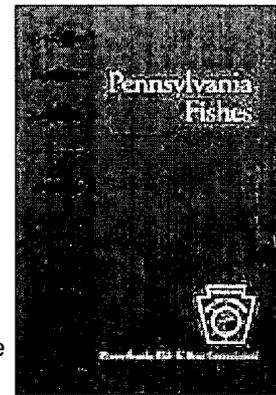


Chapter 12 Suckers

Family *Catostomidae*

Family overview: Suckers sometimes resemble large minnows, but they are considered to be a separate family of fishes. Although suckers can be an important food source for large predatory fish, some grow large enough to provide angling sport in their own right, especially during their spring spawning movements. In Pennsylvania, 18 sucker species have been recorded. However, biologists question whether six of the species still exist here, because they have not been documented in a long time. One species, the longnose sucker, native to both North America and Siberia, is endangered in Pennsylvania. The sucker family is large, with some 68 species found throughout North America's fresh waters north of Mexico. The family name "Catostomidae" means "inferior mouth," referring to the ventral position of the mouth on the fish's head.

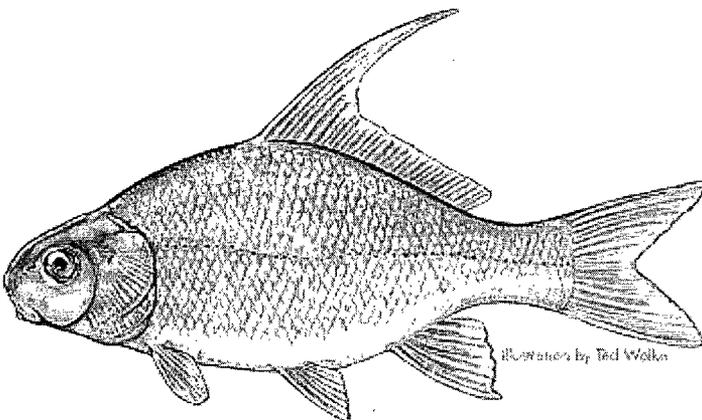


General identification: Suckers are moderate-sized, robust fish, with smooth-edged, or cycloid, scales. The smooth-feeling scales are present on the sucker's body, but not on its head. The scales are often large and reflective, giving many suckers a silvery or gold sheen. There are no sharp spines on any of the sucker's fins. The single dorsal fin is soft-rayed. The anal fin is set farther back on the sucker's belly than on a minnow's belly. Suckers do not have teeth in the mouth. They have a single row of more than 16 pharyngeal teeth, which are toothlike structures located in the throat that aide in digestion. The fleshy-lipped mouth is small, low and directed downward, which suits the way suckers feed. Most obtain food by "vacuuming" or "sucking" it into the mouth.

Life history: Most suckers live in the flowing water of streams and rivers, but some, like the white sucker and creek chubsucker, can also be found in lakes. Suckers spawn in early spring to early summer. Some species make mass migrations up tributary streams or travel to river riffles. Scientists have even noted some homing behavior, in which spawning suckers returned to previously used spawning sites. Most suckers scatter their eggs randomly. However, river redhorse males construct nestlike depressions in gravel, and chubsucker males defend a territory. Young suckers eat zooplankton and algae. They are important forage fish for larger game fishes. The adults eat aquatic invertebrates, insects and mollusks. They also consume some aquatic plant material.

Quillback *Carpiodes cyprinus*

Species overview: One of the quillback's common names is "quillback carpsucker." "Quillback" refers to the lengthy first dorsal rays and several following rays that form a long projection at the leading edge of the back fin, which might remind some of a quill pen or feather quill. "Carpsucker" is also appropriate because this sucker does look much like a carp. Its genus name "Carpiodes" means "carplike," and its species name "cyprinus" is the generic name of the carp. Quillbacks are uncommon even though they range from the Great Lakes and St. Lawrence River south along the Atlantic Coast to Virginia. They are present in the Mississippi River watershed, and in Gulf Coast watersheds. They are in all of Pennsylvania's major watersheds. Quillbacks are the only carpsuckers now living in the state's waters.



Identification: Quillbacks have a body that is deep when viewed from the side, but narrow when seen from the front (laterally compressed). The back color is olive-brown to grayish, with the sides silvery. The large, reflective scales add hints of shimmering-green or blue. The dorsal fin is long, stretching along the back nearly

to the tail fin. The first several rays of the dorsal fin are very long, about five times longer than the short rays on the rear portion of the fin. The high front portion of the dorsal fin looks like a pointed projection and trails over the fish's back. There are no sharp spines on any of the fins. The quillback's pelvic fins are white to orange, and the head is small and conical. Quillbacks have typical sucker mouths. The upper jaw does not extend beyond the front of the eye. The tail is deeply forked. Quillbacks grow to about two feet long and about 12 pounds.

