

# The 100-Year Chain: The Pike Family

The year 2004 marks the 100th anniversary of pickerel propagation in the U.S., which occurred in Pennsylvania at the Pleasant Mount State Fish Hatchery (Wayne County). The Commission is commemorating this milestone by including the chain pickerel as the 2004 fishing license artwork and selecting the chain pickerel as the 2004 PLAY patch artwork (see page 33). This pike family poster provides a wider perspective on pickerel and its family of fishes found in Pennsylvania.

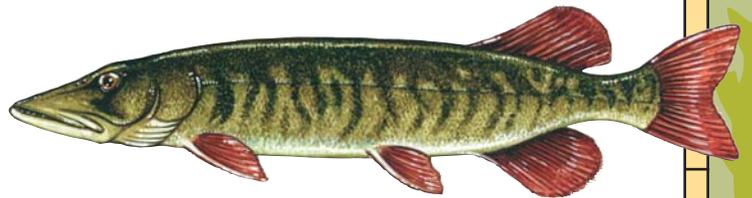
Chain pickerel are members of the pike family. The scientific name of the pike family is Esocidae. Pike are long, slender, “duck-billed” predator fish, popular with anglers for the great size some species attain and for their sporting fight. Six species of the pike family live in the Northern Hemisphere. Five, the grass pickerel and redbfin pickerel (the two are closely related subspecies), the chain pickerel, the northern pike and the muskellunge are native to North America and to Pennsylvania. The northern pike is one of the few fish whose natural range includes both North America and Eurasia. The sixth pike species is the Amur pike, native to the Amur Valley of Siberia. In the 1960s, Amur pike eggs were imported from Siberia to Pennsylvania, and fish raised subsequently were stocked in Glendale Lake, near Altoona. Although that breeding and stocking program has been discontinued, for a time Pennsylvania had all five of the world’s pike living in the wild in its waters. The Amur pike is a close kin of the northern pike, but it has a silvery body and small, black spots.

The native pike family residents of Pennsylvania range from the small redbfin pickerel of eastern Pennsylvania and its close cousin the grass pickerel of northwestern Pennsylvania, which seldom reach one foot in length, to the mighty muskellunge, whose state angling record is over 54 pounds. Pike live in coolwater streams and large rivers, as well as lakes, from ponds to big impoundments, depending on the species. All pike are associated with submerged vegetation, although muskellunge also frequent rocky lake shoals. The family name “Esocidae” is from “Esox,” an old European name for the pike.

The pikes are well-camouflaged to blend with their underwater surroundings. Markings and coloration vary between species, their concealment patterns ranging from oblique striping and broken horizontal bands to chain-link markings and beanlike spotting in

light and dark tones. The pike family’s general coloration is green, from a dark yellow-green to olive-brown, with yellowish markings or shadings. The fins in some species are dull-red or orangish. The eye is large and yellow. The pike’s scales are cycloid, smooth to the touch, small and numerous, and embedded in a slimy mucous that makes the fish slick to the touch.

The pikes are slender, cylindrical fish. The pike family’s most distinctive characteristic is the long, flattened snout that looks something like a duck’s bill. The mouth is fitted with many strong, sharp teeth, and the forehead is like a bony plate. Pike have one dorsal fin that is placed far along the back, toward the tail, as is the opposing anal fin. The tail is forked, and may or may not be marked, according to the species. There is no adipose fin. Pike are built for their role as swift, aggressive predators.



**Redfin Pickerel**  
(*Esox americanus americanus*)

**Species overview:** The redbfin pickerel is the eastern half of the *Esox americanus* subspecies twins. The other is northwest Pennsylvania’s grass pickerel (*Esox americanus vermiculatus*). The redbfin’s native range is along the Atlantic Coast from Massachusetts to Florida, where it mixes and interbreeds with the grass pickerel. The redbfin is a common small pickerel in the Delaware River watershed in Pennsylvania. It is found rarely in the Susquehanna River watershed.

**Identification:** The redbfin, along with the grass pickerel, is the smallest member of the pike family, growing to 12 inches at most. Its range restriction in this state, east of the Allegheny Mountains, is the best way to distinguish it from the grass pickerel. With few exceptions, the two fish are similar in appearance. The redbfin pickerel is greenish gray to dark olive-bronze on the back and shading down its sides. Over the sides are wavy or wormy-looking lighter markings that can appear as a series of vertical, irregular bars.

