



SMART Seas Program SAM Approach - Beach Monitoring Protocol

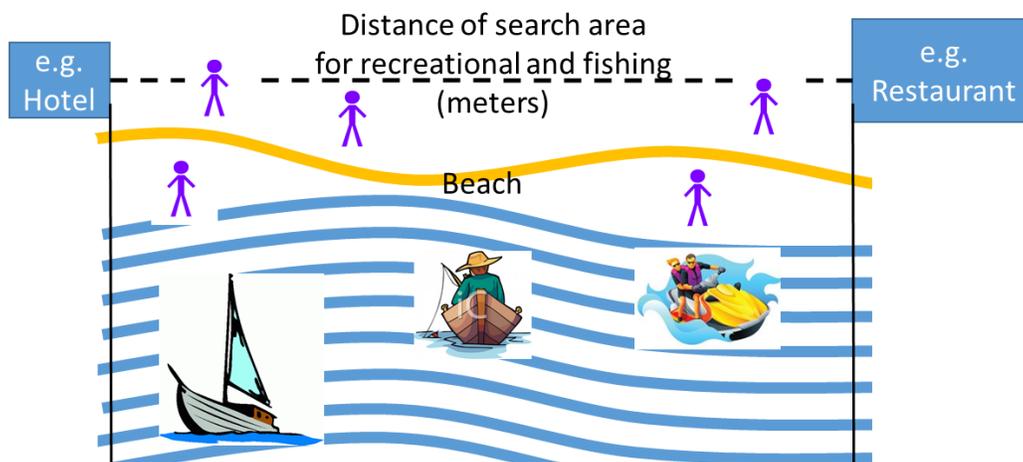
General Note: Zero is a number. Thus, if you look for something and do not see it, that is a zero and should be entered on the data sheet as "0". If you DID NOT measure, count, or look for something, then leave it blank. A blank indicates you did not collect data.

Site Selection

- At each MPA, set up a minimum of 3 sites.
- Preferably, these should be beaches used by sea turtles or beaches important for tourism.
- Make sure you know the boundaries of each of your sites with common landmarks. These landmarks should ideally be recorded by name and also with GPS points (you can use a phone to get these).
- Make sure you know the distance (length) of beach between your landmarks.
- Make sure you know the total distance (length) of beach in your MPA that is used for sea turtle nesting.

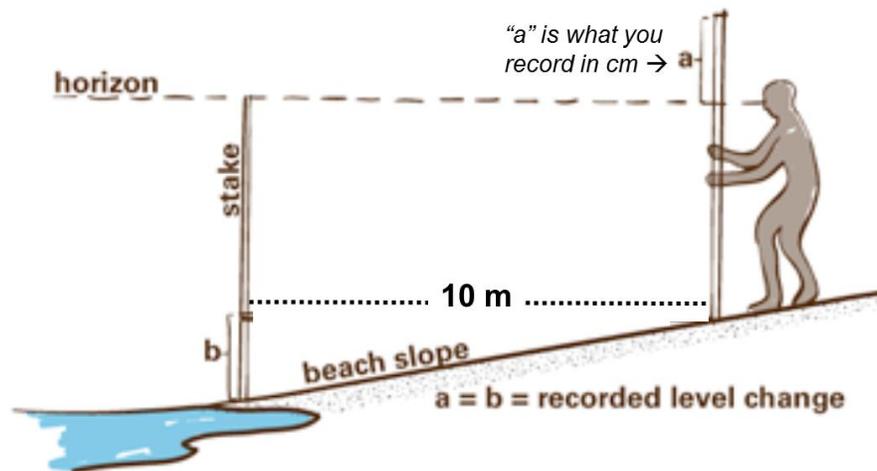
Recreation & Fisher Counts

- If your MPA has binoculars use them. But, be consistent month to month. Try to always use binoculars all the time.
- Make sure you know the distance of area you are searching and the landmarks you are searching between.



- In any area that you can see from the beach you are standing on, record the number of recreational boats in view by type.
- Record the number of people on the beach by type (in water or on beach).
- Record the number of fishers in the categories listed on your data sheet.