Habitat: Quillbacks live in slow-moving pools and backwaters of streams and rivers. They favor a gravel bottom and little silt in the water. They may also be found in lakes and reservoirs.

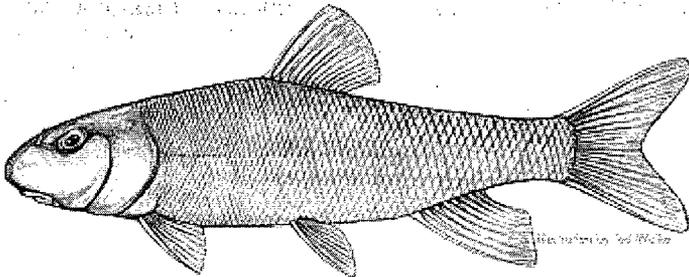
Life history: Quillbacks spawn in spring when the water temperature reaches about 60 degrees. Females release several hundred thousand eggs, which are scattered haphazardly in shallow water, over gravelly riffles, sand or mud. The parent quillbacks may make a run, or migration, to their spawning areas. The eggs are not guarded. They are left to develop and hatch on their own, which takes eight to 12 days. Mortality is high among the eggs, fry and young fish, because they provide forage for predatory fish. Among adult quillbacks, mortality is 60 to 70 percent annually. Quillbacks feed on the bottom, with aquatic insect larvae and other small animal organisms the bulk of their diet. They also eat mollusks, like fingernail clams, and some aquatic vegetation. Quillbacks travel in schools.

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White Sucker *Catostomus commersoni*

Species overview: The white sucker is found across Pennsylvania. It is the most common and widely distributed sucker in the state. Its natural range is from northern Canada to Florida, throughout the uplands of eastern North America, and west to the Plains region. It grows large enough to be sought by anglers, who usually fish for them during the white sucker's spring spawning run. The genus name "Catostomus" means "inferior mouth," referring to the bottom position of the mouth on the head. The species name "commersoni" recognizes an early French naturalist, P. Commerson.



Identification: White suckers have a stout cylindrical or tube-shaped body. They reach a maximum length of about 24 inches and five pounds. The upper part of the head and back is olive-brown, shading to light-yellow. There is a dull, silvery sheen on the scales on the sides, and the belly is whitish. In the white sucker, the lower lip is wider than it is high, and is split into two parts. The rounded snout projects very little, or not at all, beyond the tip of the fleshy upper lip. There is a single dorsal fin with 10 to 13 soft rays. During spawning, the male white sucker's back becomes olive with a bright-lavender sheen, and there is a band of pink or red along each side.

Habitat: White suckers live in many habitats, from cool, clear headwater streams to warm rivers, to lakes, ponds and reservoirs. They are tolerant of pollution, low oxygen and silted water. Not particularly choosy about their home, white suckers can be found in dense weed beds, or in the rocky pools and riffles of streams.

Life history: In spring, when water temperatures reach about 50 degrees, white suckers make their spawning runs, or migrations. They sometimes enter small gravel-bottomed streams by the thousands. The fish may home in on spawning sites they have visited before. The fish spawn from early May to early June, which has given the white sucker one of its nicknames, "June sucker." In lakes, they spawn along the edges or on shallow shoals, over gravel.

Spawning runs take place at night, with the actual spawning done after dark as well, in shallow water, sometimes with the fish's back out of the water. Two or more males spawn with each female, pressing against

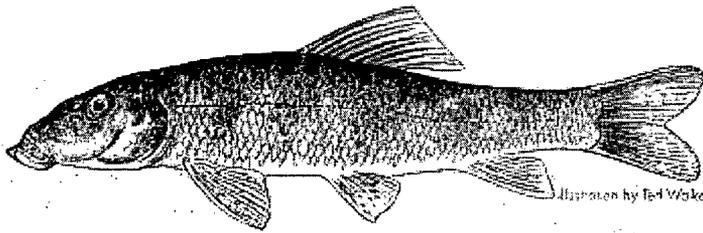
her as eggs and milt are released. The tiny, slightly adhesive eggs scatter over the gravel, generally 20,000 to 50,000 per female. The eggs adhere to the rocks or drift downstream before settling to the bottom. The motions of the spawning act disturb the gravel and help to cover the eggs slightly.

Neither parent cares for the eggs or young, which is typical of the sucker family. After they hatch, young white suckers remain in the safety of the gravel for a week or two. Then they move off. White suckers can grow rapidly with sufficient food, and they themselves are an important food for game fish. If not caught or eaten, white suckers can live up to 12 years.

