CLEARWATER'S KEY TO COMMON HUDSON RIVER FISHES

NEW EDITION

This Clearwater Key to Common Hudson River Fishes is currently between printings, and thus is being made available for use in Hudson River Snapshot Day and other education programs through this pdf copy. Please note pages 16 and 20 have been clarified from prior printings with comments by Steve Stanne, Interpretive Specialist, Hudson River Estuary Program.
1. Eyes on opposite sides of head.
2. Lies flat on bottom.

A. Eyes on same side of head; body.
The hogchocker is a member of the sole family, closely related to flounders. It is usually brown or gray on top, with irregular wavy bars across the body. Its underside is light-colored, often with dark spots. Though we might catch them anywhere along the Hudson, hogchockers are most common in shallow, brackish water. They are abundant from Peekskill to Yonkers. A big hogchocker is all of six inches long.

**Diagram:***

**b. PECTORAL FINS PRESENT**

**a. PECTORAL FINS ABSENT**

**3. Hogchocker**
3. **Winter Flounder**

- Eyes on right side of body
- Eyes on left side of body

As one might guess from its name, the Winter Flounder is most commonly caught in the colder months of the year. It moves into the lower Hudson in the winter and returns to warmer waters in the spring. It is a silvery fish with a greenish hue and a weight of two pounds.

Winter Flounder are generally brownish on top, but may be dark gray or olive green. Most of those we net are less than twelve inches long, but they may reach twenty inches and a weight of two pounds.

Winter Flounder is also known as Blackback Flounder or simply Flounder.
Summer Flounder

Branched or Free Rays at Front of Dorsal Fin

Windowpane

Branched and Free at Tips Rays at Front of Dorsal Fin

Summer Flounder are most common here in the warmer months.

As one might guess from the name, summer flounder are most common here in the warmer months.

Windowpane

Summer Flounder are brown, grey, or olive-colored above, often with darker spots.

Another in the lower Hudson and New York Harbor know this fish by the name "fluke." It is a popular game fish, reaching a weight of two to five pounds and a length of two feet. Large individuals are called "doormats."

Windowpane

Summer Flounder

They can reach a length of eighteen inches, those that come up in our nets are seldom more than twelve inches long.

The windowpane is a saltwater fish. We catch many in New York Harbor while organs can be seen under the skin and near transparence on smaller individuals the intestinal and gonopods. Another is brown in color and heavily spotted with white, and darker brown. Its top is brown in color and heavily spotted with white and darker brown. This fish is very thin and not nearly as big enough to be popular with anglers.
NORTHERN PIPEFISH

The northern pipefish is a small, slender species common in the lower Hudson estuary. It is related to the seahorse, but pipefishes usually have more than eight inches long. Their long, skinny shape keeps it well hidden in the water. Often a pipefish uses only its dorsal fin to move around, while keeping its body very still. This gives the fish the appearance of a drifting stem of grass. However, it can swim quickly in short bursts.

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Like the seahorse, the pipefish has a tail fin. It swims with rippling movements of its dorsal fin. Its tail fin is prehensile: the pipefish uses it to hold on to plants and other objects at the bottom of the estuary. Unlike the seahorse, a pipefish uses its long snout and tiny mouth to suck up its meals of small crustaceans. Male pipefish have a pouch on their bellies in which they incubate eggs laid by the females. This makes up for its drab color with other interesting features: the female pipefish has many eggs in a single batch. The male pipefish incubates the eggs in its pouch, a process that takes about two months. When the eggs hatch, the male will release them. The pipefish has a unique way of fertilizing the eggs: the male will release sperm into the water, and the female will release eggs. The sperm will then fertilize the eggs. The pipefish is a fascinating creature, and it is one of the most unique fish in the world.
a. Pelvic fins absent

b. Pelvic fins present
American Eel

Body long and snake-like.
Northern Puffer

Off

Body round or boxy; tail squared

Butterfish

To side; tail forked

Body silvery and flattened side
11. **Rainbow Smelt**

![Fish Diagram]

- **Scales Present**
- **Barbels**
- **No Mouth Near**

12. **Scalise Present**

- **Whisker-like Barbels Absent**

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**Rainbow Smelt**

- Small, slender, silvery fish, growing up to nine inches long. Those found in the Hudson are anadromous, dwelling in the ocean but swimming into fresh water to spawn. During their early spawning runs into the river, their bodies become elongated and they lose their color, making them compared to a rainbow.
Bullheads and their eggs and young from predators. While they are able to survive low oxygen levels and some pollution, they are not as tolerant as other fish species. Bullheads feed on the bottom and are not as active as other fish species.

Bullheads often have a square or flattened tail. This shape helps them move through the water more efficiently. Bullheads have developed a unique adaptation to the polluted waters of the Hudson River. They are able to survive in these conditions due to their ability to filter out pollutants and contaminants from the water.

