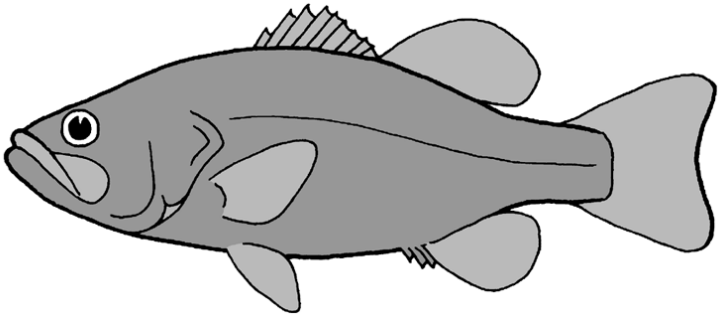
Dichotomous Key

to the

Common Fishes



of

Lake Champlain

South Lake Edition

Matthew F. Witten
Illustrated by Nancy Bernstein

Dichotomous Key to the Common Fishes of Lake Champlain, South Edition

A publication of Matthew F. Witten in cooperation with Lake Champlain International Fishing Derby and made possible by The South Lake Champlain Trust, Inc.

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INTRODUCTION

This key is meant to help people of all ages **identify and discover the fishes of South Lake Champlain.** We hope the key is easy and fun to use. If you have an interest not only in catching fish but also in learning about them, this key can probably help. We offer a set-by-step procedure for figuring out what family, genus, or species of fish you are looking at, plus a little information about each fish's characteristics, behavior, and habitat. The key is designed for those who **observe fish that are still alive** in a net, bucket, aquarium, or (briefly) in hand.

The key focuses on the fishes that live in South Lake Champlain (south of the Chimney Point-Crown Point bridge); this region in several ways is a different kind of ecosystem from the northern lake. The warmer, shallower, and more turbid (cloudy) South Lake rarely supports species such as the Atlantic salmon, sturgeon, muskellunge, and other deeper water fishes, so these species are not included. Occasionally fish may be found in the South Lake that are not included in this key. This key is an attempt to cover the **fish that are commonly caught or seen.**

This book has been reviewed by professional biologists and field-tested in South Lake Champlain. The dichotomous key, however, does not meet professional scientific methods and standards for identifying fish species, which often require dissection or painstaking counting of body parts, as well as a taxonomically based format that organizes species by family. Instead, **this key is designed to be readily used by anyone over the age of about 10** while out on the water or on shore. With that in mind, we have tried to pinpoint the easiest and most consistent ways of identifying fishes rather than the most scientific, conventional ways. Good luck and have a great time!

HOW TO USE THIS KEY

The fish key is called "dichotomous" because on each right-hand page you are given two choices, "A" or "B", which represent two types of fish. Each pair of choices is called a couplet. As you leaf through the key, **you will always be making one choice per couplet.** Once you've made the choice of "A" or "B", the number following your choice will tell you what couplet (or page) to "go to" next. The number of the couplet is on the bottom right corner of the page.

Always start with couplet number 1.

Make the choices that seem best to you. This book is not exact, so you will have to use your own judgment, and you may even have to revise a choice if you find yourself on a page that doesn't make sense. It's all part of the process of getting to know fish and learning what characteristics to look for.

Once you have gone through a series of simple choices (sometimes after a few pages, sometimes after many), you will arrive at a page that gives you the name of the fish you are looking at. The facing page (on the left) describes the species. These descriptions may help you to identify fishes.

ACKNOWLEDGEMENTS

A grant from The South Lake Champlain Trust, Inc. made this publication possible. Lake Champlain International Fishing Derby procured the generous donation of printing from Villanti & Sons Printers, Inc.

Without the help of artist, naturalist, and captain Nancy Bernstein, the development of this book would have been nearly impossible. Her work is elegant, practical, and tremendously appreciated.