White suckers are moderately active in the daytime, but do most of their feeding at sunrise and sunset, when they can move into shallow water in dim light. They are bottom-feeders. They eat both plant and animal material, like zooplankton, aquatic insects, mollusks and crustaceans. White suckers are schooling fish, and can sometimes be seen in groups in the pools of clear streams.

Northern Hog Sucker *Hypentelium nigricans*

Species overview: Northern hog suckers seem to be misnamed, because they don't like mud. Instead, they are a clean-stream fish. They are abundant, in suitable habitat, over the eastern half of the United States and southern Canada, from central Minnesota eastward through the Great Lakes region to New York, and down the Mississippi River watershed to the Gulf of Mexico. Hog suckers are common over most of Pennsylvania, but they are missing from most of the Delaware River watershed. The genus name "Hypentelium" is of Greek origin and means "lower lip five-lobed." The species name "nigricans" means blackish.



Identification: Northern hog suckers can grow to about 22 inches and four pounds. They are not as silvery as most other suckers, but are well-camouflaged to disappear against the gravel and rocks of their underwater home. The back and upper part of the hog sucker's head is brownish, with dark mottling. Across the back are four oblique dark bars, or saddles, which shade to lighter brown on the sides. The conical body has a dull, bronze sheen, and there are dark blotches above the whitish belly. Hog suckers have a large, long head with a slight depression between the eyes. The snout is long and their fleshy lips protrude more than most other suckers' lips. The lower fins are dull-red, and all except the anal fin have dark mottling or spotting. During breeding, both sexes develop tubercles—tough, fleshy nobs—on some fins, and in the male on the body scales as well.

Habitat: Because they cannot tolerate siltation and move out of water that becomes tainted with pollutants, hog suckers are considered indicators of good water quality. They are especially associated with gravelly riffles and adjacent shallow gravel or rubble areas in streams. When hog suckers live in lakes or reservoirs, they can usually be found near the mouth of tributary streams where there is some water movement. Hog suckers have a small home range, limiting their traveling to a few hundred feet. Hog suckers don't mind cold water and can be found in trout streams.

Life history: Hog suckers spawn in spring, when the water temperature warms to 60 degrees, over gravel-and-sand riffles, in shallow water. When they live in a large stream, hog suckers may make an upstream run to spawn in smaller headwaters. Two or three males move alongside a female as she releases her eggs. The spawning activity produces violent thrashing and splashing. This helps to dig a shallow depression in the bottom gravel, into which the non-adhesive eggs fall. Waiting minnows may rush in to eat any eggs that are exposed. After spawning, hog suckers leave, allowing the eggs to hatch on their own.

Northern hog suckers are prolific egg-producers. Their many small young are used as food by other fish. Hog suckers themselves are bottom-feeders, feasting on immature aquatic insects, snails and mollusks, crustaceans, algae and other plant material. Hog suckers use their large head and strong snout to range through the riffles, turning over rocks. They scrape material off the rocks and eat the plant and tiny animal material underneath. This form of foraging dislodges other insects, crayfish, minnows and stream life. Other fish follow feeding northern hog suckers and grab the food left or dislodged by the hog suckers.

Northern hog suckers have a reduced swim bladder. With their bulky head, tapered body, and low, spreading

pectoral and pelvic fins, a reduced swim bladder suits them well for life on the bottom of fast-flowing streams. Like darters, hog suckers rest on their fins on the stream bottom, but dart away when disturbed. Hog suckers become inactive when the water temperature falls below 50 degrees.

The Redhorses *Genus Moxostoma ssp.*

Genus overview: The redhorses are suckers best studied as a group, because even biologists have difficulty telling one species from another. Most are similar in appearance, with similar habitat requirements. Most species can sometimes be found together in the same stream. The redhorse genus includes 18 species throughout the Mississippi River basin, Great Lakes watershed, and parts of the southeastern United States.

