

Marine Angelfish: Color and Style

Setting up a saltwater tank is often the result of seeing some of these beautiful fish.

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Fish from the Pomacanthidae family, the marine angelfish, are probably the most popular species of saltwater fish kept by marine aquarists. The fantastic colors and relatively hardy nature of these fish make them extremely desirable. Saltwater Fish Health Checklist

When shopping for marine angelfish, or any saltwater aquarium fish for that matter, observe the fish closely, looking for some of the problems listed below.

A lack of proper feeding response. Always request that a store employee feed the fish you are interested in before making a decision. This ensures that the fish is feeding properly on readily available foods.

Obvious thinness in belly or back areas. This indicates that the fish either has gone without food for some time or is not eating enough to sustain bodily functions. This is a sure sign of trouble in any fish.

Rapid breathing. This may be a sign of infection or a water quality problem. The normal respiration rate for angelfish is below 100 gill beats per minute. If the fish is respiring faster than this, you may want to look for another specimen.

Frayed and torn fins indicate that the fish has probably been in physical conflict with another fish. This kind of fin damage presents an opportunity for infection to occur.

Often, your intuition will come into play. If something about a potential fish for your aquarium does not feel right, try to determine why. The fish may be acting strangely (reading about the fish and observing it closely help) or the price may seem too high. Regardless of the reason, do not buy the fish. Wait for a better specimen.

There are approximately 80 species of angelfish, all from tropical seas (typically between the latitudes 30 degrees north and south of the equator). Perhaps 20 of these species are routinely offered for sale by pet stores, with another 40 or so species being available from time to time. The primary habitat of these fish is the coral reefs, where they can be found down to depths of about 650 feet, although some species are found in sea grass areas as juveniles.

Breeding marine angelfish in captivity has eluded hobbyists. Some species of pygmy angels have been reported to spawn in small marine aquariums, but no fry have been raised. In nature, angelfish are egg scatterers. At one time, a company in Florida was producing tank-raised angelfish hatched from eggs stripped from adult angelfish taken from reefs for this purpose.

The closest relatives of angelfish are the butterflyfish from the Chaetodontidae family. The easiest way these two groups of fish can be differentiated is that angelfish possess spines of their gill covers that are lacking in butterflyfish. Angelfish are far more adaptable to the confines of captivity than are the majority of butterflyfish.

There are certain facts about marine angelfish that must be understood before an aquarist should even consider adding them to a saltwater aquarium. First and foremost, although marine angelfish are considered relatively hardy, particularly in relation to other species of marine fish, they should not be exposed to the physical stresses of a newly established marine tank. The aquarium should be set up and running for three or four months before adding any species of angelfish. This ensures that the nitrogen cycle in the tank has been completed and the levels of ammonia and nitrite are so low as to be unmeasurable.

Angelfish typically exhibit significant intraspecific aggression. This means that they seldom tolerate the presence of others of their own kind in the small enclosed space of a home aquarium. They also can be aggressive toward other species of angelfish of similar size and shape. If an aquarist wishes to maintain more than one angelfish in a tank, it is best to build the population slowly, starting with a small angelfish. This gives the smaller fish an opportunity to create a territory it can defend before another angelfish is introduced.

Some species are more pugnacious than others, to the point of never allowing any other angelfish to reside in the tank in peaceful coexistence. Species from the Eastern Pacific are notorious for their extremely territorial behavior. Angelfish are

not aggressive, however, with species from other families, such as clownfish, wrasses and so on. Hardy Angelfish Species

Apolemichthys xanthurus. Yellow tail angelfish, length to 6 inches. Fairly subdued colors, but handsome none the less. Not as commonly available as other angels, but worth searching for.

Centropyge vrolicki. Pearlscale angelfish, length to 4 inches. Very inexpensive, but not as colorful as other members of this genus. A good beginner's fish.

Holocanthus ciliaris. Queen angelfish, length to 18 inches. From the Western Atlantic and readily available. The blue angel, *H. bermudensis*, is very similar. The term "Townsend's angel" is not a valid species name — it refers to a queen angel that is a hybrid of queen and blue angels.

Pomacanthus imperator. Emperor angelfish, length to 14 inches. Juveniles adapt best to captivity (3 to 4 inches in size). Fairly expensive.

Pomacanthus paru. French angelfish, length to 20 inches. Juveniles possess distinctive yellow and black pattern, but adults are more drab in color. The gray angel (*P. arcuatus*), also from the Western Atlantic, is very similar.

It is also important to know the care requirements of the species you are interested in. Find out what foods will be accepted, how large the fish will grow and the general hardiness of the species. Avoid very small specimens (less than 1 inch) — they must feed continuously to avoid starvation. Conversely, avoid very large specimens — they ship poorly and are much less likely to adapt to captivity, both in terms of available space and the foods likely to be offered by an aquarist. When choosing angelfish, look for potential problems by carefully observing the fish, checking for any of the danger signs listed in the sidebar to the right.

It is very important to carefully choose the species of angelfish you are going to buy. Not all species adapt equally well to captivity. In the sidebar entitled "Hardy Angelfish Species" are suggestions for those species that are relatively easy to maintain in captivity.

You should also be aware that many species of angelfish change color as they mature. In the case of the gray angel (*Pomacanthus arcuatus*), the fish changes from an attractive black-with-yellow-stripes juvenile to a primarily gray-colored adult. Sometimes, the color change is for the better. A juvenile emperor angel (*Pomacanthus imperator*) is basically blue with white stripes, whereas the adult is considered by many to be the most beautiful marine fish of all. These fish are expensive, particularly the adults. Avoid the temptation to buy a less-expensive juvenile emperor, however, in the belief that it will metamorphose into the prized adult colors. Captivity seems to cause this transformation to go awry. Often, the fish never completes the color change, or the normal adult colors pattern is attained but the colors lack the vibrancy of adults taken from tropical seas.

