

GEORGIA AQUARIUM ANIMAL FACT SHEET

Electric Eel

Electrophorus electricus

Range/Habitat

- The electric eel is native to South America, specifically the Amazon basin, the Orinoco River, and the Guyanas.
- It lives in freshwater areas such as pools, deeply shaded streams and creeks, and murky water.
- This species prefers muddy bottoms in calm waters and is often found on coastal plains, swamps, and creeks.
- It is common throughout its range.

Physical Characteristics

- The electric eel is the largest of the knifefish and can grow to be almost 8 feet (2.5 m) and weigh up to 60 lbs. (27 kg).
- It is a long-bodied fish with a flattened, broad head. Its body is cylindrical toward the front, becoming compressed laterally toward the tail.
- Its elongated, scaleless body is olive to black in color with a yellow or orange-hued throat region. It lacks a dorsal (top) fin, caudal (tail) fin, and pelvic (bottom) fins.
- The electric eel has a large mouth with one row of cone-shaped teeth on each jaw.
- Its electric organs consists of flattened columns of electroplates arranged in rows along its sides behind the head. The electroplates are composed of a series of hundreds of thousands of electrocyte cells.

Diet/Feeding

- The adult feeds on smaller fish as well as amphibians. The size of its prey increases with the eel's size, as well as the power of its electrical shock, which is used to stun or kill its prey.
- Young electric eels consume bottom-living invertebrates.

Conservation Status

- The electric eel is not included in the IUCN Red List.

Additional Information

- The electric eel is not aggressive. The primary use of its electric charge is for defense against potential predators or to immobilize and kill prey. It can produce a shock exceeding 500 volts.
- The vital internal organs of this eel are compressed into the anterior (front) 1/8 of its body near its head. The rest of its body is the electricity-producing tail. Therefore, the longer the tail, the larger the electric discharge that can be generated.
- It is an obligate air-breathing fish that absorbs 80 percent of its required oxygen by taking air in through the mouth. Vascular folds in the lining of the mouth absorb the oxygen. This air is later released through the gill slits in the form of bubbles.
- The electric eel will drown if denied access to atmospheric air. However, as long as its skin is kept moist, it can survive for several hours out of the water.
- This species is nocturnal. It hides during the day under shelter or in holes.

- In addition to protection and stunning prey, the electric discharge is also used for navigation and social communication. The electric eel is able to create an electric field surrounding itself that compensates for its poor eyesight in its murky water habitat. This method is similar in nature to echolocation, which is used by bats and dolphins in their environments for similar purposes. By using its electric receptors, an eel can identify the transmissions of other non-electrical fish, as well as detect the heartbeat of other fish nearby. In addition, it may also be able to identify other electric eels in surrounding waters.
- In order to produce the best “picture” of its surroundings, the eel must remain rigid. However, when an eel is in motion, it swims easily with a side-to-side movement aided by the use of its anal (bottom) fin that helps to propel the animal forward.

Sources

www.fishbase.org

Fishes of the World, An Illustrated Dictionary. Wheeler, Alwyne, pgs. 181-182

Encyclopedia of Fishes, 2nd Edition. pg. 112

http://www.aip.org/radio/scripts/electric_eels.txt

www.whozoo.org