

CATFISH

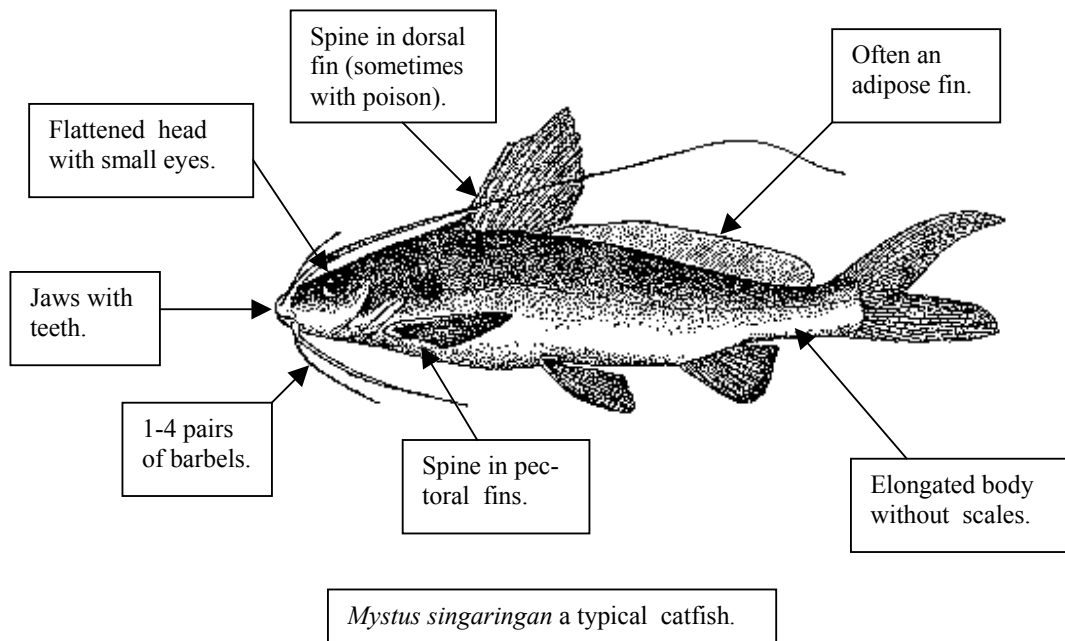
Hearing the name catfish probably makes most readers think of the walking catfish (*Clarias batrachus*) so common in the markets along the Mekong river, or the Giant Catfish (*Pangasianodon gigas*), one of the biggest freshwater fishes in the world. But the group of catfishes (the order Siluriformes) actually includes at least 31 families and some 2200 species. The majority of these species, however, are endemic to South America.

The approximately 125 catfish species, so far recorded in the Mekong basin, belong to 11 families: Bagrid catfishes (Bagridae), sheatfishes (Siluridae), schilbeid catfishes (Schilbeidae), river catfishes (Pangasiidae), sisorid catfishes (Sisoridae), torrent catfishes (Amblycipitidae), beaded catfishes (Akysidae), airbreathing catfishes (Clariidae), airsac catfishes (Heteropneustidae), sea catfishes (Ariidae), and eel-tail catfishes (Plotosidae).

As might be expected from such a large group, there is considerable variation in size and shape. Adult beaded catfish species, for example, will only be a couple of centimeters long, while the giant catfish can reach 300 cm.

The elongated body without scales, the flattened head with small eyes and barbels (whiskers), and usually the presence of stout spines in dorsal and pectoral fins, sometimes together with protective covering of bony plates, normally makes it easy to recognize a catfish when you see it.

The taxonomic relationship between catfishes and carps is evident from the many characters shared by the two groups eg. the Weberian apparatus, fear scent and presence of barbels (see Catch and Culture sup. 1). Barbels in catfishes however, are more conspicuous and more numerous (1-4 pairs). Other differences are that the jaws in catfishes have teeth, while carps are toothless. Many catfish species also possess an adipose fin, situated between the dorsal and caudal fins. The size and coloration of the adipose fin are often important characters for the identification of species (in for example *Mystus* species).