All of the species listed in the sidebar will do well if fed a variety of foods, such as brine shrimp, romaine lettuce, shredded shrimp or scallops and krill. In addition, these fish will readily accept prepared foods, such as flakes, pellets, gelatin formulas and all types of freeze-dried foods. The key to a complete diet is a variety of foods. Try to feed at least six different foods each week. Vegetable matter should represent at least one-third of the weekly diet.

In the sidebar entitled "Moderately Hardy Angelfish" are additional species of marine angels that will usually do well in captivity. The only difference between these fish and the ones in the previous list is that some individuals of these "less hardy" angels may be reluctant to begin accepting food or may be more prone to disease problems.

Moderately Hardy Angelfish

- Centropyge bispinosus* — coral beauty
- C. argi* — cherubfish
- C. fisheri* — Fisher's angel
- C. flavissimus* — lemonpeel angel
- C. heraldi* — false lemonpeel
- C. loriculus* — flame angel
- C. potteri* — Potter's angel
- C. tibicen* — keyhole angel
- C. Chaetodontoplus septentrionalis*
- C. duboulayi* — scribbled angel
- C. melanosoma* — black poma

C. mesoleucas — Singapore angel
C. personifer — personifer angel
Genicanthus bellus — ornate angel
G. lamark — Lamark's angel
G. watanabei
Holacanthus passer — king angel
H. venustus
Pomacanthus annularis — blue ring angel
P. maculosus
P. navarchus — blue girdled
P. semicirculatus — Koran angel
P. sexstriatus — six bar angel
P. zonipectus — Cortez angel
P. xanthometopon — blue-faced angel

There are some angelfish species that are infamous for their lack of adaptability to home aquariums. A few species are so delicate that it is extremely rare to have one survive more than a few months in captivity. More often, the angels in this category will eat well and appear fine in all respects, but succumb to one problem or another after less than a year. These fish are listed in the sidebar entitled "Delicate Angelfish Species."

A primary problem associated with these marine angels appears to be specialized food requirements that cannot be duplicated easily by aquarists. This may not always be obvious. A fish can be eating well and die from a bacterial disease after a year in captivity. The aquarist may be unaware that nutrition — and water quality — are extremely important to maintaining the immune system of the fish. Once the immune system is compromised, the fish is much more susceptible to disease.

Although angelfish do not normally bother other species that are tankmates, every combination of fish in a community tank must be carefully thought out. Large groupers are obviously not good tankmates for pygmy angels. Sometimes an individual fish doesn't fit the typical behavior patterns of its species. An example is an emperor angel that is so aggressive it even attacks the aquarist's hand. Angelfish placed in one of the popular mini-reef type of saltwater tanks will quickly consume many of the invertebrates that the mini-reef is so well suited to house. A possible exception to this appears to be pygmy angels of the genus *Centropyge*.

Angelfish are not particularly prone to disease, but they do develop problems from time to time. Aside from the normal bacterial and protozoan diseases that afflict all marine fish, there are some special problems to be aware of. Head and lateral line erosion syndrome (HLLE) is a disease problem common in angels, tangs and groupers. The disease is slow to develop and is rarely fatal, but it permanently scars the fish that have it.

Delicate Angelfish Species

Apolectichthys arcuatus. Hawaiian bandit angelfish. Rarely begins feeding on normal foods in captivity — try live sponges if available.

Centropyge bicolor. Oriole angelfish. Less than half of these fish will live beyond 6 months. Some never eat in captivity, while others pick at food and eventually starve.

Centropyge multifasciatus. Barred angelfish. Prone to pygmy angel bloat syndrome. Fish does well for a few weeks and then develops edema. Very difficult to treat. *Genicanthus* angels also develop this problem.

Holacanthus tricolor. Rock beauty angelfish. Very difficult to keep alive despite efforts of experienced marine aquarists. There may be exceptions, but this species is best avoided.

Pygoplites diacanthus. Regal angelfish. Rarely accepts any food in captivity. Reports indicate that very small specimens will sometimes begin eating normal aquarium foods.

It starts as tiny, light-colored areas on either side of the fish's head, above and behind the eye. After a time, actual pits develop in the skin of the fish. Eventually, the erosion spreads down the body of the fish along the lateral line. Numerous causes for this disease have been suggested, and there are just as many "cures." Currently, the most promising way to control HLLE is to feed the fish foods high in vegetable fiber and supplement that food with vitamins.

A disease that is common in angels, clownfish and butterflyfish is Lymphocystis, which is characterized by lumpy gray-white growths on the fins of the fish that resemble cauliflower. Similar to warts on humans, this disease is rarely fatal and most treatments do more harm than good. Unless the growths appear on the mouth, which could inhibit feeding, it is best to do nothing. The growths will disappear in a month or two.

A more serious problem is pygmy angel bloat. The stricken fish develops edema and its body fills with fluid. This results in death in a very short time. The disease is most common in newly imported Centropyge angels, and may be the result of bacterial kidney disease. Internal bacterial diseases are extremely difficult to treat, usually requiring special antibiotic-treated foods.

Don't let these descriptions of disease scare you away from keeping marine angelfish. If healthy fish are purchased, most aquarists will never have to deal with these problems.

By using the basic information presented here in combination with good fishkeeping skills, as well as your dealer's advice and information from books on marine aquariums, you will develop the skills necessary for keeping marine angelfish. These beautiful fish will be the highlight of your saltwater aquarium.