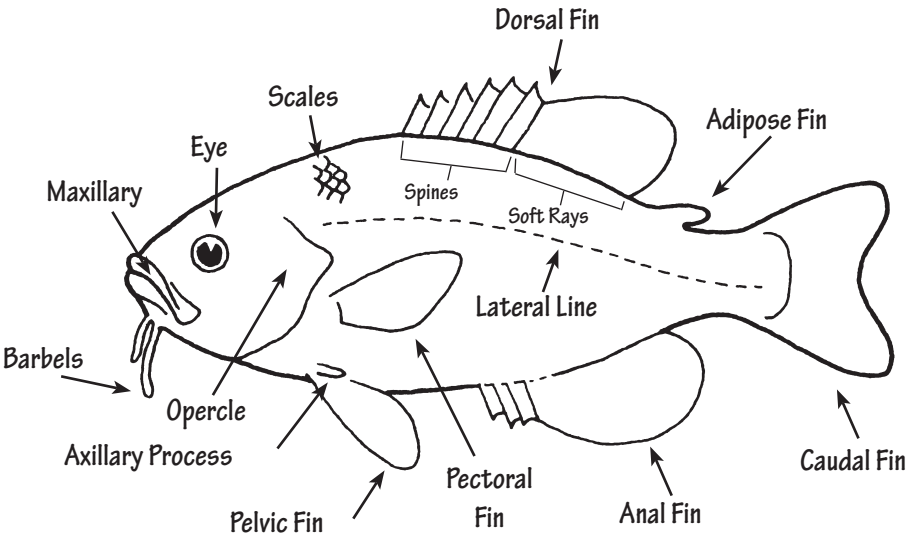
Clearwater, Inc. on the Hudson River provided an excellent model for this book *(Clearwater's Key to Common Hudson River Fishes),* and I thank the Clearwater staff for their longstanding cooperation.

Former University of Vermont Professor George LaBar guided my research into freshwater fishes, and graciously reviewed the fish key from his new post at the University of Idaho. Professor Doug Facey of St. Michael's College recommended some crucial last-minute changes.

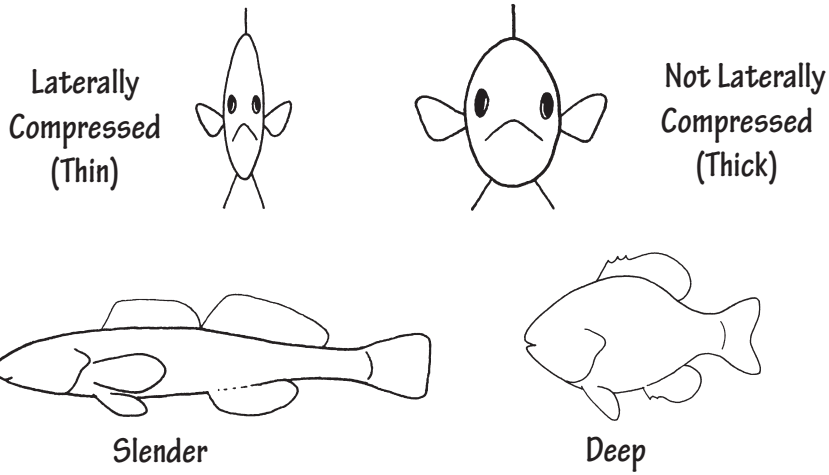
Vermont State Fisheries Biologists Brian Chipman and Jon Anderson provided data on fishes currently and historically found in South Lake Champlain, and advised me on which fishes to include in the key.

Several former and current UVM Fisheries graduate students have also lent their expertise in reviewing this book: Joe Englert was impressively thorough in his comments, and Ted Hawes, Matt Raffenberg, and Bernie Pientka also took time to inform my editing.

Important Fish Identification Characteristics



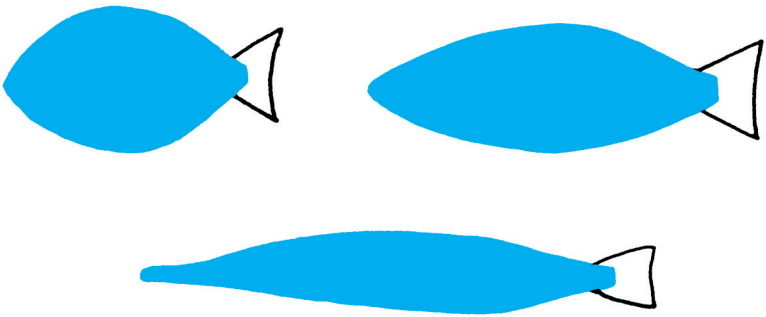
Fish Body Types



A. Body long and snake-like — *go to 2*

B. Body not long and snake-like

— *go to 3*



SEA LAMPREY *(Petromyzon marinus)*

Lampreys are among the most primitive fishes in the world, being remnants of a group of jawless fishes that were the first vertebrates. Lampreys can be easily recognized by their long shape, disk-like mouth and seven pairs of round gill openings.

