

Southeast Coast Network

National Park Service
Inventory and Monitoring Division



Standard Operating Procedure 1.2.13

Wadeable Stream Field Season Preparation for Stream Monitoring—Version 1.1

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Summary

The following standard operating procedure (SOP) outlines steps and procedures to follow prior to collecting wadeable stream habitat data in Southeast Coast Network (SECN) parks. Information outlined in this SOP is based closely on the USGS National Water Quality Assessment (NAWQA) wadeable stream assessment protocol (Fitzpatrick et al. 1998). Procedures are customized for use in streams draining the Piedmont and Coastal Plain park areas in the Southeast Coast Network.

Revision Log

Revision Date	Author	Changes Made	Reason for Change	New Version #
2022/03/24	Cooper, C. S.	Updated file storage pathways	Operational Review	1.1

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New Reach Selection

Reaches chosen for monitoring under this protocol will remain static. In the event that new reaches are to be selected, this activity should be conducted during the winter or early spring months. Selection during these months allows time to conduct a reach visit, complete the initial reach assessment, and install the permanent benchmarks. Detailed instructions for selecting new reaches can be found in SOP 1.2.14 *Wadeable Stream Reach Selection and Location of Sampling Points—Version 1.1* (McDonald et al. 2022a). Additionally, if a new monitoring reach is chosen, a basin- and segment-scale analysis should also be performed following the detailed instructions in SOP 1.2.15 *Wadeable Stream Basin- and Segment-Scale Data Summary—Version 1.0* (McDonald et al. 2018).

Notification to Parks of Intent to Sample

The resource manager or another appropriate member of park staff should be notified at least three months prior to the intended starting date for collection of stream habitat data. Official description of notification procedures can be found in SOP 3.1.07 *Communicating Field Operations with SECN Parks—Version 3.0* (DeVivo and Corbett 2016).

In addition, a field itinerary (SECNShare:\Monitoring\StreamHabitat\Wadeable\Forms\) should be provided to the park at least one week ahead of field work (Appendix A). The field itinerary is intended to communicate to the park who will be surveying, when the surveys will be taking place, and where the monitoring will be done. The field itinerary also serves as a record of field activities for future reference.

Training

A field crew must be identified (at least three individuals) and trained to collect reach-scale data according to SOP 1.2.16 *Wadeable Stream Reach-Scale Field Data Collection—Version 1.1* (McDonald et al. 2022b). This training will involve a mock stream survey with all members of the field crew collecting data at one of the streams to be surveyed during the field season.

The purpose of this training is to:

1. Serve as an equipment check, ensuring that all needed equipment is assembled and in good working order.
2. Allow for existing personnel to re-familiarize themselves with the data collection process and data sheets.
3. Allow new personnel to become acquainted with the techniques required to collect the data accurately and efficiently.
4. Collect data that will be used to assess the quality (repeatability) of the measurements taken as part of this protocol.

This training session is important as the field crew members will be working with complicated equipment, including a robotic total station. See SOP 1.2.17 *Setting Up and Configuring a Total Station—Version 1.1* (McDonald et al. 2022c) for instructions on how to set up the total station. See SOP 1.2.18 *Using a Total Station to Conduct a Stream Survey—Version 1.1* (McDonald et al. 2022d) for instructions on how to use the total station to survey wadeable streams.

This training should be conducted early enough in the field season to allow time for repairs of existing equipment or for replacement equipment to be ordered. Conducting a mock stream survey also will improve data quality, especially at the first reach that is officially monitored each year. During training, each crew member will take turns measuring the standard transects and detailed transects. Though the field crew will likely split into two groups, either collecting standard or detailed transect data while conducting the surveys, all field crew members need to have an understanding of all of the methods that are used to collect data for this protocol. Additionally, the multiple resurveys will provide an understanding of the quality of the data that are collected by the methods outlined in SOP 1.2.16 (McDonald et al. 2022b) and SOP 1.2.18 (McDonald et al. 2022d).

Equipment Check Out

Shared equipment outlined in SOP 1.2.16 (McDonald et al. 2022b; i.e., the total station and TSC3 handheld) should be checked out according to SECN programmatic policy (*Management and Communication Policies for Shared Lab and Field Equipment*) prior to conducting field work in a park. This policy can be found on the [SECN SharePoint site](#). Vehicles necessary for completion of field work should also be reserved via the SharePoint site.

All non-shared field equipment specified in SOPs 1.2.16 (McDonald et al. 2022b), 1.2.17 (McDonald et al. 2022c), and 1.2.18 (McDonald et al. 2022d) should be gathered together and placed in a pre-defined ‘staging’ area so that all team members know where the equipment has been stored.

