

Standard Operating Procedure (SOP) #23

After the Field Season

Version 2.02 (August 11, 2021)

Change History

New Version #	Revision Date	Author	Changes Made	Reasons for Change	Previous Version #
2.00	6/30/2007	Eric Brown	See Track Changes	Response to reviewer's comments	1.00
2.01	8/2/2007	Larry Basch	See Track Changes	Clarifications, corrections, comments, additions	2.00
2.02	8/11/2021	Kelly Kozar	Updated SOP #s. Minor content change.	Added a geospatial SOP and had to renumber subsequent SOPs. To make consistent with Marine Fish After the Field Season SOP.	2.01

Only changes in this specific SOP will be logged here. Version numbers increase incrementally by hundredths (e.g., version 1.01, version 1.02) for minor changes. Major revisions should be designated with the next whole number (e.g., version 2.0, 3.0, 4.0). Record the previous version number, date of revision, author of the revision, changes made, and reason for the change along with the new version number.

Purpose

This SOP explains chronological actions after the field season for personnel involved in the Benthic Marine Community Vital Sign Monitoring Protocol and associated Standard Operating Procedures (SOPs) in the Pacific Island Network. The field season for this protocol begins with the start of field work, installation, or maintenance of any transect or sampling equipment (e.g., Coral Settlement Arrays) in the spring and ends with the final removal of Coral Settlement Arrays in the autumn or completion of field work and data validation. Observers should be familiar with and follow this SOP after the field season is completed. This SOP outlines the proper post-season maintenance and storage for the SCUBA gear, vessel, and survey equipment for each objective of the protocol. The post-field season will follow the last dive of the season.

A master equipment list for the entire Benthic Marine Community Vital Sign Monitoring Protocol can be found in Appendix SOP 1.a of SOP #1 Before the Field Season. The master equipment list should be updated simultaneously if any SOP requiring an equipment list is revised.

SCUBA Gear

Rinse

All SCUBA gear must be rinsed with fresh water following each dive, as described in SOP #11 Post-Dive Procedures and Equipment Maintenance. Marine environments can accelerate wear and deterioration of sampling tools and equipment thus requiring special consideration for adequate maintenance and storage while not in use. After the final dive of the season, all field gear should be thoroughly immersed for one-half hour, and then rinsed with running clean fresh water. Once rinsed allow gear to dry completely prior to returning it to the proper storage area.

Inspect for Repairs

During the final rinse and storage of equipment, inspect and identify SCUBA gear that may be in need of repair, maintenance, or replacement. An equipment list for conducting diving activities can be found in Appendix SOP 1.a in SOP #1 Before the Field Season. Prepare a service schedule and coordinate the maintenance activities identified in order to accommodate the next field season.

Storage

After servicing, store the SCUBA gear in a cool, dry location away from weathering elements (e.g., sun, rain, wind).

Maintenance Log

Prepare a maintenance log that clearly identifies each piece of gear, the date serviced, and the type of maintenance performed.

Survey Equipment

Step by Step Procedures – Benthic Marine Cover

1. Rinse all equipment for monitoring benthic cover after each use at the end of the field season (Appendix SOP 1.a in SOP #1 Before the Field Season) with freshwater (except camera). Allow equipment to dry thoroughly prior to returning it to the proper storage areas.
2. After rinsing the transect tape/lines with freshwater, verify that they are functioning properly. To rinse thoroughly, unspool the transect tape in a container of freshwater. Repair or replace as necessary and respool on reels without twists, kinks or cuts. When dried, store the transect tapes/lines in a cool, dry location.
3. Rinse the sealed camera housing in fresh water and dry before extracting the camera. After removing the camera from the underwater housing, remove and clean the housing o-rings and use cotton swabs to clean and dry the o-ring grooves. Lightly grease the o-rings and replace on the camera housing. See SOP #6 Pre-Dive Equipment Preparation for instructions on removing, greasing, and replacing o-rings. Store the camera with the housing and o-ring(s) together in a cool, dry location according to manufacturer's instructions. Be sure that there are at least two clean, good quality (new) o-rings sets in a sealed plastic bag available for the next field season.
4. Remove the memory card from the camera and store the card with the camera.

5. Remove the camera batteries and place in the camera battery charger. Put the camera in its case and place in cool, dry, secure storage. After the power supply is recharged, place it in the case with the camera.
6. After rinsing with freshwater, dry and store the monopod in a cool, dry location.
7. After identification of the equipment that may require servicing, prepare a maintenance schedule in preparation for SOP #1 Before the Field Season.

