



## Endangered & Threatened Fishes of New York

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## Endangered & Threatened Fishes of New York

**Note: This article first appeared in the September 1993 issue of *The Conservationist* magazine. Updated June 1999 by Doug Carlson. Original authors- Dean Bouton & Eileen C. Stegemann. Thirteenth in a 14-part series describing the *Freshwater Fishes of New York*.**

The American bald eagle. The peregrine falcon. The eastern mountain lion. These are the images most people have when thinking of endangered and threatened species.

What few people realize is that there are numerous species of fish that are also threatened and endangered. And while they may not be what many consider majestic, graceful, and observable creatures, these fish species are interesting creatures in their own right whose existence is every bit as important.

All living creatures play a role in, and are a part of, some food web. As such, what happens to one population of animals will usually affect numerous others. Fishes are no different. Most species are food fish for a variety of other fish species, as well as for other animals such as frogs, raccoons, bears, and birds, including the bald eagle. So, ensuring the health of these fish species not only allows future generations the chance to observe them, but also helps ensure other animal populations remain

healthy, as well. In addition, like the miner's canary, fish, especially the more sensitive species, are good indicators of environmental quality.

New York State waters are home to 19 different fish species that are currently listed as endangered or threatened. While a few of these species (such as lake sturgeon, round whitefish, and mooneye) may be familiar to some people, the majority of them are small, inconspicuous species rarely seen by anyone.

Because of the large number of fish species, this article only details 13 of those currently considered threatened or endangered. For more information on any of the species listed here, or the species considered of special concern, check DEC's [endangered species web page](#); or check with the Bureau of Fisheries in Albany, or any of DEC's nine regional fisheries offices.

New York State's current list of classified fish species not described below include: silver chub (endangered); gravel chub, banded sunfish, swamp dater and spotted darter (all threatened); and black redhorse, mountain brook lamprey, streamline chub, redbin shiner and ironcolor shiner (all special concern). Special "Species Accounts" are available for each of these fish species from DEC's Bureau of Fisheries, Endangered Fish Project, State Office Building, Watertown, NY 13601.

### **Shortnose Sturgeon (endangered)**

A large fish, the shortnose sturgeon reaches up to 3.5 feet in length and 14 pounds in weight. It is quite prehistoric, almost sharklike in appearance with five rows of pale bony plates (called scutes) covering its dark body. It has a short, conical snout with four barbels or whiskers in front of its large underslung mouth.



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The shortnose sturgeon is anadromous, migrating from salt water to spawn in freshwater. In New York, this sturgeon only occurs in the lower portion of the Hudson River from the southern tip of Manhattan to the Federal Dam at Troy.

Losses in numbers of Hudson River shortnose sturgeon occurred as the result of several activities, including: overexploitation of sturgeon stocks for caviar and smoked flesh; pollution resulting in oxygen depletion; and damming of the Hudson which cuts off upriver spawning grounds. The shortnose sturgeon is officially listed by the National Marine Fisheries Service as endangered and is thus fully protected by the Endangered Species Act. Recovery in their numbers appears certain.

### **Pugnose Shiner (endangered)**



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The pugnose shiner is one of the rarest minnows in North America. Populations of this fish have been reduced or extirpated in the United States, and in Canada its range is diminishing. The primary cause for this loss in pugnose shiner populations is thought to be increased turbidity in its waters.

A small minnow, it rarely exceeds two inches in length. It has a light, straw-colored back, silvery sides, and a white belly. Its most distinctive feature is its small mouth that is so sharply upturned it is nearly vertical.

The pugnose shiner has never been abundant in New York and lives only in bays of Lake Ontario and the St. Lawrence River. Because of its rarity, few people have seen this fish. Thankfully it appears to be maintaining its numbers in two areas.