The sea lamprey, which is common in Lake Champlain, is considered by many to be a pest, as it is a parasite of other fishes, most notably the lake trout. It can also be considered a predator.

In the spring, lamprey move into streams to spawn, laying their eggs in gravel. The young (in a larval stage that may last several years) drift downstream to muddy areas where they burrow into the bottom and spend much of their time with their mouths exposed, filtering particles out of the water. As they transform into adults, the mouth becomes sucker-like and teeth develop.

AMERICAN EEL *(Anguilla rostrata)*

American eels are catadramous, meaning they spawn and hatch in salt water, then migrate to fresh water to live. They are hardy fish, tolerant of pollution and able to survive out of water longer than most fishes.

The American eel may seem to have no scales, but on close inspection, one can find its tiny, embedded scales. Young eels are grayish green dorsally, shading to white below. As they grow, they become more yellowish.

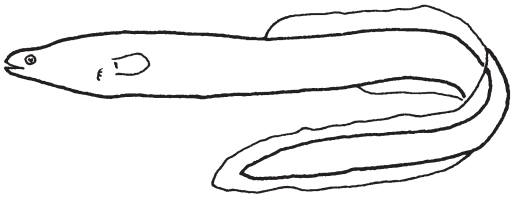
Eels are good at working their way upstream, over or around low falls and dams and sometimes they even travel overland. They are nocturnal, feeding mostly on insects. Eels spend much of their time buried in gravel, mud bottoms, or under rocks.

A. Mouth in form of a sucking disk

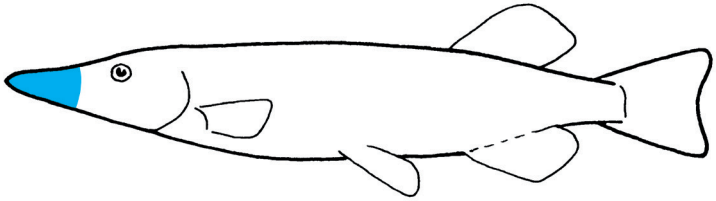
— Sea Lamprey

B. Mouth not in form of a sucking disk

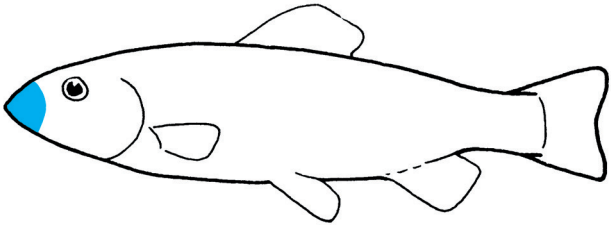
— American Eel



A. Snout long and pointed or duck-like — *go to 4*



B. Snout not long or duck-like;
snout blunt — *go to 5*



LONGNOSE GAR *(Lepisosteus osseus)*

Gars are long, slender, predaceous fishes with a long snout containing needle-like teeth. The longnose gar is covered with an armor of diamond-shaped scales, and is olive brown to dark green as adults, brownish as young. The younger longnose gar has various sized spots on its sides, but these disappear with age. Gars are able to come to the surface and breathe air.

The longnose gar grows very rapidly, reaching as much as 20 inches during its first year. It is strictly carnivorous with most of its diet being fish with some crayfish and occasional insects. Gars are often found in warm, shallow waters.

PIKES (Esocidae)

Pikes (which include pickerels) constitute a small family with only one genus, *Esox.* Pikes have slender, elongate bodies with the dorsal and anal fins set so far back that the fishes appear arrowshaped. They have a broad, flat snout with a large mouth and stout teeth. In keeping with their preference for weedy habitat, pikes are usually green or brassy in color.

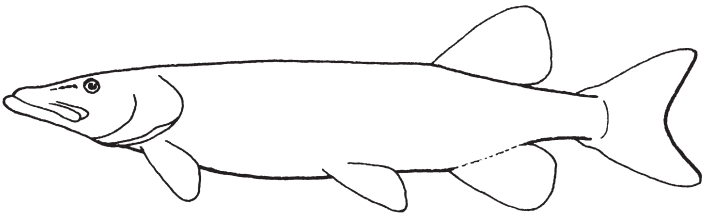
Pikes eat fish, frogs, and other small animals which they catch by ambush. They hold themselves still, looking like a floating stick in the weeds, until an unsuspecting fish swims by. Then with a sudden swift dart, the pike seizes its prey in its sharp-toothed mouth.

