

Standard Operating Procedure #12

Pool Mapping and Photographing

Version 1.0 (November 7, 2018)

Change History

New Version #	Revision Date	Author	Changes Made	Reasons for Change	Previous Version #

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 describes sketching the sampling site, trap and sonde deployment locations, transect location, estimated surface area, and other landmarks associated with a pool during the implementation of the Pacific Island Network Anchialine Pool Monitoring Protocol. At each pool photographs will be taken from a permanent fixed location.

Overview of Mapping Procedure

This procedure should be done during deployment of shrimp and fish traps. Sketching the sampling sites and measuring the surface area is necessary for monitoring senescence and change in the physical habitat over time. Sketching the sampling sites also ensures that future observers deploy traps and take repeat photographs in the same locations. Although a sketch, distance measurements should be taken to quantify feature sizes and locations. Mapping has three phases: initial field sketching, transcription into a drawing program, and updating maps using the previous year's transcribed map.

Initial Field Sketch

1. Designate a benchmark location. Benchmarks should be easily recognizable features that are not likely to move from year to year, such as a specific location on a tree or distinctive feature on a rock. Photograph and describe the benchmark in notes. Benchmarks should be close to the watered edge both vertically and horizontally.

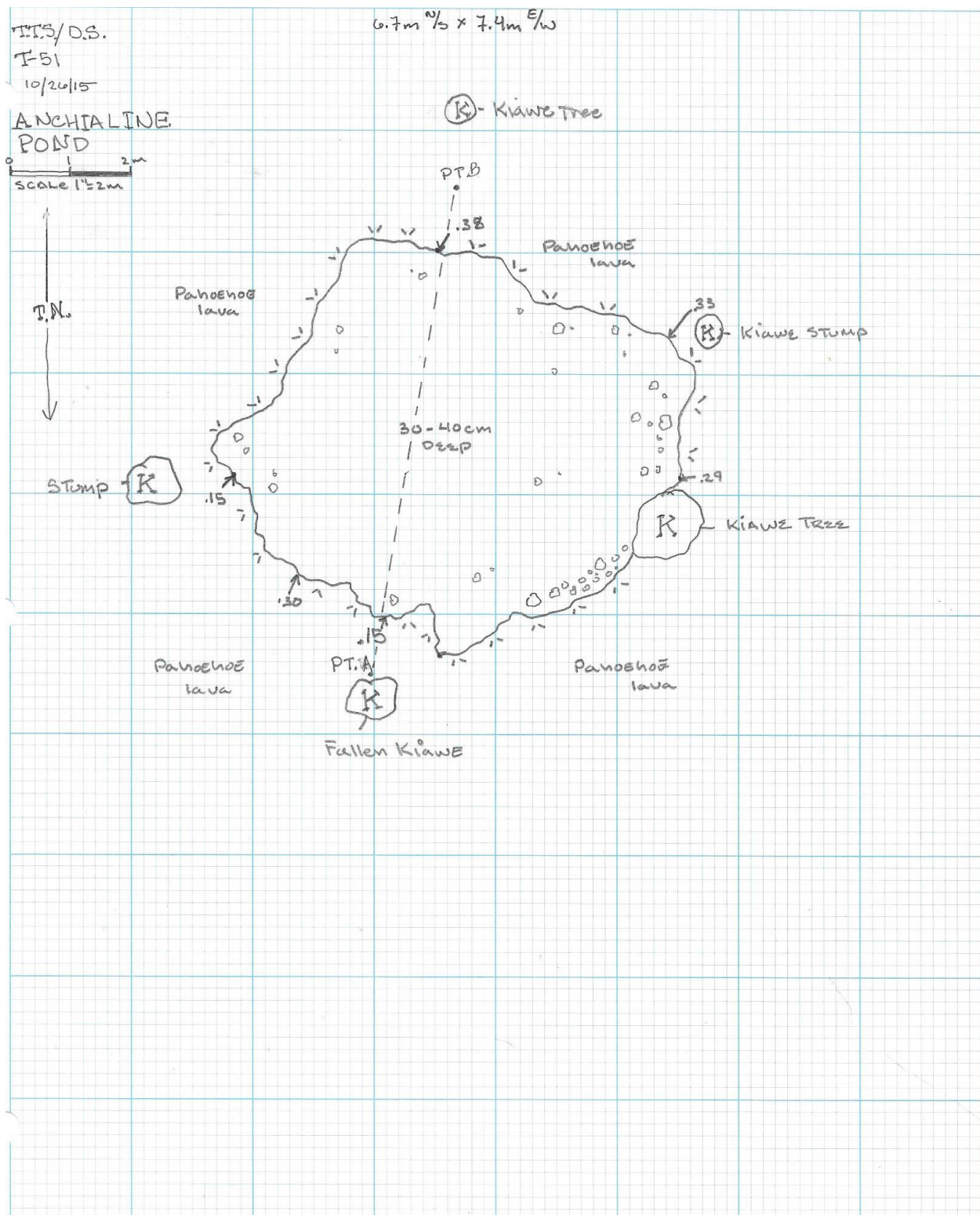
2. Photograph the benchmark by flagging it and take a wide-angle picture showing the benchmark in the context of its surroundings, as well a closer shot to show its specific location.
3. When photographing, take several shots that show the entire pool at once. There should be a white board with a north arrow in the picture to show which direction is north for spatial reference. The purpose is to record the overall condition of the pool in its entirety and immediate surroundings. Do this from multiple angles. Also take closer shots of important features, including walls, plants, and features that could change over time, like the edges of areas of fine sediment.
4. Sketch the general shape of the outline of the watered edge of the pool at high tide.
5. Measure the distance from the benchmark to various points around the watered edge in meters using a transect tape and note distances in the sketch. This step will allow a general sketch made in the field to be corrected during the transcription phase.
6. Designate a second benchmark and repeat steps 1-4.
7. Draw relevant features on the sketch, including plants, different substrate types, woody debris, prominent rock, walls, and other features. For plants, do not simply place a dot designating its central location, but rather outline the spatial extent of its coverage including canopy overwater. For trees designate the location of the trunk at the ground, its diameter, and the spatial extent of its canopy. Some features may overlap.
8. For pools that are located at the bottom of a pit, concentrate on getting the shape of the watered edge correct, and note the tidal stage on the sketch. Then sketch the extent of rock overhangs closest to the watered surface using a dashed line or other clear demarcation.
9. Label features on the sketch.
10. Measure pool widths at several locations as needed to correct the sketch in the transcription phase.
11. Designate the direction of north, the locations of shrimp and fish trap placement, transects used to measure light and substrate surveys, and locations from which wide angle photos were taken.
12. In general, more information on the initial sketch is better, as it can be used to correct the shape of the sketch in the transcription phase.