The belly is white or yellow-tinted. The redfin's cheek and opercle are fully scaled, and the black "tear drop" beneath its eye extends backward. The snout is short and broad and the fins are unspotted and reddish, providing its common name.

**Habitat:** Redfin pickerel inhabit the weedy shallows of slow-moving streams, as well as lakes and ponds. Although they are usually found over a soft mud bottom, redfin pickerel prefer the water itself to be clear. They can live in naturally acidic water, like that which flows from the tannic-stained bogs in Pennsylvania's northeast region. They can tolerate swampy waters with low oxygen content and brackish waters, where fresh water and ocean salt water mix.



### Grass Pickerel

(*Esox americanus vermiculatus*)

**Species overview:** The grass pickerel subspecies could be mistaken for the redfin, if their ranges were not so

distinct. The grass pickerel is distributed throughout the Mississippi River watershed. The redfin is an East Coast fish. Where their ranges cross along the Gulf Coast, from Louisiana to Florida, the two small pickerel interbreed. In Pennsylvania, grass pickerel are found in northwestern Pennsylvania, in both the Lake Erie and Allegheny River watersheds, especially where the land has been glaciated. The grass pickerel's subspecies name "vermiculatus" means "wormlike," describing the wavy markings on the fish's sides.

**Identification:** Grass pickerel rarely grow over 12 inches long, so an adult grass pickerel could be mistaken for an immature northern pike or muskellunge, except for the scaling that covers its cheeks and gill covers. Grass pickerel are usually not as distinctly marked as redfins, and they do not have a red tinge to their fins. The sides and back are greenish to grayish, and the flanks have lighter, dusky streaks that curve and tend to be vertical. The streaks may look like bars or just shadowy, wandering lines. Grass pickerel have a black bar beneath the eyes, which trails slightly backward. The fins are amber or dusky with no markings.

**Habitat:** Grass pickerel live in the marshy areas of lakes and ponds, as well as in slow-flowing sections or backwaters of clear streams. They are usually found in and around dense, rooted aquatic vegetation over a soft, silt bottom.

*Chain pickerel*





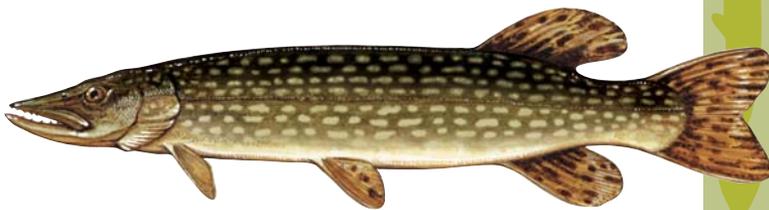
**Chain Pickerel**  
(*Esox niger*)

**Species overview:** Chain pickerel are the most abundant and widely distributed member of Pennsylvania's pike family. They are also the most often caught, biting the angler's bait or lure readily. The chain pickerel's original range was Atlantic and Gulf Coast tributaries, but the fish has been introduced elsewhere. In Pennsylvania, chain pickerel are restricted to the Delaware, Susquehanna and Potomac River watersheds. They are most common in the glaciated Pocono northeast.

**Identification:** Chain pickerel can grow to more than 30 inches long, but one of 25 inches and four or five pounds is considered a trophy in Pennsylvania. The state record is an eight-pounder. Two-pound pickerel are common, where the fish have enough to eat. The chain pickerel hides easily in its weedy habitat, with its dark, greenish-yellow back, fading to lighter yellow-green along the sides. Over the sides is a pattern of dark chainlike markings that gives the fish its name. The belly

is white. A dark mark, like a clown's painted tear, appears below each eye. The fins are unmarked and pale. As is typical of pickerel, both the cheek and the opercle, or gill cover, are fully scaled. Chain pickerel have a long snout. The distance from the tip of the nose to the front of the eye is greater than the distance from the back of the eye to the end of the gill cover.