Northern pike and chain pickerel are popular game fishes, caught by rod and reel anglers in summer and ice fishermen in winter. The adult northern pike *(Esox lucius)* tends to be larger (18-22 inches) than the chain pickerel *(Esox niger)* (15-18 in.). The adult redfin pickerel *(Esox americanus)* is even smaller, seldom exceeding 10 in. in length.

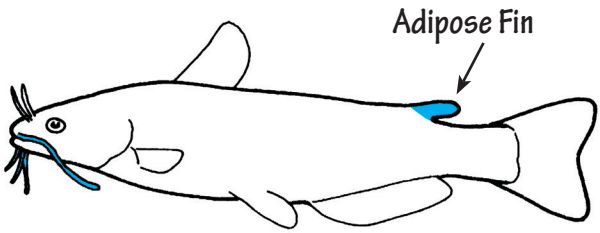
The chain pickerel has a longer snout then the redfin pickerel. The chain pickerel's sides are yellowish green with a chainlike pattern of darker brownish green lines. The redfin pickerel tends to have dark vertical bars on its sides and has reddish fins. The northern pike has a pattern of light spots on a dark coat.

A. Snout long and pointed; many needle-like teeth — LONGNOSE GAR

B. Snout flattened and duck-like; stout, sharp teeth — PIKE



A. Whisker-like barbels near mouth and adipose fin present — *go to 6*



B. Whisker-like barbels absent — *go to 7*

CHANNEL CATFISH *(Ictalurus punctatus)*

The catfish family has no scales and is stocky at the head, which has several pairs of whisker-like barbels. These barbels are used for smell and touch only. Great caution must be used in handling live catfish, for they have sharp, serrated spines on the front edges of their dorsal and pectoral fins. For centuries, Native Americans used the spines as needles and awls for leatherwork.

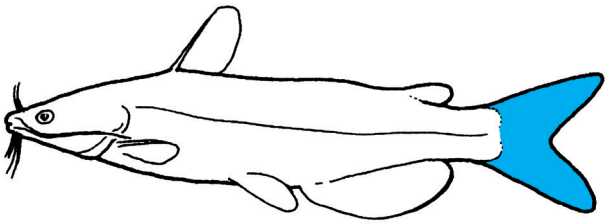
The channel catfish normally grows to 14-21 inches, with a steel-blue to grey color on upper sides, and dirty white to silver-white underneath. The sides of the young have a varying number of olive to black spots which are absent in adults.

Catfish do well in both cool and warm (usually slowly moving) waters, and feed at dusk and night, using their very sensitive barbels to locate food. Catfish have taste glands both in their barbels and in their skin.

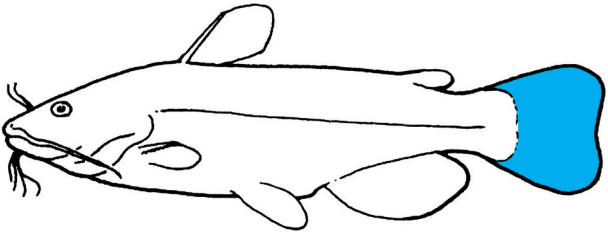
BROWN BULLHEAD *(Ameiurus nebulosus)*

The brown bullhead is in the catfish family, distinguished from the channel catfish by its rounded tail and more yellowish color on its upper sides. The average adult size is 6-12 inches.

