

Fish species observed on the campus properties (Stony Brook, Upper lake and Lower Lake)

American Eel *Anguilla rostrata*



Native.

Size:

30 to 180+ cm, generally males are smaller

Range:

Found in inland fresh waters along the Gulf and Atlantic coasts, and reaching most states east of the Rocky Mountains. While these fish spend most of their life in fresh water, they return to the ocean to spawn and die.

Habitat:

Permanent streams with continuous flow, lakes and ponds. They prefer deep pools, logs, boulders and undercut banks to hide during the day. In the winter they burrow into lake, pond or stream sediments. They live for 5 to 20 years in fresh water before returning to the ocean.

Feeding:

Nocturnal and omnivorous. They feed on other fish and invertebrates, dead and alive.

Interesting facts:

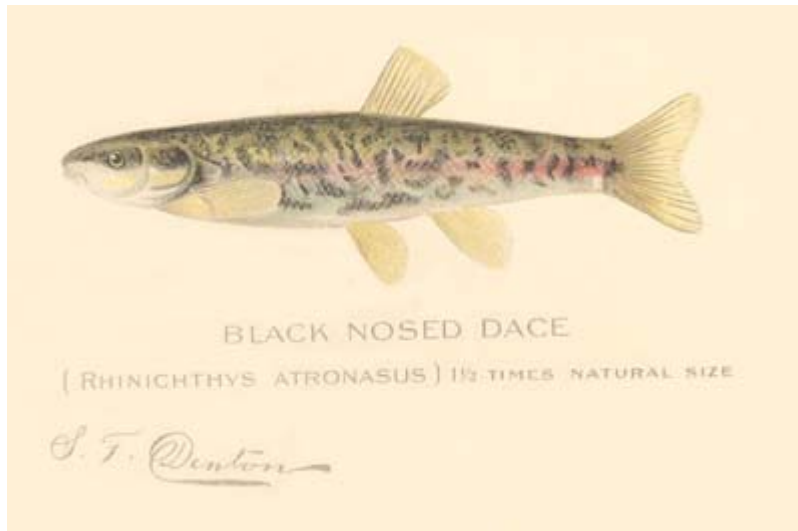
American Eels are catadromous fish, meaning that they live in fresh water but travel to the ocean to spawn. They are the only member of the fresh water eel family, *Anguilla*, that is found in the United States.

As they begin their trip back to the ocean to spawn they turn from their brown/green color to silvery and black color scheme. The travels and habits of eels are largely unknown after they return the ocean except that their spawning grounds are located in the South Atlantic Sargasso Sea. While the adult mature eels (known as Silver Eels) are never seen again, tiny eel larvae called leptocephalus drift back to their home rivers with the Gulf Stream ocean currents. Before the larvae eels begin their trip back to fresh water they transform into elvers. Elvers, know as glass eels because they are transparent, are

tiny versions of adult eels reaching about 5 cm in length. As the eels travel through saltwater estuaries on their way up to fresh water, some stay in the estuaries-these generally develop into males, and some travel upstream-these generally develop into females.

Before it was known that eels returned to the ocean to spawn, people noticing that they did not lay eggs or give birth, speculated that they spontaneously generated from horsehairs that had fallen into the water or bits of rotting vegetation.

Blacknose Dace *Rhinichthys alratulus*



Native

Size: Rarely grows larger than 7 cm

Range: Found from the Great Plains to the eastern coast of North America. From Nova Scotia to South Carolina and Georgia.

Habitat: Prefer stream riffles. Small, clear relatively fast streams. Frequently found in stretches w/out other species or in headwaters with trout. Seldom found in lakes or ponds.

Feeding: Algae and small invertebrates.

Interesting facts: Prone to black spot disease. The disease is characterized by numerous black spots on the body and fins. The spots are the encysted stage of a larval parasitic worm which is found beneath the fish's skin.