Bullheads are found in the Hudson River and are common in many areas. They have a unique appearance with their red tails and dark bodies. Bullheads are an important part of the ecosystem in the Hudson River and play a role in the food chain.
Atlantic Tomcod

A. Three dorsal fins

B. One or two dorsal fins

Atlantic Tomcod is olive-green or brown, with dark blotches or spots scar.
15. Hake

Important commercial fishes were found in large numbers elsewhere.

Hake are not common in the estuary and not pursued by the fishing industry or
also occurs in the salt waters of the Hudson and the lower Hudson.

If the hake you're looking at lacks the long filament on the forward dorsal fin, and
feed a weight of five pounds or more, those we catch are much smaller.

The hake shown here is the red hake. The species we most frequently catch in
Hake

Fourbarred Rockling

Three barbels on nose
and carefully in your examination. The dorsal fin may just erect for a second or two. Be patient. Poking and handling to get the fish to display its spiny dorsal may require a bit of gentle urging. If your fish is set well back towards the tail, there may be a spiny dorsal fin in front of it. If so, examine it closely. If the soft dorsal fin on the fish's sides is bluish or bluish and bluish, that is the species for this. Spiny-rayed dorsal fins are a feature that make it hard to see. Smallmouth and largemouth bass' spiny dorsal is folded down unless they are disturbed. This can separate out two major groupings of fish -- those that have a spiny-rayed dorsal fin, and those that don't. The potential problem is that spiny-rayed basses often keep their spiny dorsal fins in front of them, and those that have a spiny-rayed dorsal fin, and those that don't. The potential solution is one of the most important pages in the Key used to separate out two major groupings of fish.
b. Snout not long, or like duck's bill.

17  20

18

a. Snout long or shaped like duck's bill; dorsal fin far back on body.
18.

19.

FIN

BONE DOES NOT EXTEND INTO CAUDAL BACK AND BODY WITH SCALES: BACK

HEAD AND BODY WITH SCALES: BACK

CAUDAL FIN

PLATES: BACKBONE EXTENDS INTO

A. Head and body with scales: back

B. Backbone in

C. Tail, plates: backbone extends into

Sturgeon

Alewife

Atlantic salmon

Shortnose

Hudson's sturgeon

Atlantic

HISTORY OF HUDDSON'S STURGEON SUPPORTED IN EXTENSIVE COMMERCIAL FISHERY.
**Atlantic Needlefish**

Long and very thin, similar to a needle. Body conical, without lateral lines.

**Squirt Long and Needle-Like Body**

Thin, long, and needle-like, with a conical shape.

**Pickerel**

Shaped like a duck's bill, with a slender body and a pointed snout. 

**Redfin Pickerel**

Has vertical bars of dark color on its sides.

**Redfin Pickerel**

Larger than the previous species, with a longer body and a more robust build.

**Chain Pickerel**

Larger of the two species, with a more robust build.

**Hudson's Two Pickerel**

So far, the two species of pickerel have been found in the Hudson's estuary. Atlantic Needlefish are silvery in color, with a needle-like body. Squirt long and needle-like body has a conical shape, without lateral lines. Redfin Pickerel has vertical bars of dark color on its sides. Chain Pickerel is the larger of the two species, with a more robust build.
A. Lateral Line Absent

B. Lateral Line Present

Reveal any such feature.

Angles. Careful examination of Killifish and Herring will not
discover any such slit-like feature. Visible as slight shiny on the sides of the fish from different
angles, visible as slight shiny on the sides of the fish from different
illuminations of Killifish usually consists of a series of tiny bumps or blisters.

Lateral Line. Usually consists of a series of tiny bumps or blisters.
The lateral line can make it appear that it does have one. The
lateral line of Herring is much less obvious, for example. The
muskellunge and pigmy

Herring lack a lateral line. However, the muskellunge and pigmy

Two common varieties of Hudson River Fishes - Killifish and

Lateral Line
b. Tail distinctly forked

A. Tail rounded or squared off

KILLIFISH

The striped killifish, also called slender killifish, grows larger than the other two species and has a longer snout. Males have dark vertical stripes on their sides; females do not. The striped killifish is the most slender of the two, and the corners of his tail are more squared off than rounded.

The killifish's color ranges from yellow underparts, to dark brown on its head. The males are colored with blue spots and stripes on a dark background and are often used as pet fish. The killifish is very hardy and able to endure wide ranges of salinity, oxygen level, and temperature.

