NOAA FISHERIES

Pacific Islands Region

corals

Field Identification Guide to the Corals of Guam listed as "Threatened" under the Endangered Species Act

June 2015

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In September, 2014, the National Oceanographic and Atmospheric Administration’s National Marine Fisheries Service (NOAA Fisheries) listed 15 Indo-Pacific coral species as threatened under the U.S. Endangered Species Act. Corals in the Indo-Pacific are quite difficult to identify, but identification is necessary for many kinds of activities associated with the threatened status of these species. This guide is intended to help with identification of colonies of these species living on the coral reefs of Guam.

Coral species are defined based on their skeletons in all but a very few cases. Luckily, the tissues are thin on most species, so some of the features of the skeletons can be seen in living corals. Living corals also have some clues that skeletons don’t have, such as colors. Corals in the Indo-Pacific are difficult to identify because colonies of a species are variable and differences between species are small. Coral species vary in colony shape and the features of the “corallites”, which are the cups the polyps sit in. Almost every coral species in the Indo-Pacific has one or two other species that are very similar and hard to distinguish from it.

We are still learning about coral species, although we know vastly more than just a few decades ago. We do not have complete lists of coral species from most places in the Indo-Pacific. If a species is not known from an area, that may indicate it is less likely to be found during underwater work than a species that is known from that area. However, we frequently find corals in areas where they have not been reported before. On the other hand, because corals are so hard to distinguish, a species may have been reported from an area but the report may be incorrect and actually be of another, similar species. Thus, while known species ranges and local reports are usually reliable indicators of what is likely to be present, they are not perfect and surprises are possible, if not likely.

This guide was funded by NOAA Fisheries and authored by Douglas Fenner, Ph.D. *All photographs are by the author and copyright protected unless otherwise stated.*

In this guide, species will be presented in an order that will present similar corals together as much as possible, and will present more common or widespread species at the start. In addition, other similar species will be presented to highlight the differences between species. Threatened species are numbered and the name is shown in bold, while other similar species are not numbered or in bold.

The three coral species listed by NOAA Fisheries as threatened which have been confirmed in Guam so far are:

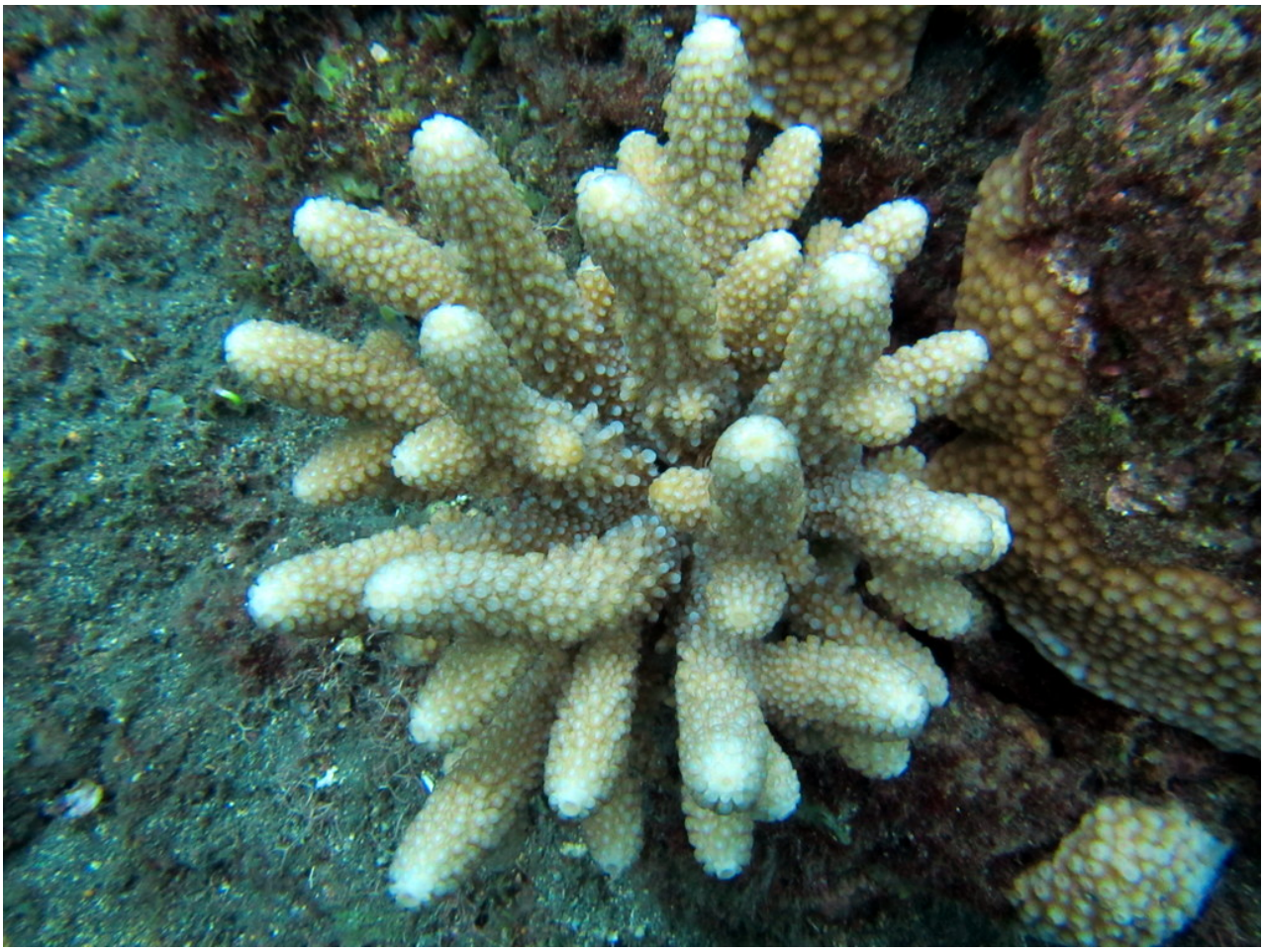
1. *Acropora globiceps*
2. *Acropora retusa*
3. *Seriatopora aculeata*