Datasheets and Reach Maps

Prior to the field season, datasheets (Form A, and Forms 1–5) outlined in SOP 1.2.16 (McDonald et al. 2022b) should be printed on water-resistant paper and filled out with basic reach information (e.g., stream, reach name and number, reach length (distance between transects), permanent benchmark locations). If this is not the first time a reach has been surveyed, the previous survey’s datasheets and reach map should be printed out and brought with you to help navigate back to the survey reach, facilitate reach setup, and to help re-identify important geomorphic surfaces (e.g., bankfull heights).

Benchmark Coordinates for Total Station Surveys

If a resurvey is scheduled, a week or two prior to conducting field work, the coordinates of the survey benchmarks and any possible tie-in points need to be transferred from the previous survey job (on the TSC3) to the job that will be used to conduct the current survey using the following instructions:

1. Create a new job on the TSC3.
2. Use the “Copy between jobs” option in the Jobs menu.
3. Select the job to copy from and to, select Copy: “Points”, and then accept (leave “Copy duplicate points” box unchecked).
4. On the “Select points” screen, highlight “Select from list” then press “Enter”.
5. Be sure to select all three of the permanent benchmarks as well as any tie-in points that were installed (selections will have a check mark to the left of their ID) before pressing “Enter” to complete the transfer.

For detailed instructions on the use of the TSC3 see SOP 1.2.17 (McDonald et al. 2022c).

Safety

The major risks encountered when conducting this activity are injury or loss of life while in transit to and from field sites, or while performing data collection. Based on a job hazard analysis (JHA) of the protocol (and the identified risk abatement measures), it was determined that the protocol can be safely implemented provided that SECN staff implement the protocol in accordance with the referenced SOPs and identified risk abatement measures. Prior to conducting field work, staff should review the most current JHA posted on the server (SECNShare:\Monitoring\StreamHabitat\Wadeable\JHA) and the USGS safety in field activities manual (Lane and Fay 1997).

In addition to the procedures and requirements promulgated by the [NPS Occupational Safety and Health Program](#) (NPS 2008), all wadeable staff should be certified in basic first aid. Obtaining additional levels of training beyond basic certifications will be encouraged in order to increase the overall level of safety and awareness.

Literature Cited

- DeVivo, J. C. and S. L. Corbett. 2016. Communicating field operations with SECN parks—Version 3.0. Southeast Coast Network Standard Operating Procedure NPS/SECN/SOP—3.1.07. Southeast Coast Network, Athens, Georgia. Available at: <https://irma.nps.gov/DataStore/Reference/Profile/2238044> (last accessed May 2022).
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- National Park Service. 2008. National Park Service occupational safety and health program-Reference Manual 50B. Washington, D.C. Available at: <https://www.nps.gov/policy/RM50Bdoclist.htm> (last accessed May 2022).

Appendix A. Example Field Itinerary Form

To be submitted to program manager and park contact at least one week prior to trip.

SECN AQUATIC DIVISION FIELD ITINERARY FORM	
<i>To be submitted to Program Manager and Park Contact at least one week prior to planned trip.</i>	
<i>This form may contain confidential information and must be kept secure</i>	
Field Crew Supervisor	Eric Starkey-SECN Aquatic Ecologist
Field Crew Leader	Eric Starkey
Monitoring Project etc	Stream/River Channel Characteristics HOBE
Field work description	Non-wadeable stream channel monitoring protocol implementation. Videography and transect surveys on the Tallapoosa River. Area of interest survey (detailed Tallapoosa River bank survey) Wadeable stream channel monitoring protocol implementation. Benchmark installation and survey of stream (see figures below).
Dates of field work	7/25/2016 to 7/27/2016
Transportation arrangements	Eric Starkey, Brian Gregory, and Jake McDonald will drive from Athens GA to HOBE in the SECN's GSA rig (White Chevy Dually Pickup). Access to area of interest survey: from loop road near office. Access to non-wadeable site: 1) Launch Kayak into the Tallapoosa River from Old Shepard Rd. and road/powerline cut along the eastern park boundary. 2) One person will shuttle vehicle to the take-out point 3) Kayaks will be floated downstream to western boundary 4) Kayak back upstream to boat ramp take-out. Access to wadeable sample site will be via foot from Duck Road (see map on last page).
What will be the contact arrangement with the Park contact?	Primary contact person: Brian Robinson Phone number: 256-234-7111, after hours: XXX-XXX-XXX Cell XXX-XXX-XXX Frequency of contacts: Pre-trip, on arrival in the park, when field work has been completed. Instructions: Check in should occur with Brian in the office. If Brian and alternate contact cannot be reached, check in/out should occur in person with other park staff in the visitor center.
What shall SECN staff do if no contact is made with primary contact?	Alternate contact persons: Barbara Tagger Phone numbers: 256-234-7111, after hours: XXX-XXX-XXX Cell XXX-XXX-XXX Instructions: If Barbara and primary contact cannot be reached, check in/out should occur in person with other park staff in the visitor center.
What shall park staff do if no contact is made with SECN field crew?	If SECN field crew has not made contact by 7:00 pm, the park contact should try to call field crew using cell phone(706-286-0355), respond to previous InReach locator beacon messages and/or radio transmission. If still no contact with field crew is made, park contact should call SECN Program Manager (Brian Gregory (cell): 678-409-3671). Begin initiating search if no contact is made with field crew.