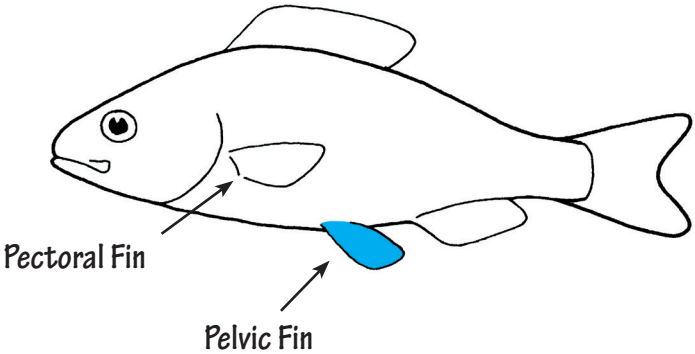
A. Tail forked — CATFISH



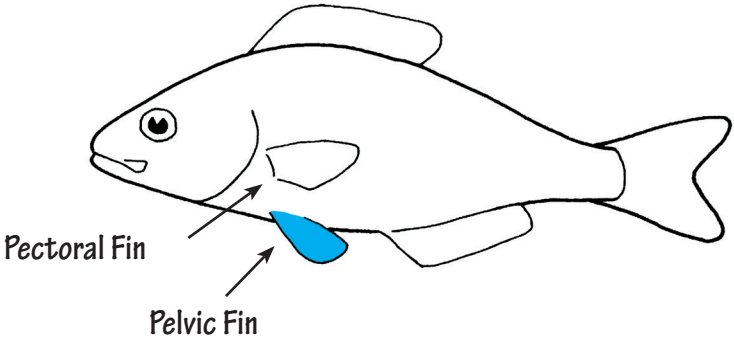
B. Tail rounded or nearly square — BULLHEAD



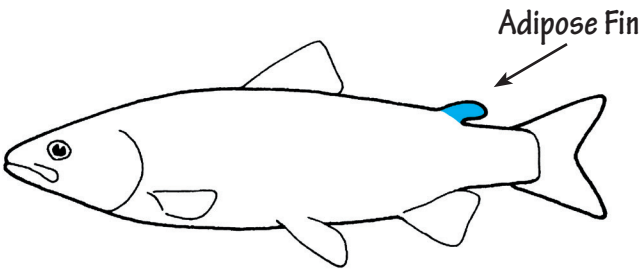
A. Pelvic fins far behind pectoral fins and near anal fin — *go to 8*



B. Pelvic fins located slightly behind or under pectoral fins — *go to 19*



A. Adipose fin present — go to 9



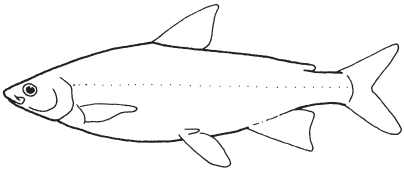
B. Adipose fin absent — go to 11

WHITEFISHES *(Coregonus)*

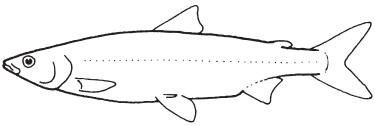
The cisco and lake whitefish are both in the trout family, and in the genus of whitefishes, or *Coregonus.* Whitefishes have larger scales yet smaller body size and smaller mouths compared to trouts. Whitefishes stay at midwater depth in the summer, usually in large schools.

The cisco *(Coregonus artedi),* also called lake herring, reaches a length of 8-12 inches, and its color is silvery with pink to purple irridescence, with a darker back.

The lake whitefish *(Coregonus clupeaformis)* has an average length of 15 inches, and is also of silvery appearance. A heavy overlay of mucus causes lake whitefish to feel more slimy than the cisco. These fishes are relatively uncommon in Lake Champlain.

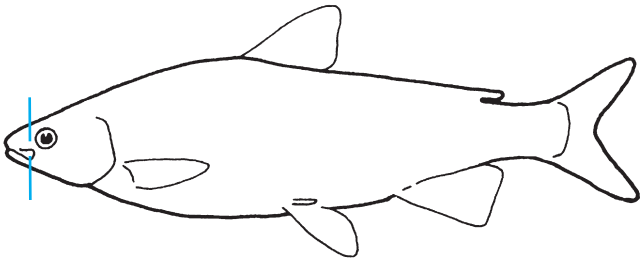


Lake Whitefish

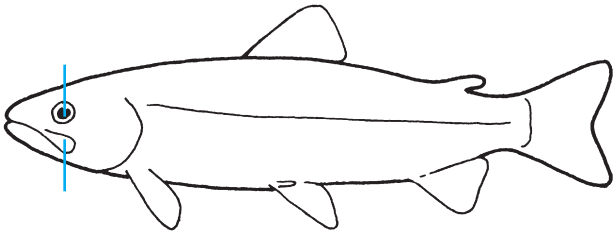


Cisco

A. Mouth does not extend to eye— WHITEFISH



B. Mouth extends to or past mid-point of eye — go to 10



TROUTS (Salmonidae)

The trout family, which includes whitefishes, ciscoes, trouts, chars and salmon, are well known for their wariness, fighting abilities, and good eating. Salmonids prefer cool, well oxygenated waters.

