

National Park Service
Inventory and Monitoring Division



Equipment and Supplies—Version 1.0

Bracewell, J. 2017. Equipment and supplies—Version 1.0. Gulf Coast Network Standard Operating Procedure NPS/GULN/SOP—SHR01. Gulf Coast Network, Lafayette, Louisiana.

This standard operating procedure (SOP) details the items needed to execute the Gulf Coast Network shoreline position monitoring protocol (Bracewell 2017). The shoreline position protocol requires three major types of equipment, as well as a field data form and a field item checklist that includes safety items. The equipment types include: GPS/GNSS system with sub-meter horizontal accuracy; Off-road vehicle and mounting device to carry the GPS/GNSS; and a PC capable of communicating with the GPS/GNSS data logger for pre- and post- survey activities.

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GPS/GNSS System

Any GPS/GNSS system may be used if it has sub-meter accuracy and is capable of post-processed differential correction, or if it can accommodate real-time differential-correction of the survey points, such as the Trimble GeoExplorer 3000 series (GeoXT, GeoXH) or Trimble 6000 series (GeoXH, Geo7x). Operational settings and parts for each of the GPS/GNSS systems may be different.

Transportation Requirements (When driving rather than walking shoreline)

- Vehicle with spark resistor plugs (to eliminate radio interference);
- Off-road vehicle (4×4) with GPS/GNSS mount or,
- Utility Transport Vehicle (UTV) with GPS/GNSS mount (Figure 1);
- Shovels;
- Wooden boards; and,
- Extra fuel.



Figure 1. Example of a Trimble GeoXH GNSS unit, with internal antenna and data logger, mounted on a utility task vehicle (UTV). Photo courtesy of Lisa Baron, Southeast Coast Network.

Office Computer Equipment

A personal computer (PC) that meets the minimum specifications for running GPS and GIS software is required. The NPS minimum standard for computer equipment meets these requirements.

Software

- A program capable of post-processing the collected field data (for example, Trimble Pathfinder Office).
- ArcGIS Desktop edition and Digital Shoreline Analysis System (DSAS). For information about matching versions of ArcGIS and DSAS, see <http://woodshole.er.usgs.gov/project-pages/DSAS/>

Internet Connectivity

An internet connection (28.8 kbps modem or faster) is needed for viewing the satellite almanac and tide charts (GULN SOP SHR03—*Survey Timing and GPS Mission Planning*; Bracewell 2017a), conducting differential corrections (GULN SOP SHR07—*Change Calculation, Data Analysis, and Reporting*; Bracewell 2017c), and maintaining the GPS software/firmware updates.

Forms and Checklist

In addition to the GPS/GNSS and transportation equipment, there are field forms and SOPs used in the preparation and execution of each survey:

1. Field copy of GULN SOP SHR05—*Conducting the GPS Shoreline Survey* (Bracewell 2017b)
2. Field copy of the Field Data Form (GULN SOP SHR05)
3. Office copy of the Field Item Checklist (Appendix 1)

Literature Cited

- Bracewell, J. 2017. Monitoring shoreline position at Gulf Coast Network parks: Protocol implementation plan. Natural Resource Report NPS/GULN/NRR—2017/1501. National Park Service, Fort Collins, Colorado. Available at: <https://irma.nps.gov/DataStore/Reference/Profile/2243708> (last accessed August 2017).
- Bracewell, J. 2017a. Survey timing and GPS mission planning—Version 1.0. Gulf Coast Network Standard Operating Procedure NPS/GULN/SOP—SHR03. Gulf Coast Network, Lafayette, Louisiana. Available at: <https://irma.nps.gov/DataStore/Reference/Profile/2242365> (last accessed August 2017).
- Bracewell, J. 2017b. Conducting the GPS shoreline survey—Version 1.0. Gulf Coast Network Standard Operating Procedure NPS/GULN/SOP—SHR05. Gulf Coast Network, Lafayette, Louisiana. Available at: _____ (last accessed August 2017).
- Bracewell, J. 2017c. Change calculation, data analysis, and reporting—Version 1.0. Gulf Coast Network Standard Operating Procedure NPS/GULN/SOP—SHR07. Gulf Coast Network, Lafayette, Louisiana. Available at: <https://irma.nps.gov/DataStore/Reference/Profile/2242639> (last accessed August 2017).

Appendix 1 - Field Item Checklists

GPS/GNSS Equipment

- ☐ GPS/GNSS data logger, fully charged
- ☐ Backup battery if possible or car charger for GPS
- ☐ GPS/GNSS mount cradle and pole bracket (if using)
- ☐ PVC to attach pole bracket to UTV (if using)
- ☐ Hose clamps (two) to attach PVC to UTV (if using)
- ☐ Screwdriver (for hose clamps, if using cradle)

Transportation Equipment

- ☐ UTV or 4×4
- ☐ Boards/rope or tow cable/shovel
- ☐ Sufficient fuel
- ☐ Extra fuel can
- ☐ Tire pressure gauge

Auxiliary Items

- ☐ Cell phone or radio with charged battery
- ☐ Field copy of GULN SOP SHR05
- ☐ Field copy of Field Data Form
- ☐ GPS/GNSS receiver operators manual
- ☐ List of emergency phone numbers
- ☐ List of park contact numbers
- ☐ Camera/batteries/chargers

- ☐ Duct tape
- ☐ Measuring tape
- ☐ Pens and pencils
- ☐ Bungee cords and/or zip ties
- ☐ Towels/rags

Safety Items

- ☐ Personal flotation device (PFD)
- ☐ Food and water
- ☐ Insect repellent
- ☐ First aid kit
- ☐ Rain gear
- ☐ Sunglasses
- ☐ Sunscreen
- ☐ Hat