1. *Acropora globiceps*

This coral forms digitate colonies with finger shaped vertical or radiating branches. The axial corallite is a small short raised tube. Radial corallites are cylindrical, may have upward facing openings, are nearly uniform in size, and are often in rows. Colonies are brown or fluorescent green, are uncommon to common, and are most common on upper reef slopes but can be in other zones. This species has probably been frequently mistaken for *A. humilis* previously, which it resembles closely, except *A. humilis* has large, dome-shaped axial corallites.

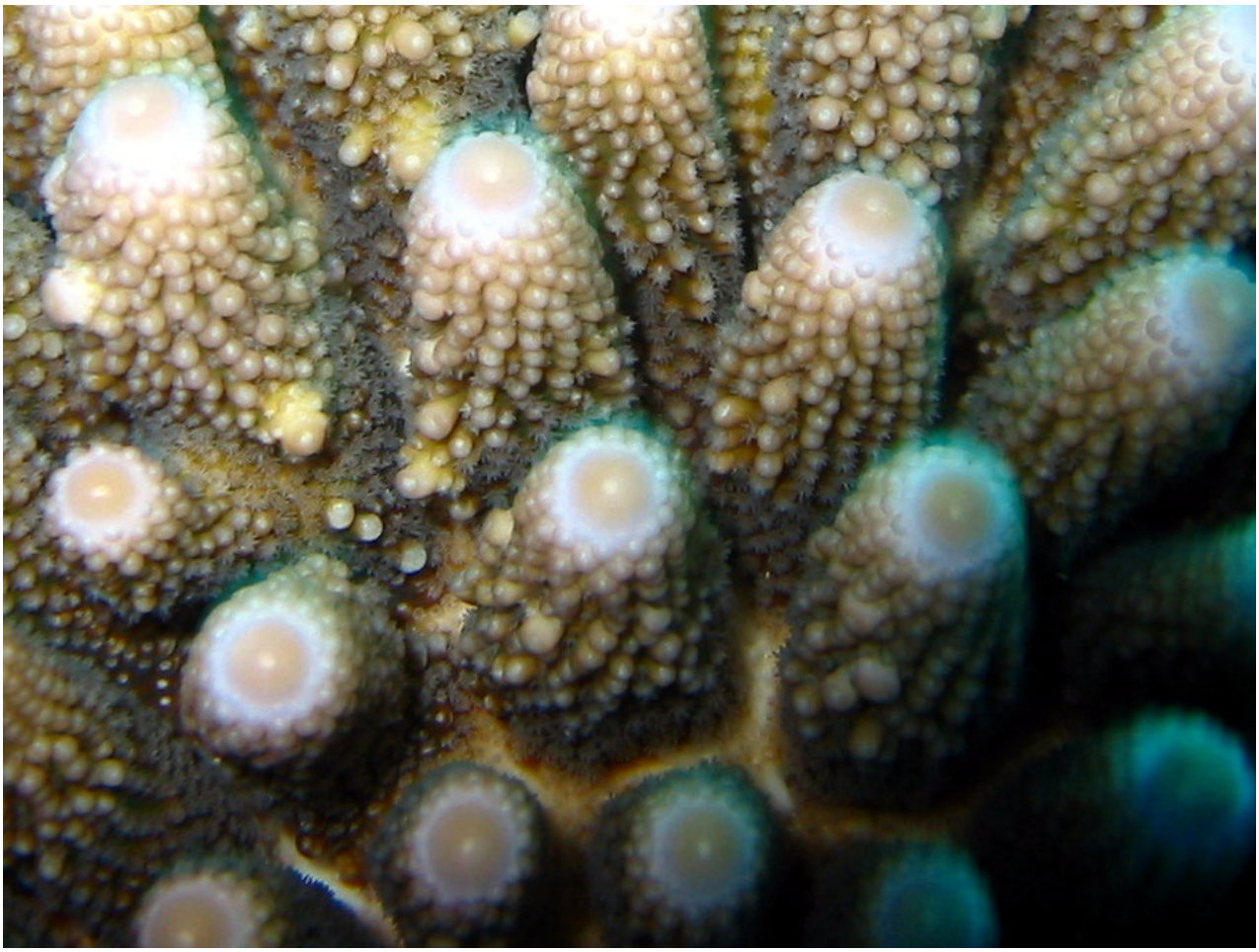
A colony of *Acropora globiceps* in the Northern Marianas Islands. Photo by Victor Bonito.