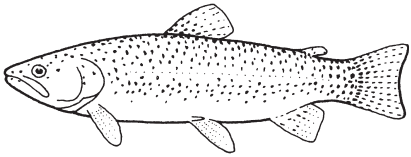
As a whole, trouts have small scales, large jaws, and soft fins, including an adipose fin.

Several salmonid species including atlantic salmon, cisco, and brown trout are found in Lake Champlain, but mostly in northern, deeper (and colder) sections.

The lake trout *(Salvelinus namaycush)* has light spots on a dark background over most of its body, including dorsal, adipose and caudal fins, and the head. The spotting is usually more intense on small fish.

The lake trout is predaceous, feeding on crustaceans, aquatic and terrestrial insects, many species of fish, and even small mammals. The lake trout is rarely found in South Lake Champlain, where the water is much shallower than north of the Crown Point bridge.

The rainbow trout *(Salmo gairdneri)* can inhabit either streams or lakes. Though its coloration is variable, the rainbow trout has pink cheeks and a vague pink blush on the body, and many small black spots, usually above the lateral line.



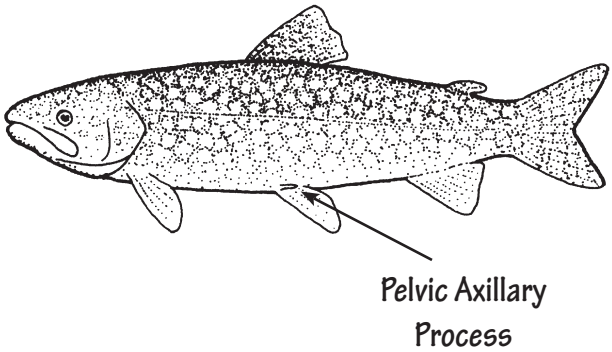
Rainbow Trout

RAINBOW SMELT *(Osmerus mordax)*

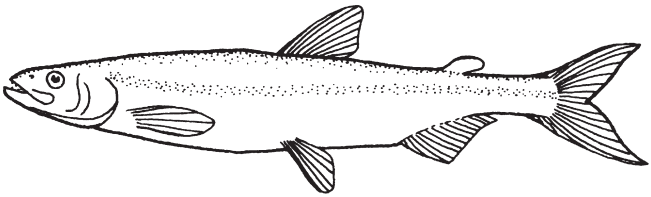
Smelts are slender fish with large, rough scales, large teeth on the tongue, and a silvery stripe along the side of the body. Though somewhat minnow-like in appearance, the smelt's adipose fin and large teeth distinguish it from minnows. The adult rainbow smelt averages 7 to 8 inches in length.

The rainbow smelt eats mostly plankton and insect larvae, and inhabits cooler waters, swimming deeper in the summer months. Smelt are considered very good for eating, and are also a major prey species of lake trout.

A. Pelvic axillary process present — TROUT



B. Pelvic axillary process absent, has large teeth with curved canines — RAINBOW SMELT

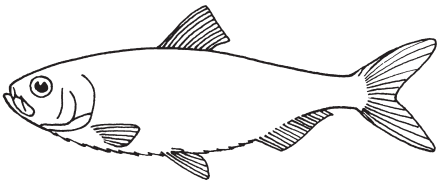


HERRINGS (Clupeidae)

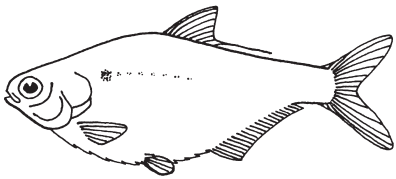
Herrings are silvery, of small to medium size, and spend most of their time in open water, travelling in schools.

The blueback herring *(Alosa aestivalis)* is an anadromous species, meaning it is born in fresh water, spends most of its life in salt water, and returns to fresh water to spawn in spring. Both the blueback herring and gizzard shad are believed to enter Lake Champlain via the Hudson River and Champlain Canal, apparently making their way through the canal locks with little difficulty.

