

American Eel & European Eel

Anguilla rostrata & *Anguilla anguilla*

Bermuda Protected Species



GOVERNMENT OF BERMUDA

Department of Environment & Natural Resources



American eel *Anguilla rostrata*

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Current Status

Native

BPSA: Level 2

CITES: Appendix II (*Anguilla anguilla*)

Bda Red List: *Anguilla rostrata* VU;
Anguilla anguilla CR A1a,b,d

CMS: Yes

Fisheries Order: No

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Ecology

Known locally as freshwater eels or marsh eels, all of the specimens collected from Bermuda's wetlands have proven to be *Anguilla rostrata*; however the larvae (also known as leptocephali) of both species occur within Bermuda's territorial waters.

Identification

Elongated body that is cylindrical in shape in the front half and somewhat compressed in the back half. Lower jaw slightly longer than the upper jaw; lips are thick. Head rather long; eyes small and placed well forward on head. Dorsal, anal and caudal fins form one continuous fin from the middle of the back to the anus. Pelvic fins absent. Colouration goes through distinct phases depending on stage of development, from transparent (glass eel) to yellow (elver), and finally silvery. Adults coloration is variable but usually light-colored below and brownish above. Distinguishing between the two species using external characteristics is extremely difficult.

Range

Both species live in the Atlantic basin. American eels are found along the eastern coastlines of Canada and the U.S.A from Greenland to Trinidad, including the Caribbean and the Gulf of Mexico. European eels range from Scandinavia to Morocco as well as the Baltic, Black and Mediterranean Seas.

Habitat

These eels are catadromous, meaning that they spend most of their lives in freshwater and return to the sea only to breed. They live in rivers, muddy lakes, coastal lagoons, estuaries, and tidal marshes throughout their ranges. In Bermuda they were

historically described as common in the ditches of Pembroke Marsh and Devonshire Marsh; they were also known to inhabit some marine cave systems and many brackish ponds.

Diet

Feed on the larvae of a wide variety of insects including Mayflies, dragonflies, stoneflies, beetles, caddisflies, as well as upon snails, aquatic worms, amphipods, isopods, mysids, and many different fishes.

Reproduction and Life Cycle

Larvae are transparent, shaped like a willow leaf and develop at sea. These metamorphose into elvers once they reach nearshore waters and river estuaries. Adult eels of both species migrate large distances (in some instances thousands of miles) to spawn in the deep waters of the Sargasso Sea. Sexual maturity is reached during the spawning migration. Females are larger than males and can grow to 3 feet (1 m) in length and weigh up to 15 pounds (7.5 kg). The average life span is thought to be 15-20 years but individuals can live up to 90 years (in captivity).

Why protect these species?

Eel stocks, particularly in Europe, are at historically low levels due to a combination of overfishing, habitat loss, food web alterations, and environmental changes that include pollution and the construction of dams which prevent juveniles from easily migrating up rivers.

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What is being done to conserve them?

Anguilla anguilla is protected under Appendix II of the Convention on International Trade in Endangered Species (CITES) which restricts their international trade.

Protected Species Act Listing: Level 2, 2012

IUCN Red List: *Anguilla rostrata* Endangered A2bd; *Anguilla anguilla* Critically Endangered A2bd+4bd (ver 3.1)

Recovery Plan: Proposed.

Research: Historical research in Bermuda has involved distributional surveys in marshes, dietary analyses of captured individuals, age and growth studies, taxonomy, as well as oceanic surveys to detect the presence and abundance of eel larvae in the Sargasso Sea.

Habitat protection: Most of the ponds and marshes inhabited by these species have been designated as Nature Reserves. These species would benefit greatly from protection being afforded to the Sargasso Sea.

Recovery of injured animals: Members of the public can call, or deliver injured wildlife (especially protected species) to, the Bermuda Aquarium, Museum and Zoo, #17 North Shore Road, Flatt's Village. Tel (441) 293-2727.

Protective legislation

Protected Species Act (2003). Furthermore, the European eel is protected under Appendix II of the Convention on International Trade in Endangered Species (CITES) which restricts their international trade.

What you can do?

Learn: Understand how pollution and the destruction of habitat leads to loss of endangered and threatened species and Bermuda's plant and animal diversity. Tell others what you have learned.

Be an informed consumer of fish and think twice before eating *unagi* (the Japanese word for freshwater eel). Seafood Watch, a sustainable seafood advisory list, recommends that consumers avoid eating *unagi* due to significant pressures on worldwide freshwater eel populations.

Join a conservation group: such as the Bermuda Zoological Society or the Bermuda Audubon Society.

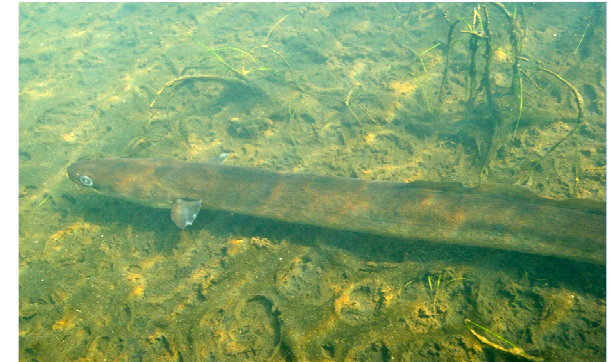
Report: Members of the public are encouraged to report freshwater eel observations to the Department of Conservation Services.

Information sources

www.fishbase.org

Boetius, I., and Boetius, J. 1967. Eels, *Anguilla rostrata*, LeSueur, in Bermuda. Danish Institute of Fisheries and Marine Research 130:63-84.

Smith-Vaniz, W., Collette, B.B., and Luckhurst, B.E. 1999. Fishes of Bermuda: History, Zoogeography, Annotated Checklist, and Identification Keys. American Society of Ichthyologists and Herpetologists 4:128-129.



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For Further Information

#17 North Shore Road, Flatt's, FL04, Bermuda (441) 293 2727.

www.environment.bm

Disclaimer: The information contained in this publication is based on the knowledge and understanding at the time of writing.