A closeup of *Acropora globiceps* in the Northern Marianas. Notice the small tubular axial corallites. Photo by Victor Bonito.



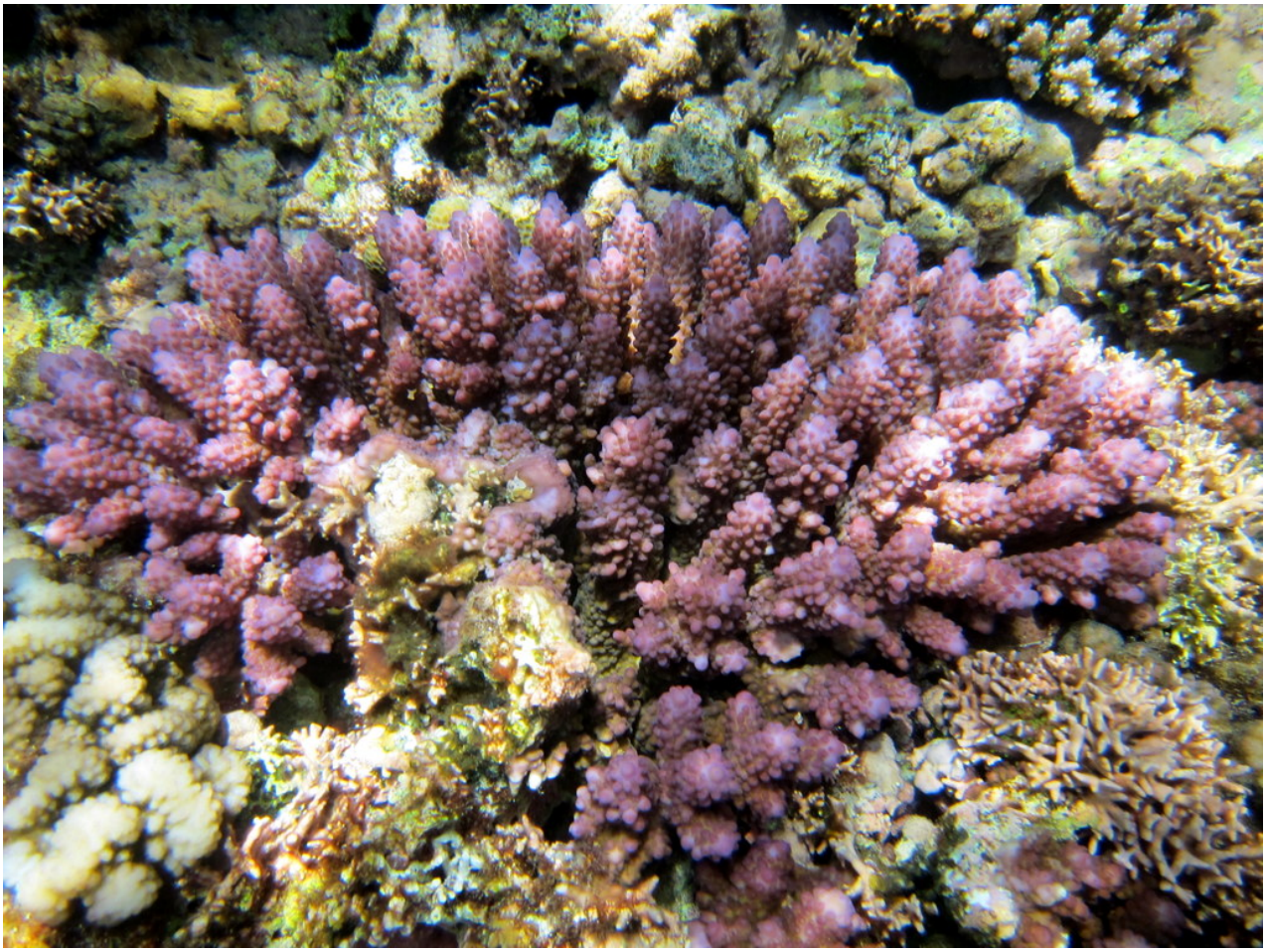
This is a colony in the Northern Marianas that appears to have corallites similar to those in the previous two photos, however the branches are longer and diverge more widely than in the previous two photos. This morphology is more common in the Northern Marianas than that in the previous photos. It is not clear yet whether this is the same species or a different species. Photo by Victor Bonito.