### **Round Whitefish (endangered)**

The round whitefish is a medium-sized fish that averages eight to 12 inches in length. Its body shape is long and tubular, with a nearly round

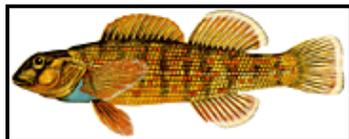
midsection (hence its name). Its head is short and its mouth is small and inferior, meaning the snout extends beyond the lower jaw. An adult round whitefish is olive-brown on top and silver below. A young fish has rows of black spots, called parr marks, which make it similar in appearance to a young trout or salmon.



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Round whitefish populations have seriously declined in New York State. Once fairly common throughout the Adirondacks, the round whitefish is presently known to inhabit only six Adirondack water bodies. Reasons for its decline include predation by invading yellow perch on whitefish eggs, tapeworm infestation, overfishing, loss of spawning sites, siltation, and lake acidification.

### **Bluebreast Darter (endangered)**



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The bluebreast darter is a small, colorful fish that usually grows to about three inches in length. It can be distinguished from other darters by its blunt, rounded snout, and its gill covers which are not connected across the breast.

The bluebreast darter is olive-green in color and there is a broad light band adjacent to the dark edge of the second dorsal (back), anal (bottom rear), and caudal (tail) fins. Breeding males are extremely colorful, with orange-tinted dorsal fins, numerous small crimson spots on the sides and a bright blue breast - hence its name.

The bluebreast darter prefers fast-flowing sections of large streams where the substrate consists of sandy gravel and large stones. The darter uses the stones for protection, and is usually found behind, beside, or under them. The bluebreast darter is rare in New York, found only in the upper reaches of the Allegheny River and a tributary.

### **Gilt Darter (endangered)**

Like many darter species, the gilt darter is a colorful fish. Its body is olive to blue-green in color and there are five to eight dark blotches along the back, as well as square blotches on its sides. Breeding males develop five to eight blue-green vertical bands, bright red blotches on the sides, an orange breast, orange dorsal fins, and dark blue pelvic and anal fins.

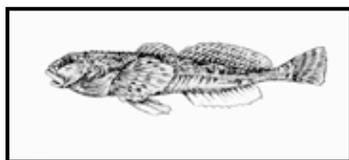


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This darter can be distinguished from its cousins by the row of specialized scales located along the midline of the belly, and by the gill membrane which is joined forward of the breast.

Few facts are known about the life history of this small (approximately three inches long) darter. It is known that it prefers clear gravel or rubble riffles in large streams. It is quite intolerant of slow water and silt and is thought to have declined in numbers because of increased siltation. In New York State, this darter has only been caught in the Allegheny River in 1937.

### **Spoonhead Sculpin (endangered)**



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Unusual in appearance, the spoonhead sculpin has a flat, triangle-shaped head, large fanlike pectoral fins, a large mouth, small eyes, and a rather large, semicircular preopercular (or cheekbone) spine. Its slender, tubular-shaped body is covered with prickles instead of scales.

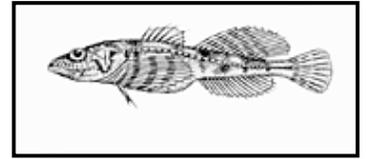
Spoonhead sculpins average 1.5 to 2.5 inches in length, but can reach up to five inches. They are olive-brown on top, light yellow on the sides, and white on the belly. Their heads, bodies, and fins are speckled.

Spoonheads can be distinguished from other New York State sculpins by the gill covers which are attached to the breast.

Spoonheads are deep-water fish, found at an average water depth of 200 feet. They were historically taken in lakes Ontario and Erie, but are now believed to be extirpated.

### **Deepwater Sculpin (endangered)**

The largest of New York's freshwater sculpins, the deepwater sculpin can grow to be nine inches in length, although the average is two to five inches. This fish has a long, tapered body, a blunt snout, and a flat head. The mouth is large and the eyes set close together on top of the head. There are four preopercular spines - with the upper two spines close enough to appear as one large spine. It has two well-separated dorsal fins, the second being quite large.



