

Northern Great Plains Network

National Park Service



Equipment and Supply Lists

Stream Channel Monitoring

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Summary

This standard operating procedure (SOP) contains equipment and supply lists for NGPN Stream Channel Monitoring (Thornbrugh et al. 2019).

Revision Log

Previous Version	Revision Date	Author	Changes Made	Reason for Change	New Version
1.0	12/15/22	Anine Rosse	Revised list to reflect current field activities	Update Equipment List	1.1

Equipment and Supply Lists

Sampling/data collection

- GPS or maps, Ipad with Field Maps with index sites and transect points loaded is appropriate and useful. Download areas in field maps prior to field use
- Government cell phone for back-up, communication, and additional camera
- Walkie talkies as back up communication method
- GPS receiver, cable, and antenna
- Metal detector (to relocate possibly buried index marks and rebar)
- 1 roll colored flagging tape
- Pin flags for marking transects and diagnostic points
- Chaining pins, set of 11
- 3 to 4 pairs chest waders with pockets and safety belt, one for each crew member
- 1 or 2 fisherman's vests with lots of pockets and snap fittings (optional) or may use backpacks for equipment
- Digital camera with spare batteries
- Whiteboard, dry erase markers (2), and eraser
- Scientific calculator with sin and cos buttons
- Convex spherical canopy densiometer (Lemmon Model B), modified with taped "V" (2)
- Clinometer (2)
- Inclinator or digital level
- 100 m measuring tape with reel (2)
- 50-meter reel tape (1)
- Meter stick for bank angle measurements (2)
- Stadia rod (round profile, metric scale, 5.0m extended) (2)
- Laser range finder (400 ft. distance range)
- Mason line for cross-section identification and bank heights

- Hanging level for bank heights
- Compass x 2
- Field Operations Manual and/or laminated Quick Reference Guide
- Maps and access instructions
- Copy of earlier data collection forms
- Sampling permits and/or permission letters

Detailed Transect measurements (in addition to those above)

- Total station and accessories ¹
 - Prism and pole
 - Measuring tape
 - Compass
 - Charged Batteries for SX-10
 - SX-10 or similar unit
 - Tripod and Tribrach
 - Trimble TSC3/7 data collector (handheld) with extra batteries
 - Hand-held clamp and cradle (to attach to pole)
 - Radio-link antenna (for hand-held)
 - USB cable for importing data from data collector

Discharge measurements (in addition to those under Sampling/Data collection)

- Current velocity meter, probe, and operating manual
- Top-set wading rod for use with current velocity meter

¹ See the Setting Up and Configuring a Total Station SOP and the Using a Total Station to Conduct a Stream Survey SOP for additional detail on use of total station.

For recording data-data sheets

- 2 covered clipboards (lightweight, with strap or lanyard)
- Rite in the Rain – all weather writing paper
- Soft (#2) lead pencils or 0.9 mm HB lead mechanical pencils

Data sheets

- 1+ extras field form: Discharge Measurements
- 3+ extras field form: Detailed Cross Sections
- 3+ extras field form: Tie-In points
- 1+ extras field form: Reach Map
- 1+ extras field form: Standard Transect Assessments Forms 1 and 2
- 1+ extras field form: Reach Characterization
- 6+ extras field form: Photographic Record Sheet

Site Establishment and Marking (in addition to above)

- Rebar, ½” x 12” - 6 for each site/reach + 3 extras
- Urethane-faced, dead blow hammer (e.g Lixie 250H-TT)
- Leather gloves
- Safety glasses, ANSI Z87.1 impact resistant
- Labeled caps

General and Safety Equipment

- First aid kit
- Sanitizer, antibacterial soap, or other way to clean water-exposed hands and skin.
- Batteries
- GS High Dilution Disinfectant 256 (for disinfectant)
- Plastic storage tub
- Cell phone, 2-way radios and/or walkie-talkies, smart device
- Satellite messenger (for remote/backcountry work)

- Lifejackets (1/person) ~ 3 x PFDs
- Type IV PFD (Throwable Life Saving device)
- Sunscreen (individuals must provide their own)
- Insect repellent (individuals must provide their own)
- Insect head net for each person
- Water bottles or other hydration systems (e.g., Camelback)

Literature Cited

Thornbrugh, D. J., I. W. Ashton, A. R. Jarding, J. S. Mills, and K. Paintner-Green. 2019. Protocol implementation plan for stream channel monitoring in the Northern Great Plains Network: narrative version 1.0. Natural Resource Report NPS/NGPN/NRR—2019/1918. National Park Service, Fort Collins, Colorado.