A photo of *Acropora humilis* taken on the Great Barrier Reef. Notice the large axial corallites, which are very short and can be dome-like.

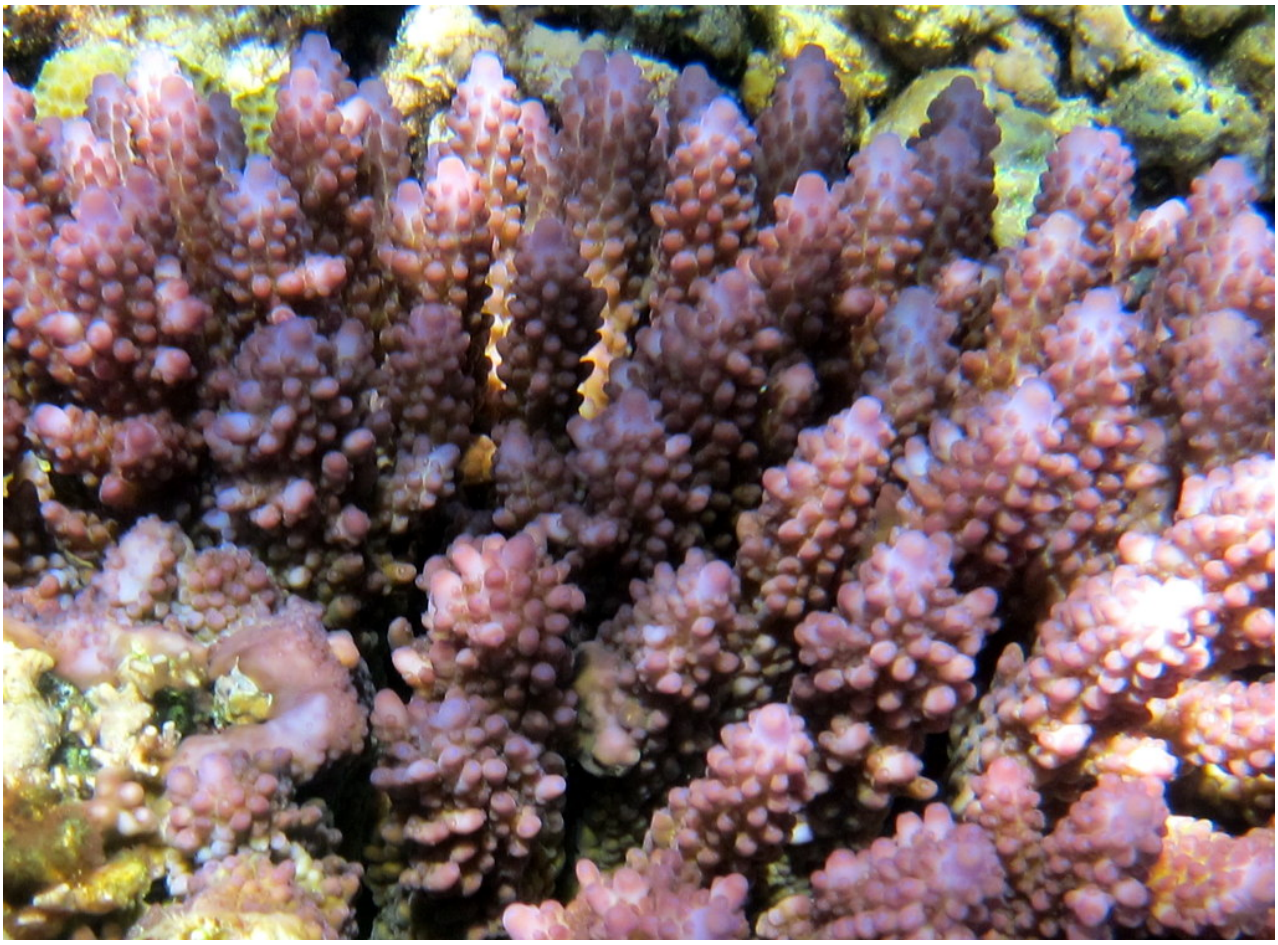


A closeup of *Acropora humilis* on the Great Barrier Reef. The white dot in the center is the calice (inside of the corallite), and the tan around it is the very thick wall of the corallite (with white in turn around it).

