

## Natural Planet

### Ep. 20 – Electric Eels

The electric eel; technically speaking is not actually an eel. These long cylindrical very eel like fish are in fact more related to catfish and the common carp than true eels. They are dark green or grey in colour with a yellow belly. They can grow up to eight foot in length and live up to fifteen years, and can produce almost 600 volts as a defensive tactic.

These are some of the most unique organisms to evolve on Earth, an animal with the capability to control electricity itself and discharge shocks at will. In the 1800s Alexander von Humbolt went trekking through South America and came upon these eels which leaped out of the water and released shocks onto his horses. One small eel was capable of completely stunning a huge powerful male horse. To produce such a shock they employ the use of 6000 specialised electrocyte cells in their skin. They store energy much like a battery does and when attacked, or when they want to attack and stun their prey, they discharge a huge shock. They can also release much smaller pulses to navigate as their eyesight is poor, and the waters of the Amazon and Orinoco rivers where they live is very dark with terrible visibility.

These small pulses also generate a field around the eel which can be used to detect anything that swims past. If a smaller fish were to swim too close to the eel, it would be detected. Then the eel would turn and let off a small shock, this makes the fish twitch and reveal its position. If the fish is hiding the eel shoots out an electric pulse, forcing the fish from their hiding spot. The eel then lets off a larger pulse to completely paralyse the prey, it cannot move nor do anything to protect itself from what is next. The eel darts forwards and eats the fish in one gulp (this has also been recorded to happen to people's fingers), and while the shock itself is not deadly to adult humans it is more dangerous to children and the elderly (although still incredibly painful).

If you ever get a chance to see such an animal (which I highly suggest) don't put your fingers in the tank. Sometimes just watching is the best idea.