Step by Step Procedures – Rugosity

1. Rinse all underwater monitoring equipment (Appendix SOP 1.a in SOP #1 Before the Field Season) with freshwater. Allow equipment to dry thoroughly prior to returning to the proper storage area.
2. After rinsing with fresh water, inspect the rugosity chain for wear. Repair or replace as necessary. Store the dry chain in a cool, dry location.
3. After rinsing with fresh water, verify that the transect tapes/lines are functioning properly. To rinse thoroughly, unspool the transect tape in a container of freshwater. Repair or replace as necessary and respool chain on reels without twists, kinks or cuts. When dried, store the transect tapes/lines in a cool, dry location.
4. After identification of the equipment that may require servicing, prepare a maintenance schedule and coordinate the activities identified to be done in preparation for the next field season.

Step by Step Procedures – Coral Settlement

1. Rinse all underwater monitoring equipment (Appendix SOP 1.a in SOP #1 Before the Field Season) with fresh water (except camera) and allow to dry thoroughly prior to returning to the proper storage areas.
2. After rinsing with freshwater, inspect the settlement array parts for wear and repair or replace as necessary. Store unused dry settlement array parts in a cool dry location.
3. Remove the memory card from the camera and store the card with the camera.
4. Remove the camera batteries and place in the camera battery charger. Put the camera in its case and place in cool, dry, secure storage. After the batteries are recharged, place it in the case with the camera.
5. After identification of the equipment that may require servicing, prepare a maintenance schedule and coordinate the activities identified to be done in preparation for the next field season.

Step by Step Procedures – Coral Growth

1. Rinse all monitoring equipment (Appendix SOP 1.a in SOP #1 Before the Field Season) with fresh water and allow equipment to dry thoroughly prior to returning it to the proper storage area.
2. After rinsing with freshwater, verify that the measuring tape was in working condition when last used. Repair or replace as necessary. When dried, store the measuring tape in a cool, dry location.
3. Store the supply of plexiglass tags in a cool, dry location.
4. After rinsing with freshwater, verify that the calipers were functioning properly during the last use. Repair or replace as necessary. When dried, store the calipers in a cool, dry location.
5. After identification of the equipment that may require servicing, prepare a maintenance schedule and coordinate the activities identified to be done in preparation for the next round of field work.

Research Vessel Maintenance

Step by Step Procedures:

1. Inspect all boating supplies (Appendix SOP 1.a in SOP #1 Before the Field Season) to verify that they are in working order and will be ready for use during the next scheduled field season. Remove and care for engine batteries.
2. Inspect the mooring lines, including chafing gear, and ensure that they are undamaged and secure. Repair or replace as necessary.
3. Inspect anchor, shackle(s), wire(s), and chain/line for any rust, wear or breakage. Repair or replace as necessary.
4. Ensure that the bilge pump is in working condition.
5. Inventory the first aid kit (including sunscreen and water) and replace the items that have been used or are past their expiration date.
6. Inspect personal floatation devices (PFDs) for damage, including any straps, whistles or lights. Service or replace as needed.
7. Inspect emergency oxygen kit. Test equipment to ensure masks and valves are working properly. Replace, refill, or service as needed.
8. Ensure that all electronics are in working order. Electronics include any compasses, GPS (Global Positioning System)/plotter, depth finder, or CB/VHF radio.
9. Check the expiration dates for the fire extinguisher and flares and compare with the schedule for the next field season. Make arrangements to service or replace them before they expire.

10. Note the expiration dates for the boat registration and ramp fees (if required). Arrange to have them updated as necessary before the next field season.
11. Carefully do a visual inspection of the inner and outer hull, anchor locker, console, canopy, or antenna mounts (if any) for cracks, stress, or other damage. Pay particular attention to stress areas including cleats, line or lifting eyes, rails, and transom near engine mounts. Thoroughly flush cable channel with freshwater or clean other under deck spaces as recommended by manufacturer. Clean out and air dry under deck spaces and console interior to prevent mold, mildew, or damage. Repair or replace any parts or areas as necessary. Cover the whole boat, including engine, and trailer chassis securely with a heavy duty, opaque, waterproof material secured by ropes or bungee cords. Then store the vessel as per park specific guidelines to protect the boat from the elements.

Boat Motor Maintenance

Step by Step Procedures:

1. Follow the manufacturer's guidelines for scheduled boat motor maintenance.
2. Inspect all boat motor equipment (Appendix SOP 1.a in SOP #1 Before the Field Season) to verify that it's in working order and will be ready for use during the next scheduled field season.
3. After identification of the equipment that may require servicing, or seasonal/long-term storage, prepare a maintenance schedule and coordinate the activities in preparation for the next field season.

Boat Trailer Maintenance

Step by Step Procedures:

1. Rinse in fresh water and allow it to dry. Inspect the boat trailer to verify that it's in working order and will be ready for use during the next scheduled field season.
2. Follow the manufacturer's guidelines for scheduled maintenance of the boat trailer's tires, axle bearings, frame, and lights.
3. Note the expiration dates for the trailer registration and safety check. Arrange to have these updated as necessary before the next field season.
4. After identification of the equipment that may require servicing, prepare a maintenance schedule and coordinate the activities in preparation for the next field season.