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Like the spoonhead, the deepwater sculpin has no scales, but has prickles on top. It is generally grey-brown in color with a lighter underside. The back and sides are speckled and there are thin, dark saddle-like marks on the back.

The deepwater sculpin is found in deep, cool waters of lakes at depths of 240 to 300 feet. It was once abundant in Lake Ontario, and then considered extirpated from this lake until some catches were made in 1996-1999. It was rarely found in Lake Erie. While the cause of the decline is unknown, scientist think that it may be due to the presence of alewives and rainbow smelt which compete with sculpin for food, as well as eat sculpin eggs and larvae. A new threat may be on the horizon with the accidental introduction of another European fish- the round goby.

### **Lake Sturgeon (threatened)**



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The lake sturgeon is New York's largest freshwater fish. Mature adults average between three to five feet in length and ten to 80 pounds in weight, but can occasionally grow to be as large as seven plus feet, and 300 plus pounds.

Primitive in appearance, the lake sturgeon has a torpedo-shaped body that is covered with five rows of bony plates. The top and side bony plates are the same color as the dull grey body. There are four barbels on the underside of the sharp, cone-shaped mouth.

Lake sturgeon are some of the longest-lived and slowest to mature freshwater fish species. Females do not reach maturity until 14 to 23 years old and males eight to 19 years old. Adult lake sturgeon display interesting behavior during spawning, sometimes leaping out of the water to fall with a loud splash.

Lake sturgeon are primarily found in freshwater lakes and large rivers, but can also occur in brackish waters. In New York, lake sturgeon have been collected in Lake Ontario, Lake Erie, the St. Lawrence River, Niagara River, Oneida and Cayuga Lakes, Lake Champlain, the Oswegatchie River, Grasse River and Black Lake. However, their current numbers in these waters are a mere shadow of what they once were. Since 1995, sturgeon populations in five Northern New York waters have been supplemented through the stocking of some hatchery-raised fish.

The American Fisheries Society lists lake sturgeon as threatened in all the states where they occur. Reasons for their population decline are attributed to: overexploitation due to high demand for caviar and smoked flesh; construction of dams that cut off spawning and nursery areas; and some pollution and degradation of habitat.

### **Mooneye (threatened)**

A medium-sized fish, the mooneye generally reaches 11 to 15 inches in length and one to two pounds in weight. It has a flattened, slab-sided body that is silvery in color.

Mooneye get their name from their large, prominent, reflective eyes which enable them to see at low light levels. Another distinguishing feature of this species is the teeth located on both the tongue and the roof of the mouth.



[click for larger image](#)

Mooneyes prefer clear water habitat of large streams, rivers, and lakes. In New York they have been found in the St. Lawrence River, Lake Erie, Lake Ontario, Lake Champlain, Black Lake, the Oswegatchie River and the lower Cattaraugus Creek. While the exact causes of their population decline are not known, siltation and competition with introduced species are possible factors.

### **Lake Chubsucker (threatened)**



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Well suited as a bottom-roving predator, the lake chubsucker has a flattened head, a humped back, and enlarged pectorals that aid in the quick pursuit of prey. Its large scales and suction mouth identify it as a member of the sucker family, but unlike other suckers, there is no lateral line along this fish's side.

Medium in size, lake chubsuckers average eight to ten inches in length. Adults are dark olive-green on top, silvery-gold on the sides and green-yellow on the belly. Young chubsuckers have a prominent dark stripe along each side which becomes a series of vertical bars in the adult fish.

Lake chubsuckers are found in quiet, clear, well-vegetated waters and are intolerant of turbid and silty conditions. In New York, only a few specimens have been collected along the west central shore of Lake Ontario and east shore of Lake Erie in 1928 & 1939.