The relatively small eyes, that most catfishes have, indicate that the vision is not their primary sense for orientation. The whiskers are closely packed with sensory organs, giving the catfish keen senses of smell and taste, allowing the fish to detect their prey from a distance without seeing it.

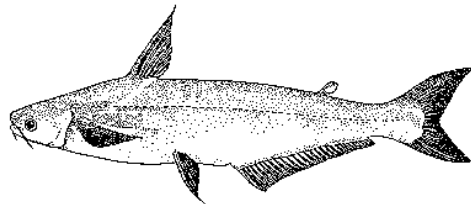
It is therefore hardly a surprise that catfishes are especially successful in muddy waters, and that they normally are bottom-orientated night active species. During daytime hours, they rely on their camouflage, and their protective spines, which can be poisonous in some species (e.g. in eel-tail catfishes).

One exception to this rule is the glass catfish (*Kryptopterus bicirrhis*), a day-active pelagic species camouflaged in the open water by its semi-transparency.

Catfishes are generally not very fussy about the food, and most species have a broad diet. A few species however seem to feed only on fruits, insects, or snails.

It is very difficult to generalize about the reproductive patterns in catfishes. River catfishes spawn only once a year, but lay many eggs. Sea-catfishes lay as little as 100 eggs but protect their eggs and offspring against predators by taking them into their mouth thus ensuring a higher survival rate.

Like various members of the carp family, many catfish species are highly migratory, but contrary to the cyprinids, which tend to migrate during the day, most catfishes seem to be migrating during the night. Especially sheatfishes, and bagrid-, sisorid-, and river catfishes, are moving upstream during the rainy season (April to August). There are even some indications that one species *Pangasius krempfi* is anadromous (living in the sea but spawning in fresh water). This species is said to be migrating between the South China Sea and the Laotian/Thai part of the Mekong. This migratory pattern is very unusual since catfishes like carps generally are freshwater fish.



Pangasius krempfi: An anadromous species?

Only two families (sea catfishes, and eel-tail catfishes) are mostly marine.

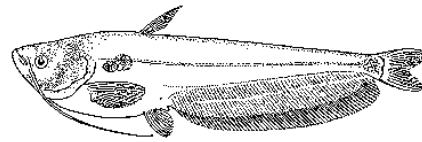
In freshwaters, catfishes can be found almost everywhere. Some species are adapted to survive under harsh conditions, such as low oxygen levels and ponds that dry up. The best known of these is probably the already mentioned walking catfish (*C. batrachus*). The walking catfish is able to breathe air from the atmosphere and it can move short distances over dry land if its habitat dries up. The walking catfish is thus able to survive just about anywhere in the Mekong basin including ricefields, swamps and canals.

Other catfish species only live in fast flowing high gradient streams (eg. torrent and sisorid catfishes). In the sisorid genus *Glyptothorax*, small grooves under the head make up a kind of sucker that enables the fish to stick to stones etc. preventing them from drifting with the current.



Glyptothorax fuscus with a sucker under the head..

Even though accurate information on the importance of catfishes in Mekong fisheries is still missing, a visit to the nearest fish market in most areas within the Mekong basin leaves no room for doubt about the importance of catfishes as food-fish. Some of the most common species in the markets are *Clarias batrachus*, *Wallago attu*, *Ompok bimaculatus*, *Helicophagus waandersi*, *Kryptopterus* spp, and *Pangasius* spp. to mention a few.



Walking catfish (*C. batrachus*) (right) and *Ompok bimaculatus* (left) are common species in fish markets everywhere in the Mekong basin.

Because of their high-value flesh, their fast growth, and because they can be stocked with a high density, a number of catfish species are now cultured, e.g.: *Clarias* spp., and *Pangasius* spp. For example, millions of juvenile *Pangasius bocourti* and *Pangasius hypophthalmus* are caught in the Cambodian and Vietnamese part of the Mekong every year and stocked in either ponds or cages.

Since they are relatively easy to keep in captivity, because of their peculiar body shapes, and in some species a beautiful coloration, many catfishes are also favorite ornamental species. An aquarium without, at least a couple of catfishes, is rarely seen.