Figure A-1. Example Field Itinerary Form, page 1 of 4.

DETAILS OF PARTICIPANTS		
NAME	STATUS SECN staff, UGA intern, volunteer	JOB HAZARD ANALYSIS ATTACHED? (Mandatory)
Eric Starkey	SECN Staff	Yes
Brian Gregory	SECN Staff	Yes
Jake McDonald	UGA research associate	Yes

ITINERARY DETAILS			
DATE/TIMES	LOCATION	ACCOMMODATION	CONTACT DETAILS
Monday August 25th Departure: 6:30 AM (EST) Arrival: 11:00 AM (CST)	Travel from Athens GA to HOBE Check in with park.	HOBE housing	SECN cell phone: (706) 286-0355 Will check in with the SECN park contact upon arrival.
1:00 PM (CST)	Tailgate safety meeting. Launch kayaks and begin non-wadeable survey.		
1:30 PM (CST)	Area of interest survey.		Crew will check out with HOBE park contact at the conclusion of field work (Brian R.).
4:30 PM (CST)	Take kayaks out at boat ramp		
Tuesday August 26th 7:00 AM (CST)	Tailgate safety meeting. Initial site assessment and benchmark install at wadeable stream site.	HOBE housing	SECN cell phone: (706) 286-0355 Crew will check out with HOBE park contact at the conclusion of field work (Brian R.).
10:00 AM (CST).	Wadeable stream survey		
4:30 PM (CST)	Check out with HOBE park contact.		
Departure: 7:00 AM (CST) Arrival ~10:00 PM (EST)	Drive back to Athens, GA. Unload gear at office.	Duty station	SECN cell phone: (706) 286-0355

Figure A-2. Example Field Itinerary Form, page 2 of 4.

RISK ASSESSMENT				
FIELD WORK ACTIVITY	POTENTIAL HAZARD What might harm you?	RISK RATING (Extreme, High, Medium, Low)	CONTROLS What are you going to do to make this activity as safe as possible?	PERSON WHO WILL ENSURE THIS HAPPENS
Stream Channel Monitoring	See JHA	Low (see GAR in protocol)	Daily communication with park contact, proper preparation of safety gear and equipment prior to fieldwork. Changes to field itinerary will be communicated with park contact. Park radio/cell contact for serious emergencies.	Eric Starkey
See attached JHA for activities and hazards				

ITEMS THAT WILL BE COMPLETED PRIOR TO THE FIELD WORK	
	Tick as appropriate
Participants briefed on details of proposed field work; relevant safety policies, procedures and expected conduct while in the field	X
Job Hazard Analysis signed by all participants	X
All equipment, vehicles and tools will be checked for safety compliance prior to field work commencing	X
I have made the necessary provisions for emergency situations such as the appropriate level of first aid, emergency contact telephone numbers; e.g., helicopter rescue, police, fire, etc	X
I have checked with participants whether they have any medical conditions that should be disclosed	X
I have checked that appropriate licenses, permits and agreements with have been obtained and are up to date for the use of specialized equipment such as boats.	X

Figure A-3. Example Field Itinerary Form, page 3 of 4.

PEOPLE RESPONSIBLE FOR SUBMISSION AND APPROVAL		
NAME	SIGNATURE	DATE
Field Work Supervisor		
Field Crew Leader		
Program Manager Based upon the information in the above Field Itinerary Plan: ☐ Approve XX ☐ Do not approve ☐ Grant conditional approval		
Primary Park Contact Based upon the information in the above Field Itinerary Plan: ☐ Approve ☐ Do not approve ☐ Grant conditional approval		
Conditions of approval, if relevant		
NOTE:- • A copy of this Field Itinerary Plan and associated Job Hazard Analysis forms are filed in the SECN Athens office. • Copies of all volunteer forms are filed in the SECN Athens office.		

Figure A-4. Example Field Itinerary Form, page 4 of 4.