Creek Chub *Semotilus atromaculatus*



Native

Size: 15 to 30 cm

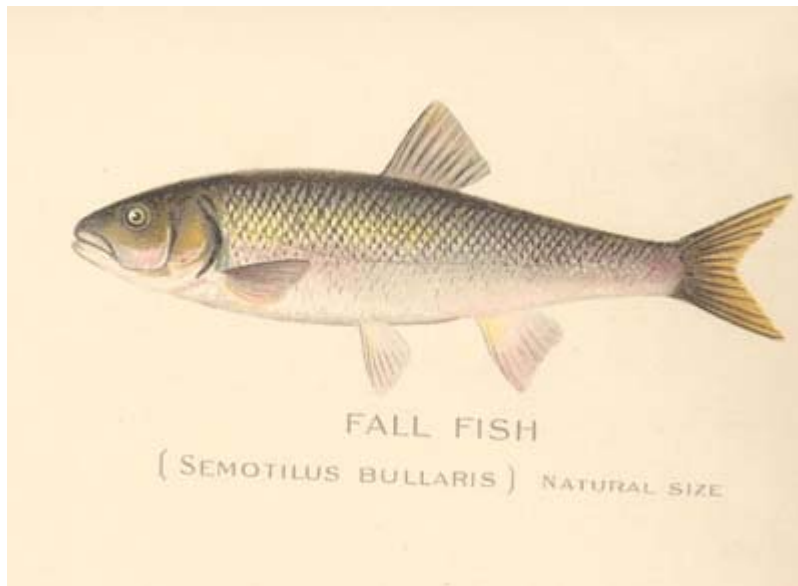
Range: Found throughout northeastern America from southern Canada and New England to the Great Plains and south to eastern Texas and Florida.

Habitat: Usually found in small to moderately sized streams and occasionally in ponds or lakes.

Feeding: Opportunistic. Young eat plankton. Mature fish eat insects, zooplankton, crayfish and small fishes.

Interesting facts: Very prone to Black Spot disease. Nests are harmed by siltation.

Fallfish *Semotilus corporalis*



Native

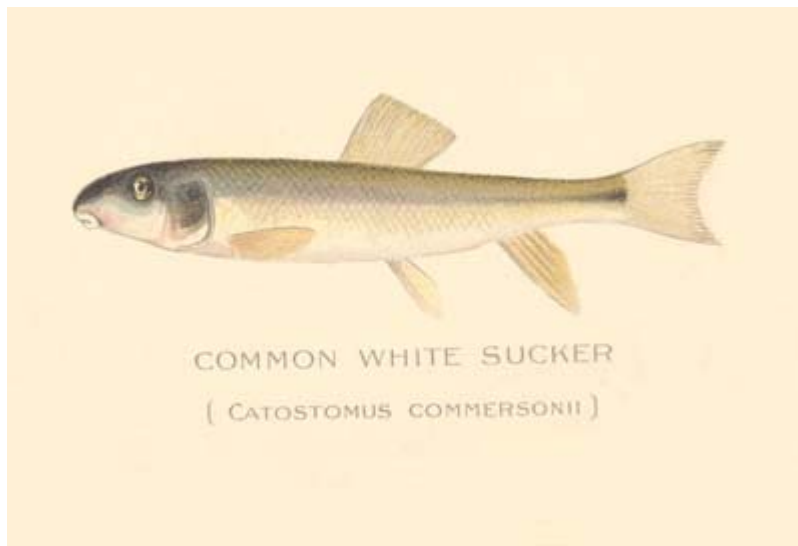
Size: May grow to 45cm

Range: Eastern coast of North America, From Canada and south and east of the Appalachian Mountains to Virginia.

Habitat: Rocky bottomed pools and runs of small streams and rivers. Lake margins.

Interesting facts: The Fallfish is the largest native minnow in the Northeast and is part of a group of eastern minnows once called Awadosi, or stone-carriers, by the Indians of the Hudson Bay region. These fishes, which are known as chubs today, are unique among North American minnows in that they build spawning nests in the gravel substrate of streams. The nest of the Fallfish can be six feet in diameter and three feet high, and contain several thousand stones. Nests are usually built by one male, who uses his mouth to carry stones to the nest, or excavate them from a pit.

White Sucker *Catostomus commersoni*



Size: Adults 25 to 50 cm or larger

Range: Found throughout North America from northern Canada, British Columbia and south to New Mexico and Northern Georgia.

Habitat: These fish can live anywhere from small creeks to large lakes. They can survive in pH levels down to between 4-5. Their large distribution may be due to ability to spawn in large diversity of locations.

Feeding: Young fish feed at surface on plankton and insect larvae. Adults feed more on midges, larger insects and small amounts of plant material.

Interesting facts: Spawning occurs with one female and 2 or more males present, sometimes in large groups. During spawning, which takes about two seconds, stripes on the fishes sides and their eyes turn red as eggs and milt are released.

Pumpkin Seed Sunfish *Lepomis gibbosus*



Native

Size: 20-25cm

Range: Found from eastern Canada, south to Northeastern Georgia. West throughout southern Ontario south to Northeastern Missouri and Illinois. Introduced widely outside range.

