

Brown Bullhead

Ameiurus nebulosus (Gunther, 1888)

syn. *Silurius nigrescens*, *Ameiurus catus*, *Pimelodus catus*, *Ameiurus lacustris*, *Pimelodus nebulosus*, *Ictalurus nebulosus*



ALBERTA REGULATION:
FISHERIES ACT

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Michael Kesi

Overview:

The brown bullhead is a ray-finned fish of the North American freshwater catfish family. It is native to the Atlantic and Gulf Slope drainages, from Nova Scotia and New Brunswick to Alabama and from Quebec west to Saskatchewan, as well as in the Great Lakes, Hudson Bay and Mississippi basins.³ It has been introduced to many countries around the world as a game fish and is considered a good eating fish.¹

A. nebulosus can tolerate a wide range of environmental conditions, including habitats degraded by domestic and industrial pollution as well as high temperatures.¹ It can also survive long periods out of water if kept moist.¹ This fish has been observed to bury

itself in the mud to avoid adverse environmental conditions.³ It is known to establish in most waters where introduced.²

The brown bullhead is an omnivore, feeding as both a scavenger and a predator. Their sensory barbels can locate prey in the substrate.¹ This nocturnal feeder will consume plankton, algae, insects, molluscs, worms and also the eggs of other fish.¹ Sharp spines in the fin release toxins that become erect when threatened, causing painful wounds.¹

As of January 1, 2016, the possession, sale, or transport of this species in Alberta is illegal under the Fisheries Act.

Habitat:

A. nebulosus prefer still or slow-moving waters in creeks, rivers, ponds and lakes with moderate vegetation, and sand or mud bottoms. Rarely enters brackish waters.³ Brown bullhead can tolerate high carbon dioxide, low oxygen, and water temperatures up to 31.6 °C.³ Tolerant of pollution. They can be found at depths up to 40 m.³

Identification:

Brown bullhead have a thick body and a ventrally flattened head. There is a distinct hump behind the head and the back is arched.¹ The body is often mottled, dark brown to greenish-olive on the back and paler in colour on the sides. The belly is creamy white to pale grey and the undersides of the



Brown Bullhead *(continued)*

head and lower jaw a buttery yellow colour.¹ Four pairs of barbels - a long whisker-like one at each corner of the mouth, a pair in front of the eyes, and two pairs beneath the chin. The brown bullhead is distinguished by light ends of the chin barbels. Also, this fish has no scales and the skin is thick and leathery with a mucous coating.¹

The dorsal fin has one spine and 6-7 soft rays, the anal fin one spine, and the caudal fin 18-19 soft rays.³ The spines are sharp and contain toxins which can cause painful wounds if the fish is not handled carefully.¹

Common length is 25 cm, maximum reported length 55 cm and maximum published weight 2 kg.³

Ecology:

Nests are built by one or both of the sexes and mating is preceded by a period of the male and female caressing each other with their barbels. During spawning the male and female maintain body contact while facing in opposite directions.³ Eggs are guarded by one or both parents and the eggs are aerated by fanning. They move and stir the eggs with their barbels and/or pick up by the mouth and ejected

to encourage hatching. There haven been reports of parents eating their own eggs.³ The eggs hatch in about a week and the young disperse in small shoals.¹

Brown bullhead are voracious, nocturnal feeders and will consume a wide variety of prey, including snails, insects adults and larvae,¹ molluscs, leeches, crayfish, plankton, worms, algae, plant material, and reported to feed on the eggs of native fish, such as herring and lake trout.³ Juveniles feed mostly on midge and lake fly larvae, crustaceans, and mayflies.³

Maximum reported age is 9 years.³

Economic Impacts:

Brown bullhead compete directly with native fish for food and also prey on the eggs of some native fishes such as lake trout.³ Any declines in native sportfish populations could have impacts on recreation and tourism.

Environmental Impacts:

Introduced predators like brown bullhead have been shown to reduce the abundance and diversity of native prey species in several rivers of the

Pacific Northwest.²

Sociological Impacts:

The sharp spines in the fins release toxins which can cause painful wounds.¹ The transformation of native aquatic communities results in the intrinsic loss of natural capital and enjoyment of natural areas.

Prevention:

Learn how to identify brown bullhead and how to prevent spread. Do not purchase or keep brown bullhead. Never empty your aquarium into natural water bodies.

Commercial fishing can unintentionally transport brown bullhead in nets as this fish can survive long periods out of water if kept moist.¹

Control:

Currently there are no established control options for the brown bullhead other than preventing introduction. If caught, brown bullhead should be killed and not released. Report any sightings.



Wolfgang Ros



Brown Bullhead (continued)



Richard Lapar



Darren Baker

REFERENCES:

1. Global Invasive Species Database (GISD) 2015. Species profile *Ameiurus nebulosus*. www.iucngisd.org/gisd/species.php?sc=612 Accessed: March 30, 2017.
2. *Ameiurus nebulosus* (Brown Bullhead). U.S. Geological Survey. [2017]. Nonindigenous Aquatic Species Database. Gainesville, Florida. Accessed [3/30/2017]. Accessed: March 30, 2017.
3. *Ameiurus nebulosus* (Lesueur, 1819) Brown bullhead. www.fishbase.org/summary/3022 Accessed: March 30, 2017.