Another species which looks similar to *Acropora globiceps* is *Acropora cophodactyla*. *Acropora cophodactyla* has digitate branches, but has a large, tall axial corallite that may taper.



A photo of a whole colony of *Acropora cophodactyla* taken in the Northern Marianas. Note the large axial corallites.



A closeup photo of *Acropora cophodactyla* in the Northern Marianas showing the large, tall axial corallites. Note that some of the axials taper.

Another species which is similar to *Acropora globiceps* is *Acropora gemmifera*. *Acropora gemmifera* has a small axial and radial corallites are usually in rows, but branches may not be parallel, and radial corallites may have thick walls.

A closeup of *Acropora gemmifera* in American Samoa. Note the branches are not parallel, the small axial, the radial corallites in rows, and the thick walls of radial corallites.

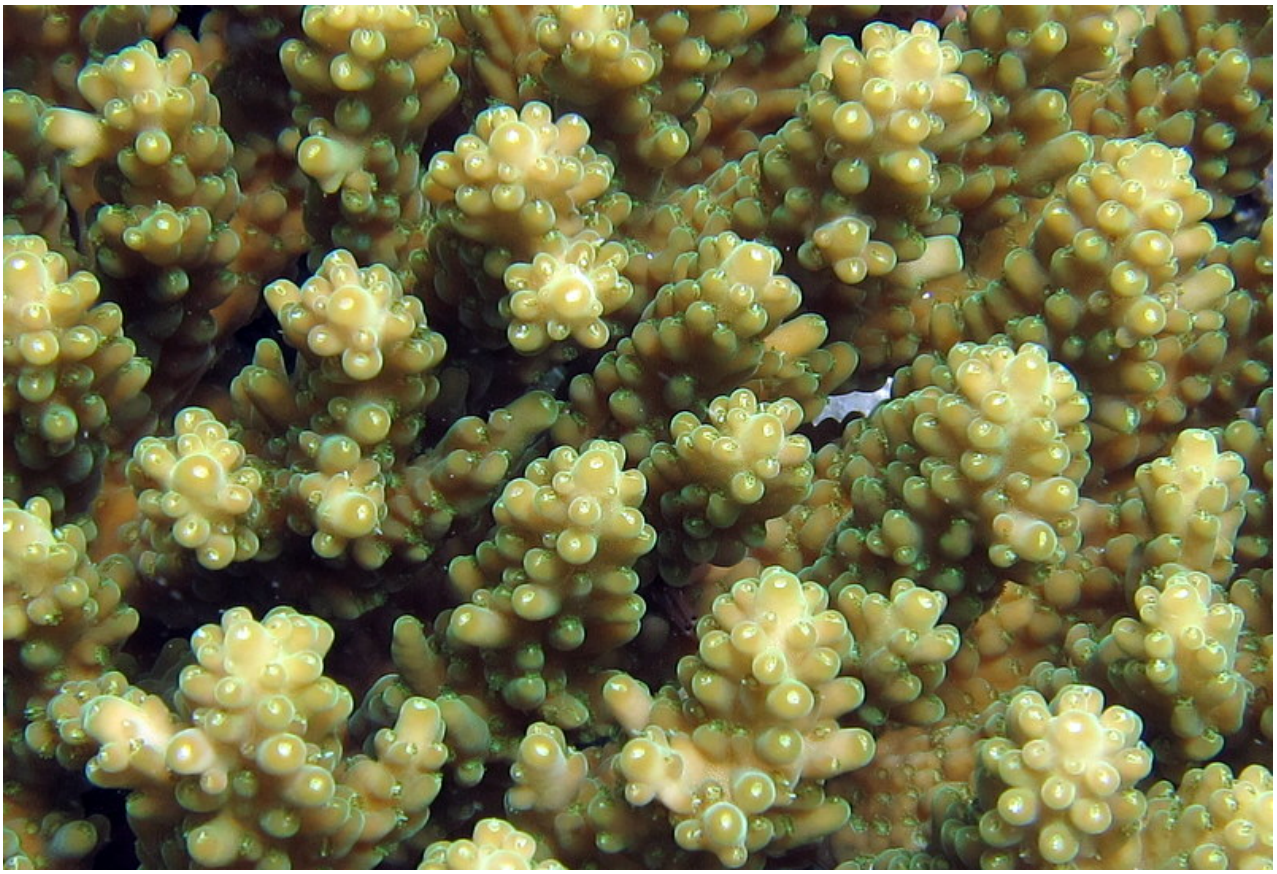
Still another species that is similar to *Acropora globiceps* is *Acropora digitifera*. *Acropora digitifera* has smaller, shorter branches. In some colonies, there are black dots on the radial corallites.