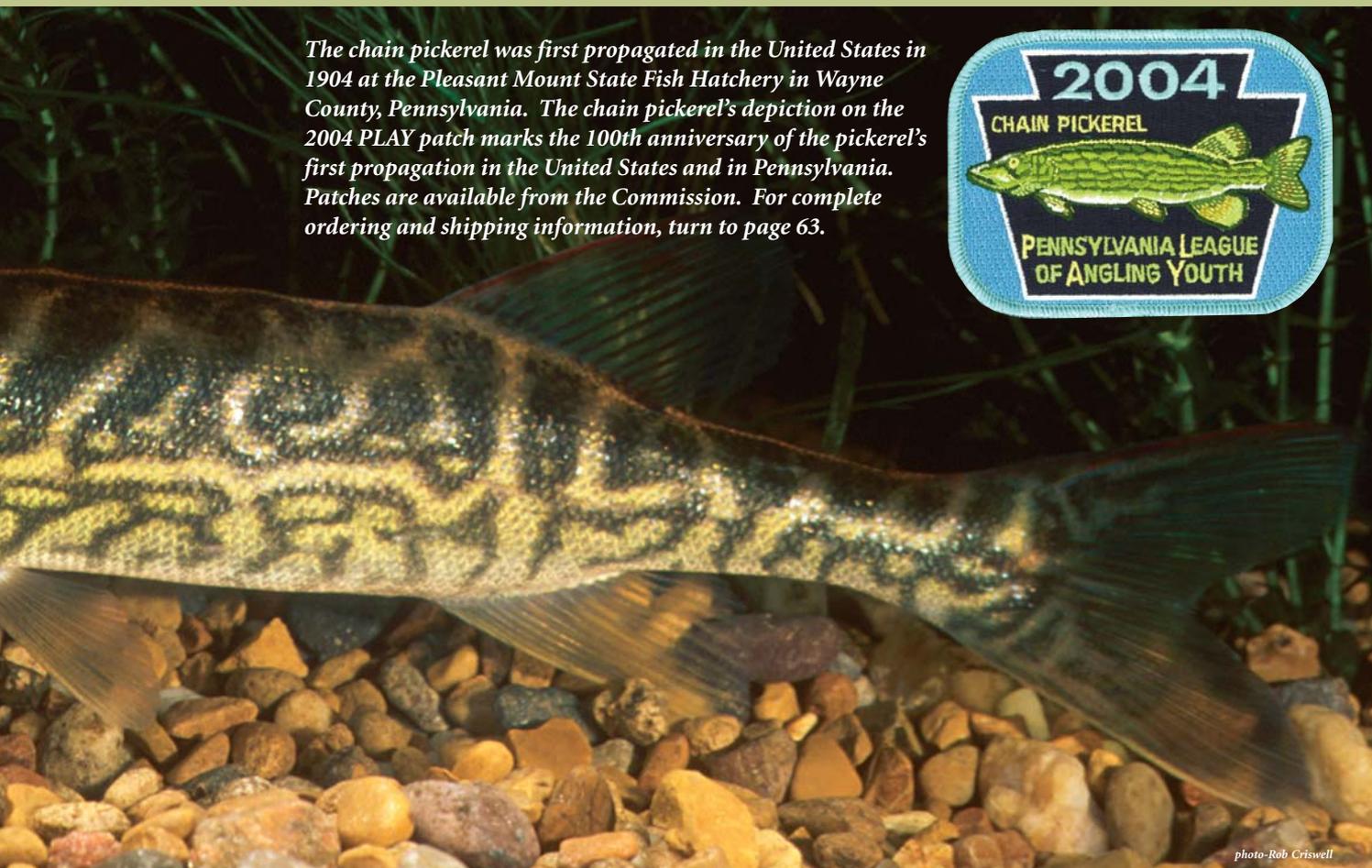
**Habitat:** Chain pickerel live in and around weedbeds and sunken stumps and logs in natural lakes, swampy ponds and manmade impoundments. They can also be found in the sluggish parts of clear streams and in the naturally acidic, tannin-stained waters that drain boggy wetlands, as in northeastern Pennsylvania. Chain pickerel are commonly shallow-water dwellers, but they can live in deep lakes. They don't travel far from their home areas, and they tolerate a wide temperature range.



**Northern Pike**  
(*Esox lucius*)

**Species overview:** The northern pike lives in the Northern Hemisphere from North America to Europe

*The chain pickerel was first propagated in the United States in 1904 at the Pleasant Mount State Fish Hatchery in Wayne County, Pennsylvania. The chain pickerel's depiction on the 2004 PLAY patch marks the 100th anniversary of the pickerel's first propagation in the United States and in Pennsylvania. Patches are available from the Commission. For complete ordering and shipping information, turn to page 63.*



and Asia. The northern pike has a long history in the Old World and is the subject of romantic myth and melodramatic folklore. The Latin name for the pike is “lucius,” referring to “Luce, the waterwolf.”

