

Banggai Cardinalfish

Information, care and housing for the Banggai cardinalfish (*Pterapogon kauderni*).

By Scott W. Michael

Banggai cardinalfish (*Pterapogon kauderni*) by Aaron Norman.

Q. I'm a big fan of cardinalfishes, especially the Banggai cardinalfish (*Pterapogon kauderni*). I have seen photos of these fish living in groups, and was hoping I could re-create this scene in my aquarium. I talked to a local aquarium store owner, and even though they had a group together in a holding tank, he told me that keeping a group in an aquarium can cause problems and that they often fight. Is this true? If it is, are there any cardinalfish that can be kept in groups in the aquarium? I have a 55-gallon tank with a lot of live rock, some live corals and a sebae anemone. Currently, I only have two yellowtail damsels (*Chrysiptera parasema*) and two green chromis (*Chromis viridis*). I was also told by the local fish store guy that Banggai cardinalfish will go into sea anemones. Is that true? Would they go in my sebae anemone?
Jeff Eggers

A. Well, Jeff, your local fish store guy is correct. Although the Banggai cardinalfish forms shoals in the wild, it is risky to keep these fish in groups in captivity, unless you have a large aquarium (100 gallons or more). Although they may behave peacefully toward one another when first introduced to the aquarium, one fish or a pair will often start chasing and nipping their species tankmates. If kept in a larger tank, individuals will disperse throughout the aquarium, which will decrease the number of aggressive encounters. In small (and even medium-size) tanks, however, subordinate individuals will end up dead or cowering in the upper regions of the tank. A 55-gallon tank would not be large enough for more than one pair of these fish.

That said, I should mention some aquarists have succeeded in keeping shoals of Banggai cardinalfish in the same tank using the overcrowding method. This requires you to add a large number of these fish to the aquarium all at once. The theory is that if there are enough of these fish in the same tank, aggressive encounters will be spread among the group, so no one fish is getting picked on to the point of death. I have seen this method employed in larger aquariums, but there are risks in doing this in a tank as small as 55 gallons. For example, crowding a tank with fish will increase the chances of a disease epidemic. You might also overwhelm the biological filter if you add too many fish.

The Banggai may not be the best species to keep in aggregations, but there are some apogonids that will live peacefully in groups. One of the best shoaling members of the family is the bluestreak or threadfin cardinalfish (*Apogon leptacanthus*), which is regularly available in the aquarium trade. Although its colors are more subtle than *P. kauderni*, it is an attractive fish. It is also small, with a maximum length of less than 2½ inches. It does best if kept in groups of five or more. Do not keep it with overly aggressive tankmates. Also, provide it with branching soft or stony corals to hover over and hide within.

Some other species from the western Pacific that can be kept in groups include the fragile (*A. fragilis*), Gilbert's (*A. gilberti*), orangeline (*Archamia fucata*; do not confuse this species with the orangestriped, *Apogon cyanosoma*, which is often sold in the aquarium trade as the orangeline) and blackbelted (*Archamia zosterophora*) cardinalfishes. Most of these species hover over stony coral colonies and feed on passing zooplankton. The bridle cardinalfish (*Apogon aurolineatus*) can also be kept in groups. Unfortunately, these apogonids are less common in the aquarium trade, although this could change if aquarists start requesting them at their local fish stores.

Some other species can be kept in groups if you have a large enough aquarium so they can spread out, or if you use the technique described in which you densely populate a tank with a large number of individuals.

Also, keep in mind that many species of cardinalfish that appear to live in loose groups actually live in stable pairs. These pairs may aggregate in a preferred habitat, so it looks like there is really little or no organization in the group (especially if you do not take time to observe them or base your conclusion on a photo). You will find that pairs often exhibit subtle forms of aggression toward their neighbors. In the aquarium, the levels of aggression can escalate because of space restrictions.

A number of cardinalfish will associate with sea anemones, with several common western Pacific species being well known for this. The orangestriped cardinalfish (*Apogon cyanosoma*) and the Moluccan cardinalfish (*A. moluccensis*) occasionally associate with the leathery (or sebae) anemone (*Heteractis crispa*) and the magnificent sea anemone (*H. magnifica*). The

bridle cardinalfish is a resident of the Atlantic Ocean that inhabits the curlycue sea anemone (*Bartholomea annulata*). In some cases, cardinalfish simply swim near the stinging tentacles. In other cases, they readily contact and shelter within them.

The Banggai cardinalfish was originally reported to shelter among the spines of *Diadema* sea urchins. In Lembeh Strait, northern Sulawesi, I have regularly seen them swimming near the corkscrew tentacle (*Macroactylia doreensis*), giant carpet (*Stichodactyla gigantea*) and Haddon's carpet (*S. haddoni*) anemones. It will contact and swim among the tentacles of the leathery sea anemone. With the other three, the cardinals usually swim close but never (or rarely) come in contact with the stinging cells.

Once, I also saw a juvenile Banggai swimming around and between (but not contacting) the tentacles of the deadly Hell's fire anemone (*Actinodendron* sp.). Anemones are not the only cnidarians these cardinalfish associate with. Juveniles will swim among the tentacles of the anemone-like stony coral *Heliofungia actiniformis*.

When these cardinalfish first started to appear in Lembeh Strait, a single anemone would typically harbor an adult pair of *P. kauderni* and occasionally one or two juveniles. As the Banggai population increased, the most desirable anemones (i.e., *H. crispa*) were overrun with these cardinalfish. The carpet anemones, which seem the less-sought-after host, were still home to solitary pairs of *P. kauderni*. It's not unusual to see Banggai cardinalfish sharing an anemone with anemonefishes. I have seen them living alongside pairs of Clark's anemonefish (*Amphiprion clarkii*) and the pink skunk anemonefish (*A. perideraion*). One patch of three medium-size *H. crispa* was home to a pair of Banggai cardinals, a breeding pair of Clark's and a pair of pink skunks. In this and other cases, the anemonefish paid little attention to the cardinalfish, even when the anemonefish were guarding eggs.

If you get an individual Banggai or a pair of these apogonids, there is a good chance they will swim among the tentacles of your sea anemone. I have seen them associate with *H. crispa* on a number of occasions in the aquarium, as well as in the wild.