Habitat: Streams and small ponds, also slower moving parts large rivers.

Feeding: Opportunistic feeder. Eats insects amphipods, mollusks, larval amphibians, and small fish.

Interesting facts: One of most abundant sunfish in the Northeast

Tessellated Darter *Etheostoma olmstedi*



Native.

Size: Rarely grow larger than 10cm in length.

Range: Fresh water from North Carolina to northeastern Canada excluding Maine.

Habitat: Quiet stream riffles. Sandy or muddy pools. May also inhabit small lakes and ponds. Prefers rocky bottom pools for breeding.

Feeding: Feed on small bottom dwelling invertebrates and crustaceans.

Interesting facts: The above picture is of *Boleosoma nigrum*. *Etheostoma olmstedi* and *Boleosoma nigrum* were at one time considered the same species. They were split by Charles F. Cole in 1957 (*olmstedi* was considered a subspecies of *nigrum*). Currently some have reverted back to identifying them as the same species.

Brown Bullhead Catfish *Ameiurus nebulosis*

Native

Size: 20-36cm

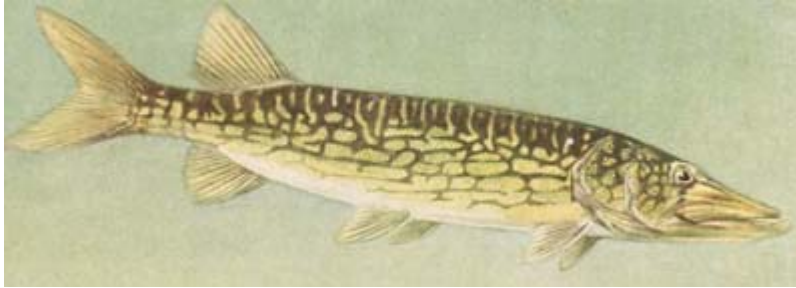
Range: Eastern and central North America, although it has been introduced to some places in Europe.

Habitat: Muddy streams

Feeding: Opportunistic -may feed on crayfish, insect larvae, worms and other small fish.

Interesting facts: The Bullhead Catfish is very tolerant to domestic industrial wastes and so is often the only fish found in highly polluted water. The Brown Bullhead is one of four Catfish that may be found in Stony Brook. The others include the Yellow Bullhead, *I. natalis*; Black Bullhead, *I. melas* and the Channel Catfish, *I. Punctatus*.

Chain Pickerel *Esox niger*



Size: Largest can range up to 75cm.

Range: Found from Nova Scotia to central Florida, and west to the Mississippi valley, Missouri and southwestern Kentucky

Habitat: Found in weedy areas of ponds and lakes

Feeding: Predaceous and opportunistic. Young feed on crustaceans and insects. Older prefer crayfish, fish and injured or slow moving fish. Feed at night and day.

Interesting facts: The Chain Pickerel can tolerate pH down to 3.8 and temperatures 35° C or higher and salinities up to 22 parts per thousand.

White Crappie *Pomoxis annularis*



Size: Record is 2.25 Kilos (5 pounds)

Range: Found in Central United States and southern Canada south to Texas, Alabama and southern Mexico. Stocked extensively in many southern locations on the west coast.

Habitat: Lakes and ponds, slower parts of streams. Tolerates high turbidity, silty bottoms and lots of vegetation.

Feeding: Young feed on zooplankton. Larger fish go for aquatic insects, invertebrates and small fish.

Interesting facts: Member of the Sunfish family.

Yellow Perch *Perca flavescens*



Native

Size: 25 to 30 cm

Range: From eastern and northwestern Canada south to South Carolina. Above northeast Nebraska and northern Missouri.

Habitat: Travel in schools. Found in lakes of moderate fertility and usually near aquatic vegetation. Also in streams.

Feeding: Opportunistic. Young eat zooplankton and insect larvae. Adults eat insects, crayfish, and small fish. Feed during day and rest at night .

Interesting facts: Popular ice fishing species.

