

South Florida / Caribbean Network

National Park Service



Standard Operating Procedure SET01

Mangrove Soil Surface Elevation Monitoring: Conducting Field Site Suitability Assessments—Version 1.00

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Summary

The following standard operating procedure (SOP) outlines the process of conducting field site suitability assessments, and therefore selecting sites, for the South Florida / Caribbean Network (SFCN) mangrove soil surface elevation monitoring. A substantial part of this SOP is based on the Southeast Coast Network SOP *Salt Marsh Community Monitoring: Conducting Field Site Suitability Assessments* (Asper and Curtis 2012).

Revision Log

Previous Version #	Revision Date	Author	Changes Made	Reason for Change	New Version #

Overview

The monitoring objectives and the environmental setting influence the selection of appropriate sample locations. A two-level selection process is applied to all potential sampling locations: inspection of aerial imagery either by itself or in concert with a National Park Service (NPS) vegetation map, and then field assessment of the site for additional criteria. Appendix B of the *Protocol Implementation Plan for Monitoring Mangrove Soil Surface Tables in South Florida / Caribbean Network Parks* (Whelan 2016) contains specifics about the first level (GIS analysis) of the selection process as well as the criteria used for the field site assessments. The appendix also documents the site visits and the choice of final monitoring sites.

Procedures

During the preliminary site visit, all personnel should approach the area with great care to maintain site and data collection integrity. The integrity of the data that will be collected at a later date depends on the natural functions of the wetland remaining undisturbed. Take care not to walk in areas that will later be within the perimeter of the site. In some cases, a partial boardwalk may need to be constructed in order to conduct the evaluation. The purpose of the preliminary visit is to determine site suitability for data collection based on the criteria listed in Appendix B of the mangrove soil surface table protocol implementation plan (Whelan 2016). A site evaluation form will be filled out at this time. Be prepared to measure peat depth, mark GPS coordinates, plan a possible boardwalk layout, and take photographs for documentation.

Field Procedures

Materials

- Site forms
 - RSET Site Selection
- Camera
- GPS
- Batteries
- Site maps

Instructions

1. Develop a field schedule in which sites are grouped together according to what is possible to complete each day.
 - a. Print small-scale maps of each park section.
 - b. Print large-scale maps of each site, generally at a scale between 1:2,000 and 1:4,500.
 - c. Laminate each map to protect from moisture.
2. Load GPS positions (UTM NAD83 Zone 17 N for South Florida and 20 N for the Virgin Islands) of each site into the GPS system used in the boat.
3. Print field forms (Appendix A of this SOP) for each site and at least 10% extra in case more forms are needed.

4. Develop and file the float plan.
5. Inventory and verify the working condition of each piece of equipment listed in the boat equipment check list (see SFCN safety SOPs) and the above materials list.
6. Load the boat and vehicle as appropriate.
7. Transport the boat and trailer to the boat launch.
8. Obtain a current coastal weather observation and forecast. Ensure that the current and near-term weather forecast is within the boat's operating standards.
9. Prepare the boat for launching and operation (use boat equipment check list; see SFCN safety SOPs).
10. Launch the boat and park the trailer and tow vehicle.
11. Navigate to the sites using the GPS system on the boat.
12. Assess the site's ability to support three platforms.
13. Complete the RSET Site Selection Criteria form (Appendix A) and take site photos as needed.
14. Document other species of interest within 10 meters of the site, noting species that do not normally occur in regularly flooded marsh or species of concern.
15. Stow equipment and gear.
16. Verify field forms are in order and completed.
17. Gently depart from the site and proceed to the next location.

Office Procedures

1. Download camera data onto computer and store as per network data management procedures.
2. Evaluate RSET Site Selection Criteria forms.
3. Choose final site(s) that best meet the site selection criteria.

Literature Cited

- Asper, J., and A. C. Curtis. 2012. Salt marsh community monitoring: Conducting field site suitability assessments. Southeast Coast Network Standard Operating Procedure NPS/SECN/SOP—1.3.1. National Park Service, Athens, Georgia.
- Whelan, K. R. T. 2016. Protocol implementation plan for monitoring mangrove soil surface elevation tables in South Florida / Caribbean Network parks. Natural Resource Report NPS/SFCN/NRR—2016/1249. National Park Service, Fort Collins, Colorado.

Appendix A—Site Evaluation Form

SFCN SET Site Evaluation Form (Version 1.0)				
Park _____	Observers _____	Date _____		
GPS Unit _____	Datum _____	UTM Zone _____	GPS error _____	
UTM E _____	UTM N _____	Elevation _____		
High Tide _____	Low Tide _____			
Directions to site _____				

	Circle	Explain		
Site safely accessible?	Y N		_____	

Site visible from boat?	Y N		_____	

Trash presence?	High	Medium	Low	_____

Pneumatophore presence?	High	Medium	Low	_____

Leaf litter?	High	Medium	Low	_____

Berms / mud banks?	Y N		_____	

Site accepted?	Y N		_____	

If accepted, is plot marked?	Y N		_____	

Site description _____				

Site distance from the water _____				

Figure A-1. SFCN SET site evaluation form, page 1.

Photos (from cardinal directions facing toward site)

	Photo #	Image file name (office)
North	_____	_____ N.jpg
East	_____	_____ E.jpg
South	_____	_____ S.jpg
West	_____	_____ W.jpg

Peat/Soil Depth

Mark# / E N	Depth	Comments
1) _____	_____	_____
2) _____	_____	_____
3) _____	_____	_____
4) _____	_____	_____
5) _____	_____	_____
6) _____	_____	_____
7) _____	_____	_____
8) _____	_____	_____
9) _____	_____	_____
10) _____	_____	_____

Canopy Cover

(densiometer - # of open squares)

North _____	East _____	South _____	West _____
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Dominant Vegetation Type in Cell

Canopy Height _____m

Relative Cover of Dominant Species in Tallest Stratum

(Generally all three strata should add to 100%)

(List 6 dominant species per strata with % cover of each)

Tree _____ % cover	Tree % cover
1) _____	4) _____
2) _____	5) _____
3) _____	6) _____
Shrub _____ % cover	Shrub % cover
1) _____	4) _____
2) _____	5) _____
3) _____	6) _____
Herb _____ % cover	Herb % cover
1) _____	4) _____
2) _____	5) _____
3) _____	6) _____

Canopy Height (m) Tree: _____ Shrub: _____ Herb: _____

Figure A-2. SFCN SET site evaluation form, page 2.