The gizzard shad *(Dorosoma cepedianum)* is silvery blue on the back and upper sides, and there is usually a large, dark spot on the shoulder. The last ray of the dorsal fin is very long. The gizzard shad is one of the few fish species on the lake that can survive almost solely on vegetation, due to its specialized digestive system (including a gizzard). Adult gizzard shad feed on microscopic plants and algae. The blueback herring may no longer inhabit Lake Champlain.

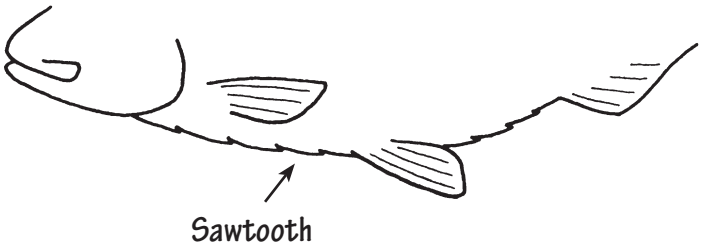


Blueback Herring

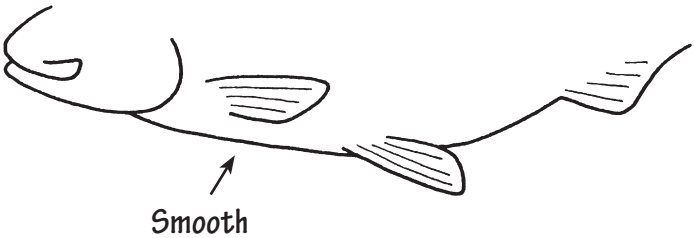


Gizzard Shad

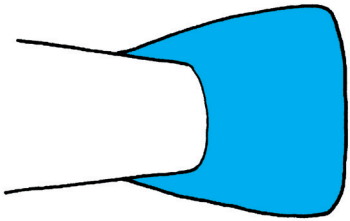
A. Body with sawtooth edge — HERRING



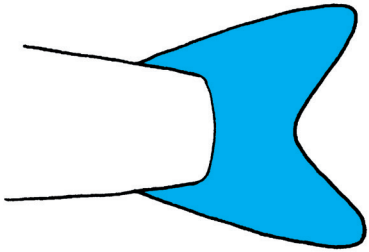
B. Body rounded and smooth — go to 12



A. Tail rounded or nearly square — *go to* 13



B. Tail distinctly forked — *go to* 15

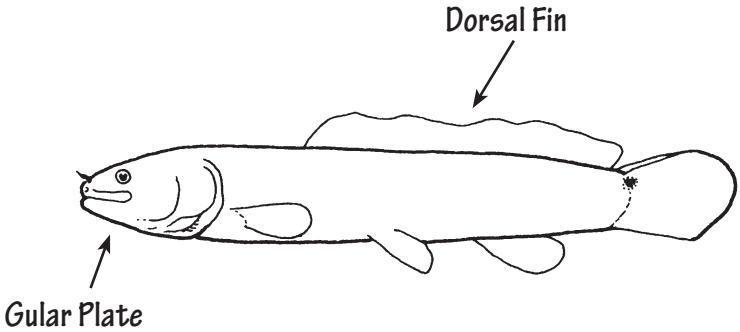


BOWFIN *(Amia calva)*

The bowfin is a very distinct fish; its most striking features are a heavy, almost cylindrical body, an asymmetric rounded tail, a long wavy dorsal fin, and a bullet-shaped head with a thick, broad gular plate between the lower jaws. The gular plate is a flat bone covering the space between the lower jaws. The mouth is well armed with pointed teeth. The bowfin is generally a brownish green color.

The bowfin is a big-water fish, living in the slow parts of larger streams and in lakes where there is abundant vegetation and clear or moderately cloudy water. The bowfin is a rugged predator, eating nearly anything that moves — from insects to crayfish, leeches, frogs and fish. Because the swim bladder of the bowfin is lung-like, the fish can breathe by gulping air at the surface, and can therefore survive in waters with a very low oxygen content.

A. Dorsal fin very long and wavy, bony gular plate present — **Bowfin**



B. Dorsal fin not very long and wavy, gular plate absent — *go to 14*

BANDED KILLIFISH *(Fundulus diaphanus)*

Killifishes are small, soft-rayed fishes with a mouth that is directed somewhat upward and with scales on the top of the head. The banded killifish reaches an average of 3 inches in length. The banded killifish has no lateral line, is generally olive green to tan on its back; its silvery sides show a dozen or more dark vertical bars.

