

Southeast Coast Network

National Park Service
Inventory & Monitoring Program



Standard Operating Procedure (SOP) #1.3.1

Salt Marsh Community Monitoring: Conducting Field Site Suitability Assessments

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Summary

The following Standard Operating Procedure (SOP) outlines the procedure involved for conducting field site suitability assessments and therefore, selecting sites for Salt Marsh Elevation and Vegetation Community monitoring.

Revision Log

Previous Version #	Revision Date	Author	Changes Made	Reason for Change	New Version #
	21July2014	L. C. Baron	Minor organizational changes and updates for 2014.	Minor organizational changes and updates for 2014.	1

Overview

At all parks, at least one sampling location will be selected for salt marsh elevation and vegetation community monitoring. Selection criteria are applied to all sampling locations in lieu of *a priori* categorization of some grid cells (i.e., 0.5-ha) as “exclusion zones” (Theobald et al. 2007). Creating exclusion zones can bias the design because of imprecision (spatially or temporally) in the geospatial data used as the foundation of the sample draw process or our lack of location-specific knowledge that could influence sampling-location inclusion (Theobald et al.

2007). Two levels of selection criteria are applied to all sampling locations: (1) those applied in a GIS where relevant data layers were available, accurate, and reliable, and (2) those applied in the field. Field evaluation is necessary because the resolution in available GIS data is too imprecise for a determination of the sample-ability or applicability of any given sampling location. Characteristics Evaluated in a GIS (refer to Byrne 2012, SOP 1.1.1)

Sampling locations are excluded from the sampling draw if:

- The site is greater than 20,000 yards (10 nautical miles) from a boat launching facility; however, this distance may be reduced or increased based on boat used, normal water conditions and accessibility.
- The site is not accessible by open water.
- The sampling location occurs on private in-holdings where access is not permitted.
- The characteristics of the sampling location do not allow for a 70 meter buffer from the sampling location that facilitates access or the location does not allow for the installation of three monitoring sites, including platforms 30 feet in length.

Characteristics Evaluated in the Field

Sampling locations are also excluded in the field if upon inspection:

- Verification that the GIS evaluation was imprecise, inappropriate resolution, or incorrect, thus precluding the location from being selected.
- Sites are not regularly inundated by tidal water, defined as at least one inundation event during any 24-hour period.
- Sites are visible from normal public view within park lands.
- Sites are not vegetated with typical salt marsh species (e.g., *Juncus roemerianus*, *Spartina alterniflora*).
- Sites are not accessible by boat at low tide. The boat should be able to bow into shore, and contact a 30-foot platform established as part of site preparation. Low tide is defined as two hours either side of mean low water.
- The sampling location is potentially unsafe.
- Signs of recent impacts or stressors such as by prescribed fire or wildlife disturbance or trampling are present.
- The sampling location is located within 25m of human alterations such as levees, roads, spoils, etc.

Make sure that the site is positive for all of the selection criteria. If the site is negative for any of the selection criteria, record the reason for not meeting the criteria on a datasheet and

move on to the next site on the list. Continue the search until all selection criteria are positively matched for one site. In the event a sampling location is omitted, the first alternate sampling location is selected (i.e., the next sampling location in order in which it was generated), the aforementioned criteria are applied, the sampling location is accepted or rejected, and if rejected the next consecutive alternate sampling location is evaluated with the same process.

Procedures

The sampling locations generated using RRQRR and that successfully meet the GIS criteria (see Byrne 2012, SOP 1.1.1) are then evaluated in the field using the steps below.

Field Procedures

Materials

- Site Forms
 - o RSET Site Selection
- Camera
- GPS
- Batteries
- Site Maps

Instructions

1. Develop a field schedule grouping sites together in what is possible to complete each day.
 - a. Print both small-scale maps of each park section or HUC 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.

NOTE: Visits to the sites should occur between 4 hours before and 4 hours after low tide. Doing site assessments while the tide is out ensures accessibility for installation and monitoring. Seasonal water level variations should also be taken into account, as certain areas have significantly different water levels at different times of the year. Pick field trip dates that coincide with daylight low tide periods.

2. Load GPS positions (UTM NAD83) of each site into the GPS system used in the boat.
3. Print field form (Appendix A) for each site and 10% extra in case more forms are needed.

4. Notify the park technical committee member of your proposed travel and field dates (See Communicating Field Operations with SECN Parks SOP #3.1.7) (DeVivo and Corbett 2013).
5. File the Float Plan a minimum of 48 hours prior to launching with the park technical committee member, network coordinator, and coastal ecologist, or equivalent as proscribed in SOP 3.1.2 (Boat Safety; Asper and Curtis 2013).
6. Inventory and verify the working condition of each piece of equipment listed in the boat equipment check list (Appendix B) and the above materials list.
7. Load boat and vehicle as appropriate.
8. Transport the boat and trailer to the boat launch.
9. Obtain a current coastal weather observation and forecast. Ensure that the current and near term weather forecast is within the boats operating standards. Refer to Boat Safety SOP (3.1.2; Asper and Curtis 2013).
10. Prepare the boat for launching and operation (use boat equipment check list; Appendix B).
11. Launch the boat and park the trailer and tow vehicle.
12. Navigate to the sites using the GPS system used on the boat.

NOTE: It is not necessary to visit the sites in order, but it is necessary to attempt to reach the lowest numbered sites before choosing a higher numbered site as the installation location.