**Identification:** With sufficient forage, northern pike can easily reach about 20 pounds and 40 inches. The state record is over 33 pounds. The northern’s back and sides are dark yellow-green or gray-green, shading to whitish undersides. The smooth body scales may show silvery highlights. Over the sides are lengthwise rows of whitish or yellowish oblong or bean-shaped spots. The fins have black blotches or spots and usually have yellow, orange or red coloring.

One way to distinguish northern pike from muskellunge is by checking the scales on the cheek and gill cover. On the northern, the cheek is fully scaled, but only the upper half of the opercle, or gill cover, is scaled. Another way to differentiate the fish is to count the pores along the underside of the jaw. In northern pike, there are four or five pores on each side; muskellunge have six to nine pores on a side. The northern’s mouth has rows of sharp, caninelike teeth.

**Habitat:** Northern pike favor shallow, vegetated portions of lakes and ponds, although they are usually not found in as little water depth as the chain pickerel. Northern pike also live in rivers and large streams, especially in pools and backwaters, where there is weed growth.



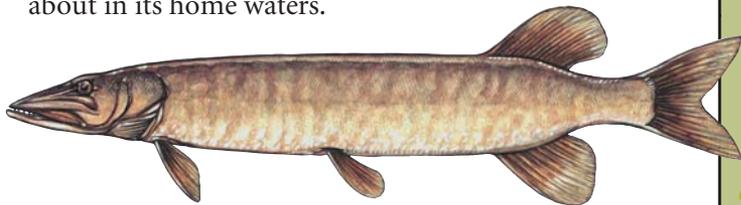
### **Tiger Muskellunge** (*Esox lucius* x *Esox masquinongy*)

**Species overview:** The tiger muskellunge, or tiger musky, is the result of crossbreeding the male northern pike with the female muskellunge in fish culture conditions, although hybrids do occasionally occur in the wild. Tiger muskies have “hybrid vigor.” They are hardier and faster-growing than their purebred parents, and they respond better to hatchery-raising. Tiger muskies are also easier to catch than purebred muskellunge, having more of the eagerness to bite anglers’ baits and lures of their northern pike parent. However, they don’t live as long as regular muskies, so they don’t attain the muskellunge’s great size.

**Identification:** The tiger musky has strong, vertical or slanting barring on its sides, more pronounced than the markings on a purebred muskellunge. Its general color is dark gray-green on the back, a lighter green on the sides, with dark, equally spaced side bars giving the fish its “tiger” name. The dorsal, caudal and anal fins are

spotted or streaked with black, and the belly is off-white. The body of the tiger musky may look more plump than a purebred’s, because it tends to be shorter and more robust.

**Habitat:** The tiger musky is stocked in suitable waters, large reservoirs and rivers throughout Pennsylvania. It tends to be more of a wanderer than its parents, moving about in its home waters.



### **Muskellunge** (*Esox masquinongy*)

**Species overview:** A voracious predator, the muskellunge is one of Pennsylvania’s largest and fastest-growing fish, with the state record standing at over 54 pounds. The muskellunge’s original North American range was the St. Lawrence River, throughout the Great Lakes and Hudson Bay, and the Mississippi River watershed, but they have been widely propagated and stocked elsewhere for sportfishing. In Pennsylvania, muskies were originally restricted to the northwest region, the Lake Erie and Ohio River watersheds.

**Identification:** The musky is streamlined with dorsal and anal fins that are set so far back toward the tail that the fish is almost missile-shaped. Its flat, ducklike snout has many strong, sharp teeth. The musky has no scales on the lower half of its cheek and the lower half of its gill cover, which helps to distinguish it from the northern pike. The base color on the back and sides is light greenish gray or yellow-green to olive-brown, the sides shading lighter. The flanks have more or less vertical rows of darker spotting, or indistinct bars. The striping is more pronounced in younger fish. In older fish it may fade, giving the fish a uniform color. The musky’s belly is white. Its fins are greenish cream to brownish orange, with dark blotches. There is no dark teardrop mark below the eye. Instead, a black horizontal streak runs through the eye.

**Habitat:** Muskies are found in clear natural lakes, reservoirs and rivers. They frequent quiet backwaters and slow pools that have plenty of aquatic weed growth. Muskies are usually found in fairly shallow water, 15 feet or less, but they have been caught 40 or 50 feet deep. ☐

*The text of this article was adapted from the Commission’s book Pennsylvania Fishes, by Linda Steiner. You can find a wealth of information on Pennsylvania fishes and many educational products by visiting the Commission’s web site, [www.fish.state.pa.us](http://www.fish.state.pa.us).*