



REEF CHECK CALIFORNIA PROTOCOL 2007 UPDATE

Fish Transects

There are no changes to the survey method; however, 2 new species of fish have been added.

The first species is the brown rockfish.



The Department of Fish and Game's "California's Living Marine Resources: A Status Report (2001)"¹ had this to say about this fish:

"Brown rockfish, (*Sebastes auriculatus*), commonly referred to as bolina by fishermen and markets, have long been an important component of the marine recreational fishery and a relatively minor but important component of the nearshore commercial fishery in California, especially north of Point Conception. While there have been studies of local abundance in certain coastal areas and within bays, the population size and structure of this species has not been comprehensively assessed. Evidence of stress on brown rockfish stocks in California exists, however, and some relative changes in the population have been identified. Commercial and recreational catches have steadily increased during the last 40 years, while the average length and weight of brown rockfish in landings have declined."

"The distinguishing characteristics of the brown rockfish are orange-brown or dark brown mottling, especially on the back, and a prominent dark brown blotch on the gill cover (noted by arrow in photo above). Brown rockfish are typically found associated with sand-rock interfaces and rocky bottoms of artificial and natural reefs. In shallow

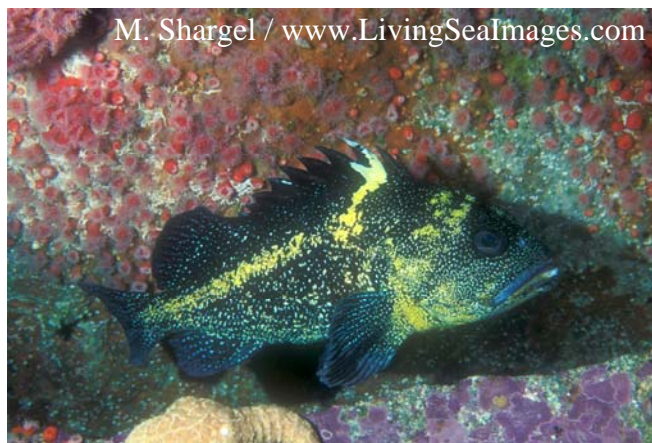
¹ <http://www.dfg.ca.gov/mrd/status/>



waters, they may be found in small aggregations associated with rocky areas and kelp beds, whereas they stay near the rocky bottom when in deeper waters.”

The brown rockfish was added to the Reef Check California species list because it is commonly targeted by both recreational and commercial fisherman as well as being a species of special concern due to the signs of stress evident in the population. This species can be confused with the grass rockfish, but can be distinguished by having a much lighter crème colored background and darker blotches as well as a clear dark brown blotch on the gill cover.

The second species is the China rockfish. The Department of Fish and Game’s “California’s Living Marine Resources: A Status Report (2001)” had this to say about this fish:



“China rockfish (*Sebastes nebulosus*), have been a minor component of recreational and commercial fisheries. The China rockfish is abundant into Washington, British Columbia, and southeastern Alaska, declining in abundance south into California. It is quite rare south of Point Conception, and seems to inhabit progressively deeper water in the southern part of its range.”

The distinguishing characteristics of China rockfish include a dark to black body color covered completely with white to yellow speckles. The key identifying characteristic is a yellow stripe beginning on the front of the dorsal fin continuing down on to the body and extending back to the tail fin along the lateral line.

This fish was added because it is commonly observed as you move northward and easily identifiable.



Invertebrate transects

There are no substantive changes to the general survey method. However, we have added a few species to ensure we are getting a representative sample of the invertebrate community on California's rocky reefs and have changed the minimum size requirement for all gorgonians (sea fans).

We have added two new abalone species. All abalone are species of interest and it was important to include more species as the program expanded north to include the more northerly distributed species.

Flat abalone - *Haliotis walallensis*



The flat abalone is characterized by a more oval shaped oblong shell when compared to other species and is significantly flatter or lower in profile. The holes range from 4-8 and are raised off the shell. The color of the body is yellowish green mottled and the tentacles are yellowish green and light in color

Pinto abalone – *Haliotis kamtschatkana*



The pinto abalone shell color is reddish with white and blue markings. They tend to be rather small and squat looking when compared to other species. The body color is mottled greenish tan or brown and the tentacles are greenish brown and can be rather bright in color.

Masking carb – *Loxorhynchus crispatus*



We have added the masking crab to avoid surveyors having to spend time trying to differentiate it from the sheep crab. The body shape is the same as the sheep crab but generally will be smaller. The key characteristic is the shell will be covered with various growths of seaweed or other invertebrates that the masking crab uses for camouflage unlike the sheep crab whose shell is relatively growth free. Please note that the masking crab is combined with the sheep crab on your datasheet.



The last addition to the invertebrate species is the grouping “Large anemone”. This group includes a group of anemones that are all members of the Order Actinaria. We added this group because we did not have any truly sessile (non-mobile) species on our list and we thought that a sessile organism was important to include for long-term monitoring. You should count any anemone you see that is > 10 cm in diameter in this category. You should **not** count small < 10 cm colonial anemones in this category. Here are some examples of anemones that should be included:



All photos: M. Shargel / www.LivingSeaImages.com

We have made one additional change to the survey method for all gorgonians and switched the minimum size to count from 15 cm to 10 cm. This makes the minimum size to count consistent with the “Large anemone” group and should simplify things a bit.

Algae and UPC transects

No changes to these protocols and no new species.

REMEMBER ALL THE NEW INFORMATION WILL BE ON YOUR 2007 DATASHEETS AND MAKE SURE TO ASK YOUR TEAM LEADERS IF YOU HAVE ANY QUESTIONS!!!



REEF CHECK CALIFORNIA PROTOCOL

2007 UPDATE

SUMMARY PAGE

Fish transects

No change in survey method.

Addition of two species:

brown rockfish

China rockfish

Invertebrate transects

No change in overall survey method.

Gorgonians need to be at least 10 cm tall instead of 15 cm as they were last year.

Addition of three species and one group:

flat abalone

pinto abalone

masking crab (combined with sheep crab on datasheet)

large anemone (group)

Large anemones need to be at least 10 cm in diameter to count.

Do not count anemones < 10 cm.

Seaweed and UPC transects

No changes and no new species.