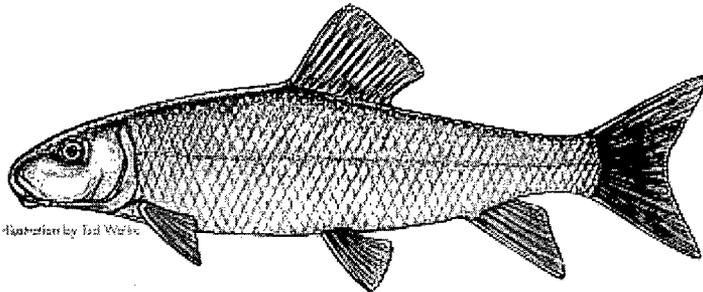


Illustration by Ted Wabke

CANDIDATE

In Pennsylvania there are five redhorses. The **silver redhorse** (*M. anisurum*) is common in the Allegheny River and its larger tributaries, and also in the Lake Erie watershed. The **river redhorse** (*M. carinatum*) has been infrequently reported in the Allegheny River and is now a candidate for threatened or endangered species status. The **black redhorse** (*M. duquesnei*) is locally plentiful in some sections of the Allegheny River. The **golden redhorse** (*M. erythrurum*) is also locally abundant in the Allegheny River and is found in Lake Erie tributaries. Golden redhorses have also been found in the Potomac River watershed in the southcentral part of the state, which is unusual because this fish is absent from most Atlantic Coast streams. The **shorthead redhorse** (*M. macrolepidotum*) is a widespread redhorse throughout central North America and in Pennsylvania, but it has not been reported in the Delaware River watershed. Redhorses get their common name from the orange or reddish color of the fins of most species. The genus name "Moxostoma" means "sucking mouth."

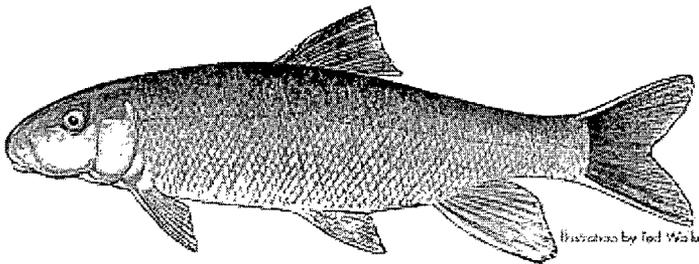


Illustration by Ted Wabke

Identification: Redhorses reach a maximum size of 25 to 30 inches, depending on the species. Pennsylvania redhorse species are all near look-alikes. They are solid-bodied, cylindrical fish, with strong, smooth scaling reflecting silver or gold. They have the spineless fins, soft, toothless mouth and thick lips typical of the sucker family. The head has no scales. The redhorse's back is gray to olive-brown. The upper sides have copper, golden or greenish sheens. The lower sides are silver to bronze. The belly is golden or silver-white. The redhorse's fins, either all or some of them, depending on the species, are tinged with red-orange or pink-orange. The red coloring may be at the edges of the fins, or spread over the whole fin. In the black and golden redhorses, the dorsal and caudal fins are gray. In the shorthead redhorse, the tail fin's upper lobe is longer and more sharply pointed than the lower lobe. The river redhorse's caudal fin is an especially bright-red, and its other fins show red-orange. Biologists also find differences between the redhorse species in their lip shapes and the number of scale rows on various parts of the body.

Habitat: Redhorses live in slow areas of big rivers, in the fast waters of small creeks, or lakes, according to their species. Most are typically fish of clear, small to medium-sized rivers. The silver redhorse prefers the deep pools of big rivers, with slow flow and a soft bottom. It is fairly tolerant of muddy water. River redhorses live in medium to large rivers with swift water and are believed to be decreasing in numbers through their range because of dam impoundments. The black redhorse is found in clear, cool creeks and small rivers, in

the current over a gravelly bottom. Golden redhorse juveniles can live in riffle margins, but the adults like slow, deep runs in rivers. The shorthead redhorse is different from other redhorses because it readily uses lake habitat, especially if there is a suitable stream flowing into the lake. Shorthead redhorses also live in the fast water of large rivers, over gravel and boulders, and are very vulnerable to pollution and siltation.

Life history: The redhorses spawn in spring, with most migrating upstream to shallow rubble or gravelly shoals in fast water. In some redhorse species the males are territorial. In other species the eggs are simply scattered and left on their own. Several males generally spawn with one female. The river redhorse male creates a nest depression, or redd, in the gravel, by pushing the stones with its head, tail and pectoral fins. Black redhorses gather in the pools above the spawning shoals before spawning, sometimes leaping out of the water. Several hours later the males drift down to the shoals and establish territories. Golden redhorse males are aggressive defenders of their spawning territories, which are usually in slower, shallower water than those that most other redhorses use for egg-laying. Shorthead redhorses are not territorial, and although their spawning activity creates a circular nest, biologists believe this to be accidental. Silver redhorses move out of their usual slow-water habitat into swifter river areas or small streams to spawn.

Redhorses spawn when water temperatures reach the high 50s to low 70s, according to each species' preference. Females deposit from 6,000 to 36,000 eggs, according to their size and type. Redhorses eat a variety of small aquatic animals and plants found on the stream bottom, including snails, mollusks, midges, aquatic insect larvae and algae. River redhorses are especially known for feeding on freshwater clams, crushing the small mollusks with their strong pharyngeal teeth (located in the throat).

[Back to Top](#) -- [PA Fishes Table of Contents](#) -- [PFBC Home](#)

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