

2011 Reef Check California Protocol Updates

This year we have implemented some updates to our protocol and datasheets which include both changes and clarifications. Please take the time to review these prior to coming out to your Re-certification. We will discuss and clarify any questions about the changes when we meet for the Re-cert. The updates are as follows:

All Transects

1. 10 meters or more of sand

If you are deploying a transect on a pre-determined bearing and encounter > 10 m of sand, alter your bearing to get back on to rocky reef substrate. As we have done in the past, if you do not pass any kelp and/or rocky substrate (bedrock or boulders) coming up through the sand in < 10 m, void the transect and redeploy once you have found the reef again. On the other hand, if you encounter algae emerging from the sand frequently this suggests you are surveying recently covered rocky reef habitat and you should continue your transect according to your heading.

2. Time guidelines

Fish transects are to be completed in 5-10min. Invertebrate and seaweed transects should be done with a 10 minute goal in mind, but there is no cut-off time. Due to the differences in complexity of the reef habitat and abundance of certain organisms transects might deviate from this goal. UPC has no time limit, but remember to write down start and end time.

3. Counting organisms in cracks

If your transect passes over a crack/crevice that is too small to swim into, count organisms in the entire area of the crevice within the 2 meter width of the swath. If the transect is placed under a ledge that creates a ceiling above the diver do not count invertebrates on the ceiling.

Fish Transect

1. “Unknown Rockfish” and “YOY Rockfish” categories

In addition to all the species of rockfishes on our indicator organism list, RCCA also counts “young-of-the-year” (YOY) rockfishes, which are juveniles that are less than a year old. It is very difficult to identify YOY rockfishes to species when they are < 10 cm. As an RCCA certified diver you will count small individuals (greater than 2.5 cm) that clearly have a rockfish body shape but with coloration and/or markings that differ from adults, and record them in the “YOY Rockfish” category on your datasheet. Even if you have been trained to identify YOYs to species do not record them under the respective species but record them in the “YOY Rockfish” category on the datasheet. There is only one size category since YOYs are < 10 cm. It is not uncommon to see 100 or more YOYs on one transect during certain times of year (mainly the northern part of the state). It is important therefore to do your best to count ALL YOYs seen on transect (we DO NOT subsample any fishes) by coming up with a helpful technique, such as counting in groups of 5 or 10. We have removed the “unknown rockfish” category from the datasheet. If you encounter an individual (other than YOYs) that you cannot identify to species take notes on your datasheet and discuss these with the team after the dive.

*Note: In the past we have recorded juvenile blue rockfish separately from the others. We will not be doing that anymore and group all YOYs together.

2. Kelp greenling

We have added a juvenile category for kelp greenling to the datasheet. Individuals that are less than 20cm and cannot be clearly identified either as female or male (non-descript markings) should be recorded in this category.

Invertebrate Transect

1. Black abalones now treated like white abalones

Due to their endangered statuses, white and black abalones should be recorded if they are observed anywhere during the survey (on or off transect). As such, note that black abalone has now been moved to the bottom of the datasheet, where you can mark yes if you see one. If you believe you see a black or white abalone, do as much of the following as possible: confirm with your buddy; record whether or not it is on transect; take a photo including the respiratory holes, shell and mantel; and mark the location with a float so GPS coordinates can be taken from the surface.

2. Abalone sizing

As usual, divers will attempt to measure all abalone to the nearest cm. However, if a measurement is impossible, mark an "X" on your datasheet. This replaces the "-999" entry we've done in the past.

UPC Transect

1. SUBSTRATE: Bedrock is now Reef

We are now calling our old "Bedrock" category "Reef" to eliminate the confusion between marking "B" or "R".

B - Boulder (> 15 cm – 1m diameter)

R - Reef (> 1m diameter)

2. COVER: How to record algae

There are two categories for brown seaweed, Brown Seaweed (B) and Other Brown Seaweed (OB) on the UPC datasheet. Category B is used to describe only the five kelps that are counted during an algae transect. The OB category describes any other brown seaweed, including the brown invasives, *Undaria pinnatifida* and *Sargassum* spp. If your UPC point falls upon ANY PART (blade, stipe, holdfast) of any color alga it should be recorded. This rule applies to all algae categories except Brown Seaweed (B), which should only be recorded if the point falls directly on its HOLDFAST. Non-attached algae, or drift algae, should be moved when encountered to determine what is below. When long blades of algae are encountered it is important to determine if they are attached to the reef (accomplished by giving a gentle tug). If they are they will be recorded and if they are not they will not be recorded.

3. COVER: New categories

Mobile Invert (MI)- Invertebrates that can change location including urchins, sea cucumbers, sea stars, abalone, limpets, etc.

Sessile Invert (SI) - Invertebrates that cannot change location including sponges, tunicates, scallops, barnacles, sandcastle worms, anemones, etc.

Seagrass (SG) - Seagrasses, including surfgrass and eelgrass.

4. How to record sandcastle worms

Sandcastle worms are recorded in the cover category as sessile invertebrate (SI) no matter if they are growing in sand or on rock, or even if there is anything growing on the colony (e.g., algae).