A colony of *Acropora digitifera* in the Northern Marianas. Note the small, short branches with small axial corallites.

2. *Acropora retusa*

This species forms colonies consisting of “digitate” (finger-like) branches. Both the axial corallite and radial corallites are cylindrical in shape. The axial is small and usually a longer tube than on other similar species, seen above. Radial corallites vary in size, giving the branches a “spiny” or “bumpy” look. This species has not been distinguished among living colonies until recently, and so it is particularly poorly known. It is on reef slopes and may be in other reef zones as well.

A colony of *Acropora retusa* in American Samoa.

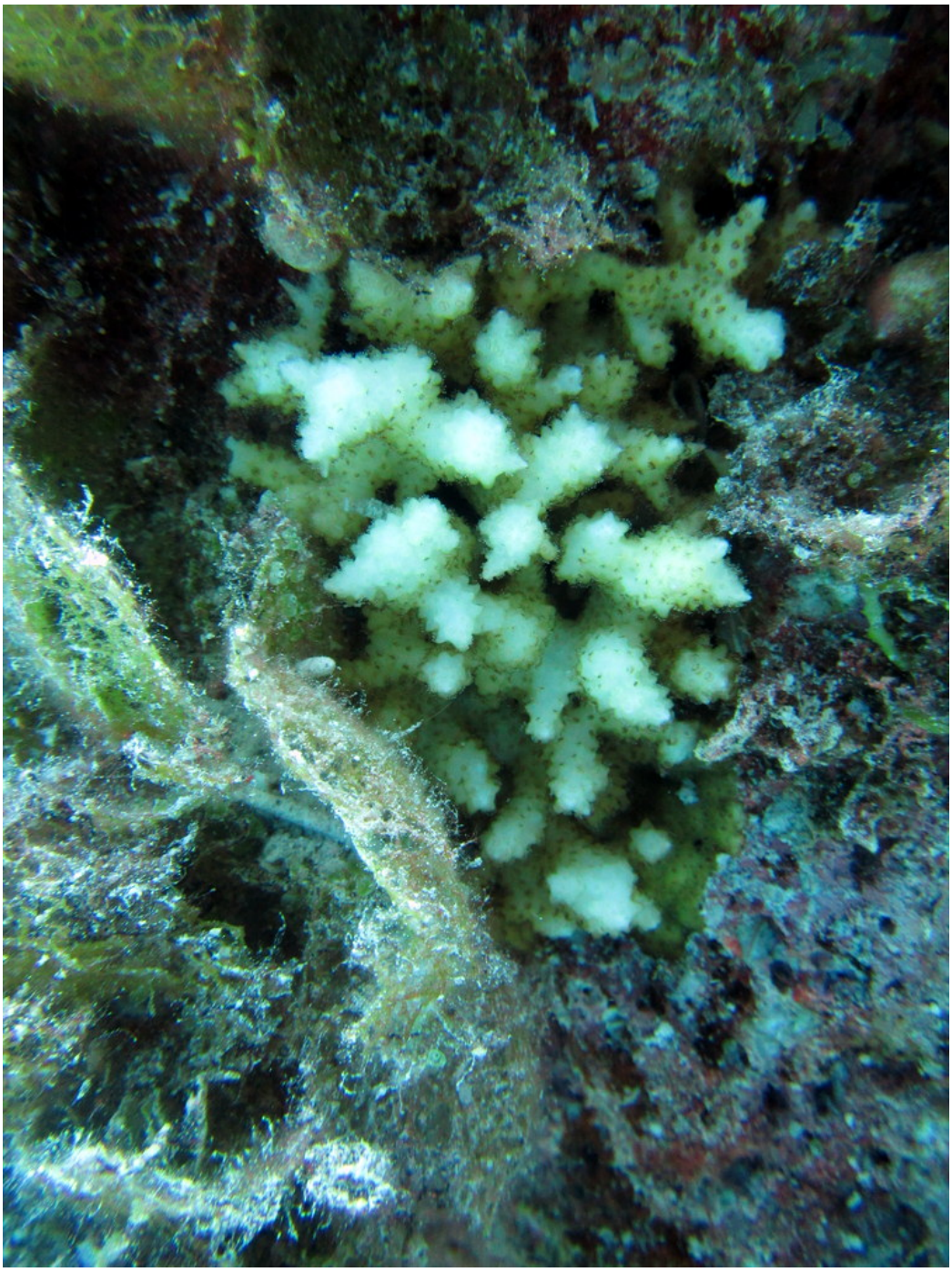


A closeup of *Acropora retusa* in American Samoa. Although *Acropora cophodactyla* can have a bumpy branch surface, the axial corallite is much larger in *Acropora cophodactyla*.

