

Aquarium Heroes

Ten fish and inverts that'll be fine in tank water of varying quality.

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At this time of year, when my high school science classes are winding down toward summer vacation and room cleanup time becomes mandatory, I find myself facing the drudgery of demonstration tank teardown. I always try to keep several 10-gallon aquariums going at all times in my classroom to spark interest in my students and to provide specimens of algae and animal microlife for lab investigations. Chief among them are my local-species freshwater tank and a coastal Texas saltwater tank, both of which tend to have a constantly changing mix of fish and macroinvertebrates.

When my school year begins in late August, my students are greeted with lovely clean tanks with happily integrated communities of fish and invertebrates. The tanks draw the students like magnets, especially when they see such oddities as juvenile spider crabs (*Libinia dubia*), crayfish and diving beetles (*Cybister fimbriolata*).

Constant State of Change

But as the year wears on, things begin to change. Mounting duties make it harder and harder for me to keep the tanks scraped, vacuumed and freshened.

Blue-green *Oscillatoria* cyanobacters begin to blossom in the freshwater tank, creeping over the rocks and walls like a peacock-green plague. Formerly tiny fish become huge and hog all of the food for themselves, and supplementing it with smaller tank residents. The water develops a green tint due to the presence of decomposing algae, adding to the general darkening effect of the algal mats.

The saltwater tank fares no better. Instead of cyanobacters, films of reddish-brown diatoms plate the tank furniture and sides and stain the water a yellowish-brown. Encrustations of salt creep down the sides and spall off onto the floor. My kids ask me if there is anything left alive in the tanks.

"Most certainly!" I answer. Certain species always seem to win in the survival contest my tanks pose. I call these animals "aquarium heroes." They are actually preadapted to such eutrophicated waters in nature — although you might not know it by looking at their preferred habitats.

The author's school saltwater tank just prior to end-of-the-year teardown. It contains Gulf killifish, sheephead minnows, a fat sleeper and several anemones.

Saltwater Heroes

My fishy saltwater survivors are: the sheepshead minnow (*Cyprinodon variegates*), the diamond killifish (*Adenica xenica*), the Gulf killifish (or what I like to call the "southern mummichog," *Fundulus grandis*) and the fat sleeper (*Dormitator maculatus*). These amazing and durable fish are common along the Texas Gulf coast in a variety of quiet inshore habitats. All prosper in dirty water and grow fat on even the cheaper flake foods.

Cyprinodon variegates, *F. grandis* and *A. xenica* sport breeding colors in a well-lit classroom for most of the year and will spawn readily if given yarn spawning mops, although most of the fry will be eaten in the crowded conditions of a 10-gallon tank. However, now and then I find a few centimeter-long *F. grandis* fry hiding in crannies at the bottom when I clean out the tank. Fat sleepers are secretive, staying hidden inside shells or behind the filter (I use a corner filter) until coaxed out of hiding at feeding time. While shy, their peaceful nature and hardiness make them hobby favorites.

Invert Heroes

Persistent saltwater crustaceans include glass shrimp (*Paleomonetes pugio* and *P. vulgaris*) and mud crabs, especially the white-fingered or estuarine mud crab (*Rithropanopeus harrisi*) and the Texas mud crab (*Neopanope texana*). The first of these crabs has apparently recently invaded purely freshwater habitats. Mud crabs stay small, but larger ones do pose some danger to fish at night by catching them while they sleep on the bottom. They live for years in tanks with the most minimal attention.

The estuarine mud crab (*R. harrisi*) makes a hardy marine tank inhabitant that can adapt to a variety of water conditions.

Another invert hero is the warty sea anemone (*Bunodosoma cavernata*). This tough anemone needs only occasional bits of fish and to have the base of its column cleaned every now and then to stay expanded and healthy. Several of my specimens are now approaching their third year in my tanks, having survived several “transplantations.”

Freshwater Heroes

In my freshwater aquaria, three of the strongest heroes are black bullheads (*Amieurus melas*), Notropis shiners and lake chubsuckers (*Erimyzon sucetta*). Large black bullheads look great in exhibition tanks, but in smaller tanks they must be removed when they reach about 6 inches in length or they will eat everything in the tank. In my eastern Texas neighborhood, the blackspot shiner (*N. atrocaudalis*) is a handsome local “specialty” that I make the principal fish in my school freshwater tank. This peaceful shiner schools beautifully, always eats readily and survives the most punishing aquarium neglect. Other species and even genera of shiners, especially the blacktail shiner (*Cyprinella venusta*), are also quite hardy, but many are delicate and require more exacting care.

I don't want to give anyone the impression that I like to keep dirty tanks — it just happens. If you are a teacher, you will understand. But for those of you who want to have an aquarium that will contain live fish as long as it has water in it, aquarium heroes may be the answer!