

Electric Eel

Scientific Name: *Electrophorus electricus*

Class: Actinopterygii

Order: Gymnotiformes

Family: Gymnotidae



Length can be up to 91 inches, with a weight of up to 100 pounds. The body is long, rounded and naked. The gastric cavity and internal organs are immediately behind the head, and only the swim bladder extends far to the rear. The main portion of the body is formed by a long "tail" or rear portion, generally lacking a caudal fin or having just a trace of one. The anus is well forward, located under the pectoral fin or on the throat. The dorsal fin is either greatly decreased in size or absent altogether; in some species without a caudal fin a fibrous structure replaces the dorsal fin. Pelvic fins are never present, and the pectoral fins are of various sizes. The anal fin is greatly elongated. It

extends two-thirds or three-quarters of the entire length, and in one species proceeds around the finless tail to the upper side of the body. The eyes are degerate and generally have an additional eyelid as an adaptation to the nocturnal life. The gill openings are small. The swim bladder varies in shape, but is usually in a bony capsule. The throat is large, with cylindrical teeth. The electrical generating organ is composed of 5,000 to 6,000 elements, arranged like a dry battery. The head acts as the positive pole and the tail the negative pole. When the eel is at rest there is no generation of electricity, but when it starts to move it emits electrical impulses at the rate of about 25 per second. During intense feeding, discharges of up to 50 per second have been recorded. These discharges aid in navigation, locating food, and the killing of prey. Small animals are killed outright, while large mammals become stunned and drown.

Range

Amazon basin of South America.

Habitat

Marshy areas or stagnant arms of rivers.

Behavior

The elongated anal fin aids in a continual undulating motion, and permits these fish to move backwards as well as forward without using the body and pectoral fins. This also enables them to flee rapidly if necessary. The electric charge is used to stun or kill prey. This charge can be up to 500 volts at 2 amperes, and can kill large mammals. The electric charge is generated by a large number of cells in the body. By a muscular flexion, the eel can discharge these cells. Each cell is capable of only a very small voltage, but all of them firing at once cause the large voltage output. This strongest output is released only during times when they are hunting prey, mating, or trying to escape predators. Their head and tail are the opposite poles of a living battery.

Reproduction

Both males and females emit voltage bursts while mating, but neither is affected by them. However, if these voltage bursts are emitted when not mating, they can kill the other eel. The reason why is not known. Little else is known of their reproduction.

Wild Diet

Fish.

Zoo Diet

Thawed smelt and cocktail shrimp.