### **Mud Sunfish (threatened)**

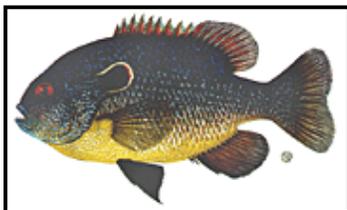
Similar in appearance to the rock bass, the mud sunfish can easily be distinguished by its round, not forked, tail and its brown, not red, eyes. There are five distinct lines located along the sides of this relatively small (approximately five to six inches long) sunfish. Its body color is reddish brown on top and pale brown on the belly.



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Little biological information is known about the mud sunfish. It is a secretive fish with nocturnal behaviors. Mud sunfish occupy areas in sloughs, lakes, pools, and backwaters of streams where the water is acid and vegetation, mud and detritus occur. It is extremely rare in New York State, found only in the Hackensack River in 1935.

### **Longear Sunfish (threatened)**



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The longear sunfish is a small, thin, deep-bodied fish that averages 4 to 4.5 inches in length. It is a colorful fish with an olive to rusty-brown back, bright orange belly, and blue-green bars on the sides of the head.

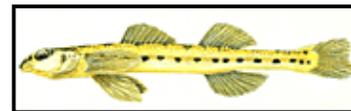
The longear sunfish is often mistaken for a pumpkinseed, but can be distinguished by looking at the pectoral fins and the gill covers. The longear has short, round pectoral fins that do not extend above the lateral line. In addition, it has a long, upward-slanting gill cover flap that has a white, flexible edge.

The longear favors the margins of weed beds and clear water areas of creeks and small to medium rivers. It avoids strong currents and silt. In New York State, the longear sunfish was only found in the Niagara and western Lake Ontario drainage basins. Longear sunfish now live in only Tonawanda Creek and appear to be disappearing in the State. Biologist speculate that several factors are involved,

including siltation, water quality deterioration, and hybridization with the pumpkinseed or green sunfish.

### Eastern Sand Darter (threatened)

The eastern sand darter is a small fish, averaging 2.5 inches in length. It has a long, slender body with no scales on the belly. Its dark reddish spots and transparent body provide excellent camouflage.



[click for larger image](#)

The eastern sand darter has the interesting habit of burying itself in the sand, leaving only its eyes exposed. This enables the fish to hide from predators, to stay put in fast water, and to effectively ambush prey.

The American Fisheries Society has listed the eastern sand darter as threatened in all the states where it occurs. In New York State, this fish species is limited to rivers in northeastern Washington County, northeastern St. Lawrence County, northwestern Franklin County, and Lake Erie. The major cause in declines of this fish species is loss of clean, sandy substrate due to siltation.

### Scientific Names

Many species of fish look alike, making it difficult to tell them apart. In addition, many types of fish have different common names in different parts of the country. To distinguish one organism from another, biologists give each a scientific name that is unique to that organism. The names are derived from the Latin language and consist of a genus and a species. The genus name is first and is capitalized. The species is second and is in lower case. Both the genus and species are either underlined or italicized when written. While several organisms in the same "family" share a common genus name (like family members sharing a last name), they have different species names. Occasionally, two members of a family are so similar that one is considered a subspecies of the other. In these cases, the organisms are given two species names. Here are the common and scientific names of some of New York State's endangered and threatened fish species:

#### Scientific Names of Fish Species

Common Name	Scientific Name
shortnose sturgeon	<i>Acipenser brevirostrum</i>
pugnose shiner	<i>Notropis anogenus</i>
round whitefish	<i>Prosopium cylindraceum</i>
bluebreast darter	<i>Etheostoma camurum</i>
gilt darter	<i>Percina evides</i>
spoonhead sculpin	<i>Cottus ricei</i>
deepwater sculpin	<i>Myoxocephalus thompsoni</i>
lake sturgeon	<i>Acipenser fulvescens</i>
mooneye	<i>Hiodon tergisus</i>
lake chubsucker	<i>Erimyzon sucetta</i>
mud sunfish	<i>Acantharchus pomotis</i>
longear sunfish	<i>Lepomis megalotis</i>
eastern sand darter	<i>Ammocrypta pellucida</i>

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