Beach Slope

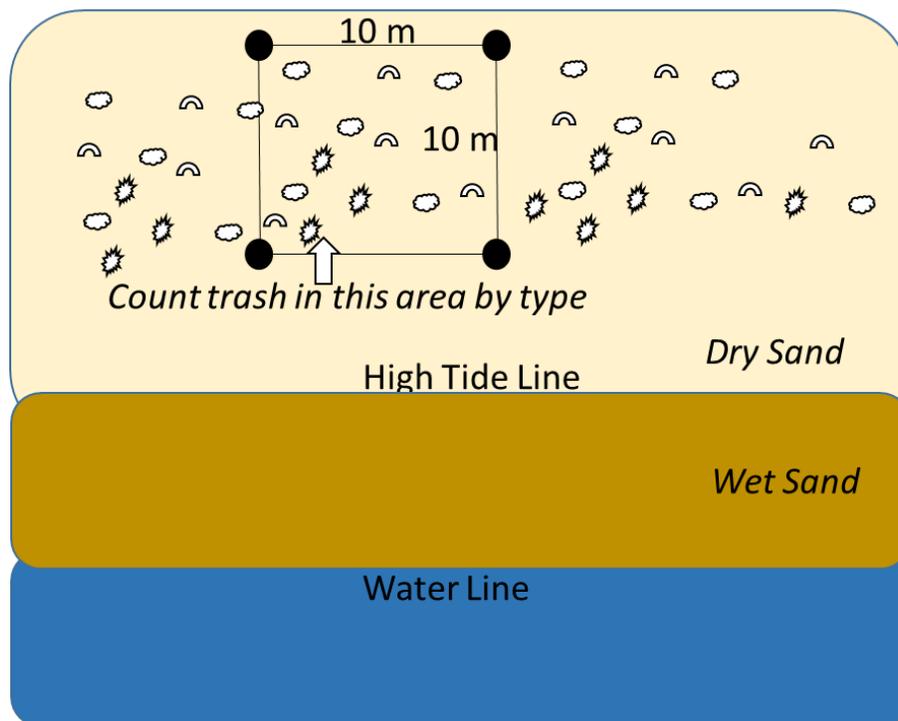


- Always start at the same spot, so make sure this spot is either marked or has a clear landmark (e.g. paint an x on a tree). Try to choose a place that includes the steepest part of your beach.
- Have two people standing 10 m apart with one on the upper part of the slope and one down the slope toward the water.
- One pole should have marks on it each centimeter from the top, and this pole should be used at the upper location.
- The person at the upper location is the one to determine the slope. This person lines their eye up with the pole they are holding so that they can see the top of the other pole and the horizon or the land line (if land is blocking the horizon).
- When they are sure their eye is lined up with the top of the other pole and the horizon, this person should record how many centimeters (cm) down the pole their eye was.
- It is **very important that both poles remain vertical and NOT tipped sideways.**
- It is also **very important that the poles do not sink into the sand.**
- You may want to bring a bucket to stand on in case the slope is not very steep and you need to move higher up on the pole (for the person taking the measurement).
- It's a good idea to have 2 people read the slope independently and make sure you are getting the same measurement.
- If you want, you can take 4 different measurements going from the upper part of the beach to the lower part of the beach to cover more ground (e.g. cover 40 m of beach in four 10m intervals). However, the upper slope will be the most critical for you to track in your monthly graphs.

- For beach data, you should collect data twice in a month: one weekday and one weekend. When you take the 2nd measurement in the month, make sure you know what the team before you got for your site. You want to be sure your measurements make sense. Likewise, make sure you look at data from the previous months so that you know if there is a major change at your site. Including this information (prior days and previous months' measurements for each site) should be part of your pre-monitoring briefing. Comparing your measures with previous measures should be part of your post-monitoring briefing.

Trash

- Mark a 10 x 10 m area above the high tide line.
- Use the same general area each month.
- Record the total number of pieces found by category (type), then remove from beach.
- The weight of trash in these small areas is not very accurate, so this is not advised.
- Recording weight of trash for monthly beach cleanups is useful as an indicator of the amount of trash removed. HOWEVER, as there are different numbers of people cleaning trash each month, different extent of the beaches cleaned, and different people work more thoroughly than others, DO NOT use monthly beach cleanup data to assess amount of trash on the beach – this is not an accurate measure. The 10x10 m² areas are the only accurate measure of trash deposits on beach.



**With any questions on this protocol, please contact Dr. Jennifer O'Leary:
jkoleary@calpoly.edu**