KILLIFISH are abundant in the estuary's shallows and marshes. Seldom more than a few inches long, one or several common species are an important food source for larger fish and other animals, and are often used as bait by anglers.
Bay Anchovy

Hermiting

A. Maxillary extends past eye
B. Maxillary doesn't extend past eye

Bay Anchovy

Herring

While sometimes caught in salt water the

Gizzard Shad is primarily a freshwater fish.

The anchor, also called mossbunker, is

The alewife and herring-like are also abundant. Their spine spawning runs

The alewife has a larger eye and deeper body than the herring herring.

American Shad are abundant, born in

Fresh water, while spawning most of their

Young fingerlings abound in the Hudson in summer and early fall. Adults appear

predators.

Shad are an important food for striped bass, bluefish and other fish.

The bay anchovy, common in brackish and saltwater reaches of the Hudson is
b. Base of dorsal fin long front to back; 12 or more rays in fin

25

24

q. Base of dorsal fin not long front to back
Shiner

MOUTH POINTS FORWARD

Sucker

MOUTH POINTS DOWNWARD

Shiner is slivery and

The Spotted Siswill is slivery and

With most people call any small fish a minnow, scientists save that term for a

While many species are small fry, the Hudson is especially common and disting-

shines over many species found in the Hudson and its tributaries. Of the

commonly referred to small fish in the minnow family. The family is a large one,
certain family of fish, some of which grow to a larger size. Shiner is a name

which most people refer to as the minnows. The minnows are a small family

swimming runs into the Hudson's tributaries during the spring.

bottom with a specially adapted, ventriculocaecal muscle. These fish make

over many miles. This white sucker is found in fresh water where it feeds on the

we commonly catch in the Hudson River. In the spring, it can grow to a length of

There are several species of suckers in the Hudson's watershed, but the only one

The deeply curved, they are most commonly found in shallow water among

Weeds.

Scientifically.

Shiner is slivery and

The Spotted Siswill is slivery and

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Goldfish

Barbels Absent

Carp

Whisker-like Barbels at Corners

The goldfish is closely related to the carp, and like the carp was introduced to this country from overseas. While there are some individuals in the Hudson these come from over seas. The goldfish prefers in fresh water in thick vegetation, here shallow water as they thrive in muddy bottoms. There they can be seen swimming in pairs or in groups. The carp are olive green or brown on the back, with golden yellow sides. As spawning time is near, the males and females are attracted to each other. The eggs are laid in clusters and hatch within 7 days. The fry are born with a barbels at the corners of the mouth. The common carp is native to Europe. The first reported introduction to the United States was in 1827, New York. In 1831, the first is now found in fresh water in the Hudson and numerous in the country. In Europe, carp are cultured and raised as a popular game fish in the lakes and rivers. Generally considered to be a nuisance because carp compete with valued European carp are cultured and raised as a popular game fish in the lakes and rivers. Generally considered to be a nuisance because carp compete with valued

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b. Soft and spiny parts of dorsal fin clearly joined

26. 37

27

C. Soft and spiny parts of dorsal fin separate or nearly so
b. Gill covers lack spines
29

a. Spines present on gill covers
28
Sculpin

While some exclusively freshwater sculpins occur in the Hudson's tributaries, we catch only saltwater species. They show up in our nets in New York Harbor and the lower Hudson. The most common one is the grubby, small (less than six inches) bottom-dwelling fish. It is mottled with patches of brown, gray, and black. Sculpins may reach a length of sixteen inches, but most we catch are much smaller. People don't generally fish for them, though they are considered tasty.

Two species of sculpin occur in the Hudson. The striped sculpin has two narrow dark stripes running along its side from the head towards the tail. The northern sculpin may be plain or mottled on the sides of its body but lacks these diagonal bands. Its wing-like pectoral fins are not as long as those of the striped sculpin, and its tail is slightly forked. The striped sculpin has a squared-off tail.

Pectoral fins very large, with several separate, finger-like rays.
b. Tail not rounded; slightly to deeply forked, or pointed.

Caudal fin rounded or square.

Very small mouth.
Darters

- spiny rays part of dorsal fin
- separate spines

Sticklebacks

- spines on back separate from dorsal fin
- separate spines

Darters

- sticklebacks build elaborate nests with agile weeds and grasses. So no doubt these sticklebacks will have more artful nests than darters. However, sticklebacks do not have the same striking coloration as darters. Darters are usually green, with variable markings on their sides. Neither gets much attention from fish-eating predators.

Darters

- sticklebacks have three spines - two separate and one at the front of the dorsal fin. And a compound tail, which has no paired fins.

Darters

- sticklebacks have three spines - two separate and one at the front of the dorsal fin.
b. Base of soft dorsal fin about the same length from front to back as base of spiny dorsal fin

31.

33.

