Standard Operation Procedure (SOP) #10

Conducting Surveys in Guam

Version 1.01 (June 28, 2021)

Change History

New Version #	Revision Date	Author	Changes Made	Reasons for Change	Previous Version #
1.01	6/28/2021	Amanda McCutcheon	Minor text updates to conducting surveys in Guam	More clarification was needed.	1.0

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; identify paragraphs and pages where changes are made, who approved the revision, and the reason for making the changes along with the new version number.

Purpose

This SOP describes setting up a sampling station (reach) and the general sampling order. This SOP will be used in Guam at WAPA.

Conducting Surveys in Guam

1. *Mark the reach*. Each reach is thirty meters long following the thalweg of the stream. The start of the reach (0 m) is marked with flagging tape on the bank where the mark can be easily seen from the stream. The reach is then divided into five 6 meter sections, therefore, sections will be marked at 6 m, 12 m, 18 m, and 24 m, and 30 m. It is important not to enter the stream when marking the reach because this will disturb the fish which will be surveyed first. If it is impossible not to enter the stream at any point during this procedure, stop and wait for the fish observers to finish their surveys before continuing to mark the reach.

2. *Mark the location using a Global Positioning System (GPS)*. See SOP #4 Using Garmin® GPS Units."

3. *Conduct water quality sampling.* See Water Quality Monitoring Protocol. Water quality nutrient samples and physical parameters (measured with the YSI sonde) are taken at the top of the reach above the 30 m mark. Water Quality Monitoring is performed only at select sampling stations (FWAPA01, 03, 05, and 07 and 4 temporary sites). Water Quality sampling can occur concurrently with this protocol or on a separate day (preferred when fewer than 3 observers are available because it reduces the amount of equipment carried each day).

4. *Conduct the fish survey*. See SOP #17 Fish (atot) Surveys in Guam. It is important that the fish observers are the only people in the water while conducting a survey in a given area.

5. *Conduct the shrimp survey*. See SOP #18 Shrimp (uhang) Surveys in Guam. It is important that the shrimp observers are the only people in the water while conducting a survey in a given area.

6. *Conduct the snail survey*. See SOP #19 Snail (akaleha) Surveys in Guam. Snail observers use the 6 m transect divisions. They work from downstream to upstream.

7. *Conduct the habitat survey*. See SOP #22 Habitat Characterization at the Reach and Transect Scales. This includes the reach characterization, pebble count, and stream discharge measurements.

8. *Take transect photographs.* See SOP #6 Collecting Stream Transect Photographs. This step can be conducted simultaneously with the habitat survey (Step 7).