3. *Seriatopora aculeata*

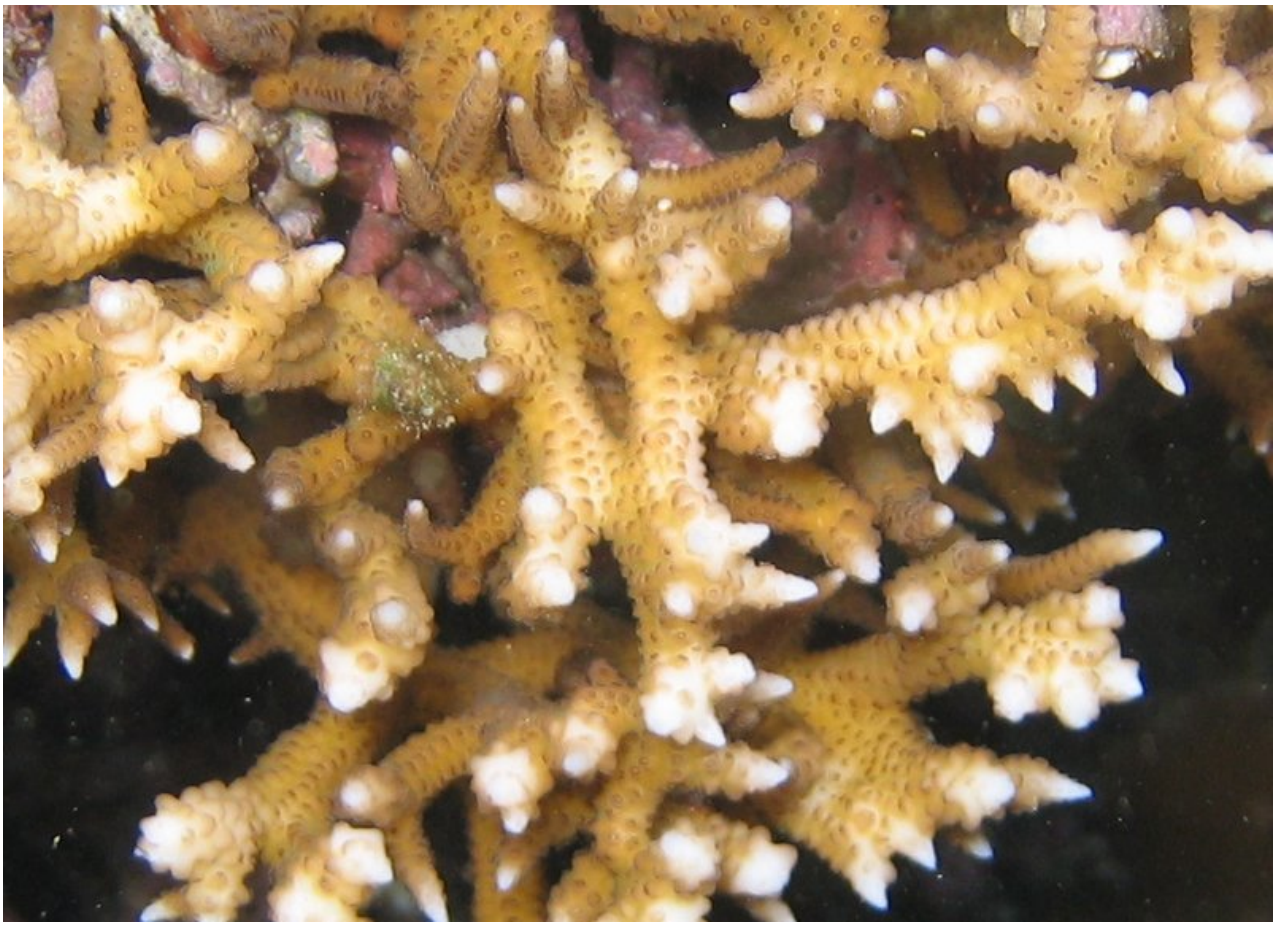
This species makes colonies of pencil-diameter branches, which are usually short and always taper sharply at the end to a relatively sharp tip. The corallites on the branch sides are neither in rows nor raised.