32.

a. Base of soft dorsal fin longer from front to back than base of spiny dorsal fin
A. Tail fin deeply forked; spiny

B. Tail fin slightly forked to outer

C. Tail fin not as tall as soft dorsal fin; spiny dorsal fin; warbly pointed; spiny dorsal fin

Weakfish are silvery in color with fins sparsely scaled over the upper part of their bodies. Those fins are less likely to find these older fish in the Hudson.

Bluefish are very popular with shore. They are fierce predators with lots of sharp teeth. Larger adult bluefish may weigh over 30 pounds. But sizable adult bluefish have a sudden inclination to swim up or down near the surface of the water in search of a school of shad and other small fish. These are called "shad flats.

Brownshad, a common in the Hudson, is the young fish. Bluefish spawn in the ocean. They are less common in the Hudson than young fish. Bluefish spawn in the ocean.
b. Spiny and soft dorsal fins completely separate

33. 35

a. Spiny and soft dorsal fins slightly joined

34
The Largemouth Bass is one of our most popular freshwater game fish. There are
mounds of fingerlings for the winter.

Largemouths prefer shallow, weedy, slow-moving areas of the Hudson. Like the
smallestmouths and shad, they feed on insects, small crustaceans, and
fish larvae. The White Perch is also a common species and is readily caught by
angling or minnowing, especially during spawning season. The White Perch is
highly valued as a food fish and is also used for bait. It is a common species in
the Hudson River and its tributaries.
Silverside

Directly under pectoral fins
Pelvic fins set back on belly, not directly under pectoral fins

Bluish, wizhish, and other predatory fish

Silversides are small fish, not often more than two inches long. Along with herring, they are one of the most important prey species for striped bass.

Silversides are easily recognized by the silver stripe running the length of their bodies. Often schools of several species will appear in our rivers, but most silver-colored bodies are silversides. Of several species that might appear in our area, the most slender bodies are silversides.
Stripped Bass

Running From Head To Tail
Slivery body color; dark stripes

Yellow Perch

Vertical bars; reddish pelvic fins

Yellow Perch

Yellowish body color with dark fins
Black Crappie

Fish is sometimes called the cultivated or strawberry bass. The bellies are usually red with dark spots on their sides. This one pound, the fish is black in green, olive, or greyish. Crappie is silver and white.

Black Crappie are found in fresh water usually when the current is slow. It is a popular sport fish and a member of the sunfish family.
Porcupinefish

**Porcupinefish**
- Opercular flap present
- Sunfish
- Ear-like opercular flap present

**Porcupinefish**
- Opercular flap present
- Sunfish in our catches
- Opercular flap: If there is a long black line on its body, with a reddish-yellow on its body with a red tip
- Pimplespreads have a gill flap with a black tip

**Opercular flap**
- Opercular flap: If there is a long black line on its body, with a reddish-yellow on its body with a red tip
- Pimplespreads have a gill flap with a black tip
- Sunfish in our catches
- Opercular flap: If there is a long black line on its body, with a reddish-yellow on its body with a red tip

**Sunfish**
- Opercular flap: If there is a long black line on its body, with a reddish-yellow on its body with a red tip
- Pimplespreads have a gill flap with a black tip
- Sunfish in our catches
- Opercular flap: If there is a long black line on its body, with a reddish-yellow on its body with a red tip
- Pimplespreads have a gill flap with a black tip
The smallmouth bass is a very popular sport fish, considered by some the gamefish of the 1000 Islands. It is a large-mouthed bream that has a powerful bite. Its body is long and slender, with a deep, compressed shape. The smallmouth bass has a dark horizontal band running through the eye and extending toward the tail. The fish has a variable coloration, ranging from olive green to silvery blue. The smallmouth bass is a piscivore, feeding on a variety of fish and invertebrates. It is known for its aggressive behavior and is a popular target for anglers.
Adult tautog, also known as blackfish, are usually dark colored - black, brown, or dark gray - with blotches of darker color on the sides. Small juveniles are often greenish in color. Whether called tautog or blackfish, this saltwater fish is popular with anglers. Adults average about three pounds in weight. Their mouths have large teeth able to crush mussels, clams, barnacles, lobsters, crabs, and other hard-shelled prey. We sometimes find tautog in New York Harbor, and they have been known to stir up the Hudson, especially in years of drought when salt water moves far up the river.

The cunner and tautog are very closely related. Young ones can be difficult to tell apart. Most cunners we catch are brown, with a bluish tint in bright sunlight, and only a few inches long. A big one would weigh only a couple of pounds.

Also going by the name bergall, this small fish is expert at stealing bait off hooks without getting caught. A saltwater species that we occasionally catch in New York Harbor, it is most common around rocks, pilings, and similar structures that provide shelter.

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**TAUTOG**

- NO SCALES
- Tautog

**Cunner**

- SCALES
- Opercle (Gill Cover) Has Scales

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