Lox 6	SP	.37	.33	NV	Y	35

Description of Site: Spikerush, lilly, some sawgrass scattered in the area. Lots of vegetation in H_2O column, difficult to collect sample, bladderwort also present. used 250ml to fill bottles

Sample desc./comments: lab: medium yellow stain, No visible

P#: P54459 / P54156 Monthly Surface Water Grabs - Marsh

Pilot: JK (District)

Weather:

Collectors and Tasks: MJP - Notes, Sonde (245); ETL - Grabs (1648)

Collection Equipment: 2L Bottle 1L Bottle 60 mL Methods: 2L collected into Nalgene bottles (1L used to fill 2L). Sites accessed by float helicopter. Samples processed (FCEB also) and analyzed at District lab on Skees Rd.

General information: DCS = depth to consolidated substrate. Corrected DCS = measured value + .03 m to account for length of tip of PVC pole. TPO4 only samples are preserved (processed) in the field by the collector within a few minutes of collection.

Equipment		Acid	H2SO4		HNO3	
Bucket #'s:	SAUZD/KRACHER DI- SKEES	Lot #	50348		J41037	
Tray#'s:	STAID/ENR#2	Bt. Size	Sample	Blank	Sample	Blank
Other: Graduated PVC pole, syringes		60 ml	4	4	6	6
.45um filters Mfg.- Whatman's		120 ml				
Filter Lot#- D144019		250 ml	16	16		

Sample #	Collection time/ Collector	Processing time/processor	Site name	Sample type (SP, EB, FCEB, RS)	Corrected DCS (m)	Tdepth (depth of water column) (m)	Amount of suspended solids (NV, L, M, H)	pH<2? (Y/N)	Approx. dis. from collection site to helicopter (m)
-1	0839 / BL	1215 / ETL	LOX 6	SP	0.47	0.27	NV	Y	20

Description of Site: sawgrass slough, moderate eleocharis & lilly, moderate utricularia + rhynchospora

Sample desc./comments: medium yellow,

Team Members

- Donatto Surratt, Ph.D., Environmental Scientist/GIS Specialist, Contract Manager EVPA, ENP
- Rebekah Gibble, Ph.D., Senior Wildlife Biologist, USFWS
- Brad Robbins, Ph.D., Section Leader, SFWMD
- Kristin Larson, M.S., Staff Environmental Scientist, Field and Contract Manager EVPA, SFWMD
- Brent Warner, M.S., Science Technician Supervisor, SFWMD
- Robert Shuford, M.S., Staff Environmental Scientist, SFWMD
- Matt Powers, B.S., Environmental Scientist, SFWMD

Monitoring should fulfill one or more of these needs

- Be useful for understanding:
  - Current and historic ecological and hydrological trends
  - How vegetation communities are responding to management decisions
- Assist water management and restoration efforts
  - By supporting the development of predictive numeric models
- Provide local decision-support with respect to:
  - Water quality (water timing and intrusion management)
  - Extreme water levels (flood and drought)
  - Fire Management
  - Wildlife Issues
  - Safety
  - Other Purposes
- Support a range of scientific and/or management objectives

Proposed Solution

- Develop a methodology that could be utilized across the EVPA network
  - Rapid Visual Assessment (RVA) tool, which provides semi-quantitative vegetation data
- Develop an SOP and a training program to assure consistent data collection
- Minimize duplication of effort at stations (i.e., LOXA) sampled by both agencies
- Develop a vehicle that fosters communication

Primary Question for the Refuge

- What are the underlying natural dynamics of the Refuge's ecology and how are these impacted by management practices, especially with respect to water delivery (quantity and timing) and quality?
- Specifically, how are sensitive vegetation communities changing within the Refuge and are those changes related to water quality and hydrology?

Goals and Objectives

- Identify geographical areas of interest
- Identify floral and faunal species of interest
- Define target stages that optimize natural dynamics
- Define how spatial heterogeneity influences the ecosystem connectivity
- Identify relational congruence between ecological components and point sources
- Develop water quantity/quality “models” that can be used to generate **testable hypotheses** to better enable Refuge management
- Optimize the monitoring network to assure questions of concern can be addressed
- Synthesize recommendations for managers

Questions and Discussion