A colony of *Seriatopora aculeata* in (independent) Samoa.



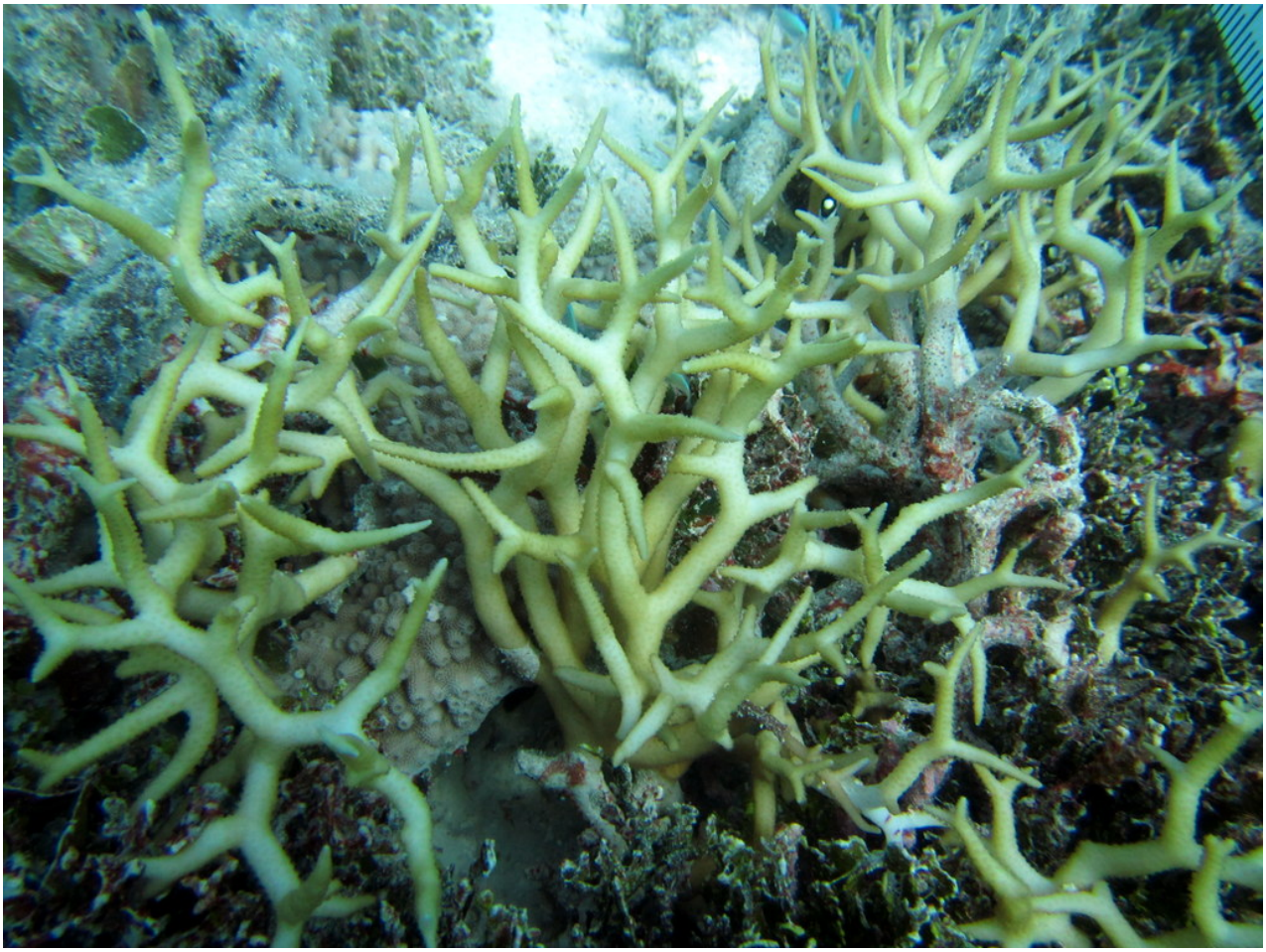
A closeup photo of *Seriatopora aculeata* in the Marshall Islands. Notice that the corallites (which look like black dots) on the sides of branches are not raised or in rows.

Seriatopora stellata has pencil diameter branches which taper strongly at the tip to a sharp tip. However, branches are not necessarily short, and the corallites on the sides of branches are raised and in rows.



A closeup photo of *Seriatopora stellata* in (independent) Samoa showing the raised corallites in rows.

Seriatopora hystrix is the most common and widespread *Seriatopora* species by far. It has long, gradually tapering, pencil-diameter branches with sharp tips.



A photo of *Seriatopora hystrix* from the Marshall Islands.