Sketch Transcription

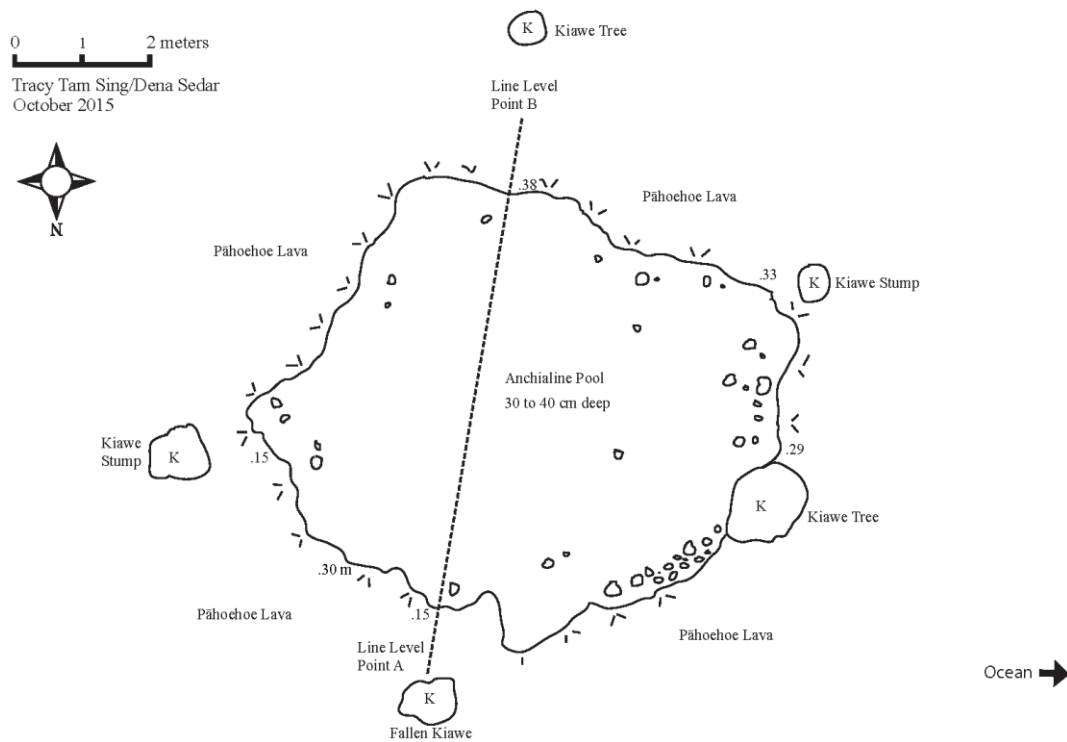
1. Scan the sketch and import into a vector drawing program.
2. Use a program that can define shapes such as lines in terms of their measurements. While the particulars of using a specific drawing program may differ, the general procedure will remain the same.
3. Choose and draw a scale, e.g., 1 in : 1 m.
4. Draw the overall shape of the pool using a shape tool.
5. Adjust the size and shape of the pool according to the measurements taken in the field.
6. Add features in their locations as measured in the field.
7. Some creativity will be needed as challenges to sketching are encountered, such as overlapping features.
8. Note the date and version of the map on the finished product.
9. Finished sketches should be of publishable quality, see examples.

Updating Maps

1. Bring the previous version of the finished map in the field on subsequent sampling trips.
2. Use the map as a guide and look for substantive changes. Note and draw changes on the map, measuring as needed.
3. Create an updated version of the map in the drawing program.
4. Note the new version on the map.
5. Create a map log to record whether maps have changed or not between years.



Kekaha Kai State Park
 Mahai'ula Section, Kaulana, North Kona, Hawai'i Island
 Pool 2 Plan View



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Kekaha Kai State Park
 Mahai'ula Section, Kaulana, North Kona, Hawai'i Island
 Pool 1 Plan View
 T. Tam Sing/D. Sedar
 October 2015