Large Mouth Bass *Micropterus salmoides*



Introduced

Size: Largest may be 4 or more Kilos (~9 pounds)

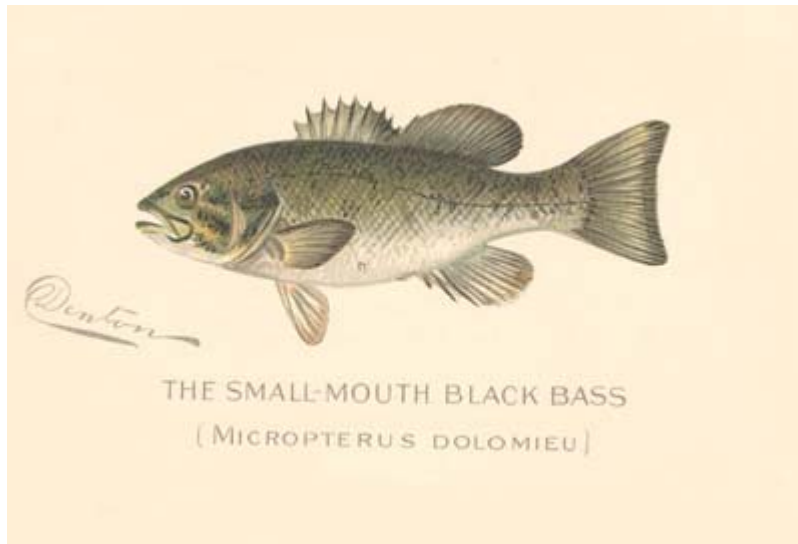
Range: North central Mexico to Florida up to South Carolina. Now extended much northward to South Dakota, parts of Canada and the great lakes. Introduced extensively in other parts of world.

Habitat: Warm weedy parts of lakes, ponds and streams

Feeding: young eat plankton and small insects. Adults eat other fish and large items (anything that moves).

Interesting facts: Introduced widely as game fish and may pose serious threat to native fish. Member of the Sunfish family.

Small-Mouth Bass *Micropterus dolomieu*



Introduced.

Size: Record fish have been around 4 Kilos (9 pounds)

Range: Originally found in the North Central United States and Southern Canada. It spread through the Erie Canal and has been introduced as game fish. It was established in much of New York and New England by 1900.

Habitat: Tolerates a range of habitats but prefers clear and cool water. Found in streams with slow to moderate current and in still water along rocky shorelines.

Feeding: Opportunistic. Young fish feed on plankton and small invertebrates. Adults prefer tadpoles, frogs, insects, crayfish and other fish. In many places the Yellow Perch is the prey of choice.

Interesting facts: Choice game fish but poses serious threat to native species such as Yellow Perch. Member of Sunfish family.

Fish identified in Stony Brook, but no picture available:

Yellow bullhead *Ictalurus natalis*
Black Bullhead *I. Melas*
Channel Catfish *I. Punctatus*
White perch *Morone americana*
Bridled shiner *Notropis bifrenatus*
Sunfish species *Ictalurus* spp. (several species)

Credits:

The fish surveys were conducted by the CE and USGS - **Ben Letcher**.
The fish descriptions and image scanning were done by **Laurel Moulton'01**.

Sources:

- Stony Brook Fish Survey. 2000. Center for the Environment. Mount Holyoke College. South Hadley MA.
- Eddy, Samuel. 1957. How to Know the Freshwater Fishes. WM. C. Brown Company Publishers. Dubuque, Iowa.
- Moyle, Peter B. 1993. Fish: An Enthusiasts Guide. University of California Press. Berkeley, CA.
- Page, Lawrence M. and Brooks M. Burr. 1991. A Field Guide to Freshwater Fishes: North America North of Mexico. Houghton Mifflin Company. Boston, MA.
- Witworth, Walter R., Peter L. Berrien, and Walter T. Keller. 1968. "Freshwater fishes of Connecticut", State geological and natural history survey of Connecticut, Bulletin 101.
- Ganzaga, Shireen. 1999. American Eel *Anguilla rostrata*.
- Smith, Lavett C. The Inland Fishes of New York State, published by the New York State Department of Environmental Conservation, 1985.
- [Fishes of New York State](http://www.dnr.cornell.edu/ext/fish/nyfish/fish.html) <http://www.dnr.cornell.edu/ext/fish/nyfish/fish.html>
- [Black Nose Dace Patterns](http://www.globalflyfisher.com/streamers/fish/blacknosedace/blacknosedace.htm) - New England Streamer's by Doug Saball with added notes by Will Taylor
<http://www.globalflyfisher.com/streamers/fish/blacknosedace/blacknosedace.htm>
- Johnston, Carol E., Center for Biodiversity. Nest-Building Minnows. Illinois Natural History Survey. Champaign, Illinois
- [North American Native Fishes Association](http://www.nanfa.org/) <http://www.nanfa.org/>

Pictures adapted from:

Annual Reports of the New York State Fish and Game Commission 1895 to 1901