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Standard Operating Procedure #1: Preparing for the Field Season, Version SCPN_WATER_QUALITY_SOP01_20160901

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Version SCPN_Water_Quality_SOP01_20160901				
Revision History Log				
Previous version number	Revision date	Section and paragraph	Change(s) made	Approved by

Only changes in this specific SOP will be logged here. Record the previous version number and date of revision; identify sections and paragraphs where changes were made, who approved the revision, and the new version number. More detailed descriptions of the changes made and the reason for the changes is provided at the end of this SOP.

This Standard Operating Procedure (SOP) describes pre-season procedures for monitoring water quality in SCPN parks. The procedures are primarily the responsibility of the project manager and the hydrologic technician, who should be familiar with the monitoring protocol narrative before initiating this and subsequent SOPs. Included in this SOP are a description of general preparations and field season scheduling considerations. A yearly project task list is provided in Appendix A, and a list of necessary supplies and equipment for sampling is provided in Appendix F. These procedures should commence at the beginning of each calendar year.

1 General review, planning and preparations

1.1 Review the SCPN Water Quality Monitoring Protocol narrative and all SOPs.

The hydrologic technician should be thoroughly familiar with the objectives described in the SCPN *Streams and Springs Water*

Quality Monitoring Protocol. This person should also have a solid working knowledge of the conceptual models that summarize existing knowledge and hypotheses about the structure and functioning of riparian and aquatic ecosystems on the Colorado Plateau (Scott et al. 2005).

1.2 Identify specific sampling goals.

The hydrologic technician should discuss specific sampling goals, trip scheduling and crew member responsibilities with the project manager. Goals for the upcoming season and a realistic timeline to meet the goals should be established. The hydrologic technician should review notes from previous seasons and be familiar with any unique conditions (i.e., hazardous routes, missing markers) that were encountered during that season.

1.3 Prepare/update site folders.

The project manager or the hydrologic technician should check each site folder to make sure that it includes all of the necessary information and is up to date (SOP #3).

1.4 Obtain permits

The SCPN project manager and the hydrologic technician will obtain all necessary permits. NPS Scientific Research and Collecting Permits should be obtained for each park using the NPS Research Permit and Reporting System website, <http://science.nature.nps.gov/research>. For each sampling trip obtain all required backcountry hiking and camping permits or specific permissions for each park where samples will be collected. This should be done through park backcountry offices, park resource managers, law enforcement rangers, or other designated park staff.

1.5 Prepare supplies and equipment

The hydrologic technician should inventory and inspect all of the field equipment and supplies needed for the year (see Appendix F for a complete list and SOP #4 for instructions on equipment maintenance and preparation). Equipment should be checked to ensure that it is in optimum working condition. In addition to sampling equipment, additional items that will be needed for water quality monitoring include datasheets, field notebooks, GPS units, maps, preservatives, camping gear, and safety equipment.

The project manager or the hydrologic technician should assess, organize and purchase supplies based on the year's site establishment and revisit plan:

- At the beginning, and several times throughout the year, inventory calibration solutions, sample bottles, preservative, and shipping supplies. Order new supplies, if necessary, so that there will be enough to last for several months. Be sure to check expiration dates of all perishable items. Print a new set of datasheets on waterproof paper and create new bottle labels for each set of samples.
- Group equipment and supplies together into containers according to monitoring activity. Each container should include a checklist of all of the supplies contained therein.
- Make sure that all field equipment is

available, functional and organized at least one month before field work is scheduled to begin. Some equipment should be checked periodically throughout the year. For example, multi-parameter sondes and the turbidimeter should be checked on a regular schedule.

2 Scheduling field work

Water quality sampling will be conducted 3 to 4 times each year in selected perennial streams in SCPN parks. Samples will be collected opportunistically in ephemeral or intermittent streams when there is flow. Water quality sampling at springs will be coordinated with scheduled site visits. A tentative schedule should be drafted for the entire year. The schedule should efficiently coordinate SCPN water resources vital sign monitoring programs and take into account all logistical considerations. This schedule will provide an initial plan for the year, but should remain flexible to accommodate unforeseen circumstances. Possible reasons for schedule changes include weather, road conditions, delays in obtaining backcountry permits, travel time between sites and other, sometimes unpredictable accessibility issues. The number and geographic distribution of sample sites and available field crew members will also influence the schedule.

3 Revision history

Provide the following information for each revision made to SOP #1.

New version:

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Date:

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Sections affected:

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