13. Prior to beaching, assess the sites ability to support 3 platforms within a 70 m buffer of the sampling site.
14. Lightly beach the bow of the boat at the first site, maintaining minimal head way to get the boat in position.
15. Complete the RSET Site Selection Criteria Form (Appendix A).
16. Take horizontal site photos (360 degree photo representation of the site) and document on form. See SOP 1.1.5 (Photopoint Collection; Byrne et al. 2012).
17. 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.
18. Stow equipment and gear.
19. Gently depart site and proceed to the next location.

20. Repeat steps beginning with Step 13 for the remaining sites.
21. Verify field forms are in order and completed.

Office Procedures

1. Download camera data onto computer and store as per procedures in SOP 2.1.7 (Digital Photo Management; Southeast Coast Network (SECN) 2013).
2. Create a panorama using SOP 1.1.5 Photopoint Collection (Byrne et al. 2012).
3. Evaluate RSET Site Selection Criteria forms and panoramas.
4. Choose final sites using the lowest numbered sites that meet all of the site selection criteria.

Literature Cited

- Asper, J. R. and A. C. Curtis. 2013. Safe operation of Southeast Coast Network watercraft. Standard Operating Procedure NPS/SECN/SOP-3.1.2. National Park Service, Athens, Georgia.
- Byrne, M. W., J. R. Asper, A. C. Curtis, S. L. Corbett, B. D. Smrekar, and R. H. McManamay. 2012. Photopoint Collection.
- DeVivo, J. C. and S. L. Corbett. 2013. Communicating field operations with SECN parks. NPS/SECN/SOP-3.1.7. Southeast Coast Network, Athens, Georgia.
- Southeast Coast Network (SECN). 2013. Digital photo management: acquisition to archiving. Version 2. Standard Operating Procedure NPS/SECN/SOP-2.1.7. National Park Service, Athens, Georgia.

Appendix A – Field Forms

RSET Site Selection Criteria

Site (Park code and site number): _____ Date/Time: _____

Time of Low Tide: _____ Tidal Station: _____

Participant(s): _____

GPS Position: _____

Boat Ramp Used: _____ Distance from Boat Ramp: _____

Photo Number(s) of Site: _____ Travel time from ramp: _____

Is site within an area regularly inundated by tidal water? Yes No

Is site accessible by boat at low tide (two hours before/after)? Yes No

Is site within 5 nautical miles (10,000 yards) of boat ramp? Yes No

Is site a vegetated salt marsh? Yes No

Is site out of normal public view from Park lands? Yes No

Is site absent of recent impacts or stressors? Yes No

Is site within 25m of human alterations? Yes No

Vegetation consist of: _____

Soil or surface material: _____

Description / Comments: _____

Appendix B – Field Preparation Checklists

Boat Use Checklist

Boat Pre-Start

- ☐ File Float Plan
- ☐ Install Hull plugs
- ☐ Check Fuel Level
- ☐ Check Mooring Lines
- ☐ Check Engine Oil
- ☐ Check Fuel Line
- ☐ Check battery and cable connection
- ☐ Check anode
- ☐ Verify Safety Equipment
 - o Flares (check expiration)
 - o PFDs (for everyone in boat)
 - o Fire extinguisher
 - o Throwable
 - o Emergency kit
- ☐ Turn on power switch
- ☐ Choke (as necessary)
- ☐ Pump Fuel Bulb (as necessary)
- ☐ Crank
- ☐ Verify coolant discharge

While Running

- ☐ Check Coolant periodically
- ☐ Check Jet drive Intake (for vegetation that has been sucked in)

Trailing

- ☐ Check Zerk fittings
- ☐ Check Straps
- ☐ Check Tires
- ☐ Check Hitch (hitch, locks, chains)
- ☐ Check Lights
- ☐ Empty boat of loose gear

Boat Post-Use

- ☐ Check oil
- ☐ Pull hull plugs
- ☐ Connect fresh water wash and crank engine (run for 15 minutes)
- ☐ Clean boat and trailer
- ☐ Clean bilge
- ☐ Grease Jet Drive (Low pressure)
- ☐ Dry and stow gear
- ☐ See trailering
- ☐ Refuel Tanks
- ☐ Clean life jackets

Boat Equipment Checklist

In Boat

- ☐ Anchor and rope
- ☐ Tool box
- ☐ 1 full quart oil
- ☐ 1 quart fuel stabilizer
- ☐ Throw rope
- ☐ Funnel (for oil)
- ☐ 1 White rope 50'
- ☐ 2 Tan ropes 23'
- ☐ 2 White ropes 25'
- ☐ Throw cushion (red)
- ☐ Wheel bearing grease and gun
- ☐ Low pressure grease gun/grease for jet
- ☐ Flare box (orange)
- ☐ Hand bilge pump
- ☐ Bailer
- ☐ Bag with towels
- ☐ Lug wrench
- ☐ 1 Gas tank
- ☐ Fire extinguisher
- ☐ Paddle
- ☐ Push pole
- ☐ Boat hook
- ☐ Battery case
- ☐ Battery
- ☐ Log Book
- ☐ Engine Manual

With Boat

- ☐ Water Hose
- ☐ Nozzle

Toolbox

- ☐ Boat Plugs
- ☐ 9pc Wrench Set
- ☐ Tire Pressure Gauge
- ☐ Wing nuts
- ☐ Fuses
- ☐ Motor wash hose adapter
- ☐ 4 way sillcock key
- ☐ Zip ties
- ☐ Wire stripper/ crimper/cutter
- ☐ Spark plugs
- ☐ Silicone sealant
- ☐ Latex gloves
- ☐ WD-40
- ☐ Tool kit (Honda)