The banded killifish prefers the quiet waters of lakes and ponds. Small schools are usually found in shallows over sand or gravel bottoms where there are patches of submerged aquatic plants. When banded killifish are threatened, they may burrow into sand or gravel. Although the upward mouth position indicates that the banded killifish is a surface feeder, it also feeds at midwater and the bottom. It eats mostly adult aquatic insects.

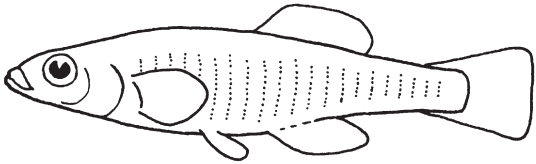
The banded killifish can serve as important food for game fish when it occurs in sufficient numbers. It can also be an important part of the diet of predatory birds such as the kingfisher and merganser.

MUDMINNOWS (Umbridae)

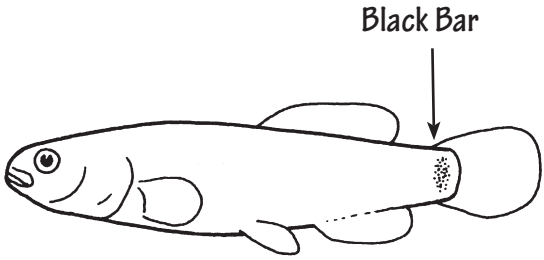
In size and shape, mudminnows resemble killifishes but are darker in color and have more rounded fins. The central mudminnow *(Umbra limi)* is likely the only mudminnow in Lake Champlain, although the eastern mudminnow *(Umbra pygmaea)* may also exist here. The dark vertical bar at the base if the rounded tail fin is apparent on both species. Although minnow-sized (maximum of 5 inches), mudminnows are related to pikes, not true minnows.

Mudminnows are hardy little fish that are very tolerant of low oxygen levels, enabling them to live in areas where there are a lot of decaying plant debris.

A. Body shows numerous vertical dark bands, sharply upturned mouth — KILLIFISH



B. Body has only faint, vertical bands, if any; rounded caudal fin has single black bar at its base — MUDMINNOW



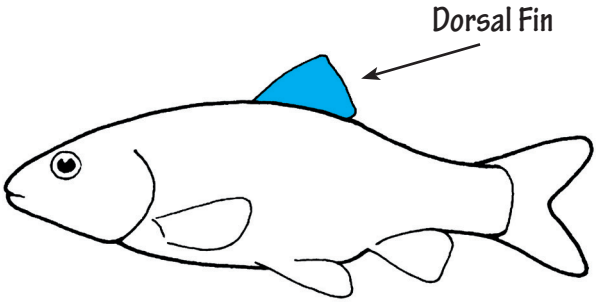
CARP *(Cyprinus carpio)*

The carp has a robust body and reaches a moderately large size of normally 18 inches long and over 20 pounds. The carp is a brassy gold to brown or olive above, shading to silver, white or yellow below. It has large scales and two pairs of barbels at the mouth, the most conspicuous pair being at the corners of the mouth.

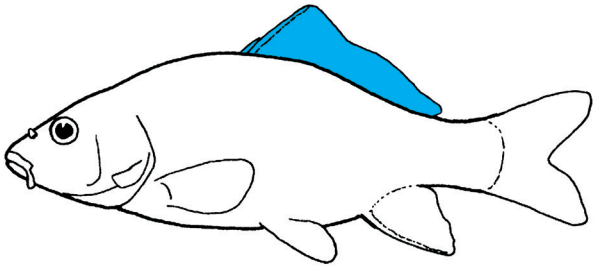
The largest member of the minnow family, the carp has its origins in Asia and Europe, and was introduced to North America in the 1830s in the Hudson River area. The carp is most abundant in large streams or lakes where there is dense aquatic vegetation. It can live in eutrophic waters, and is considered by some to be a nuisance because it uproots vegetation and stirs up the bottom, increasing the turbidity of the water.

The carp spawns when the water is warm, from late spring to early August, and can be seen writhing and thrashing in shallows as spawning takes place. The carp is an omnivore, and is a good food fish that is challenging to catch.

A. Dorsal fin relatively short — *go to 16*



B. Dorsal fin long — CARP



SUCKERS (Catostomidae)

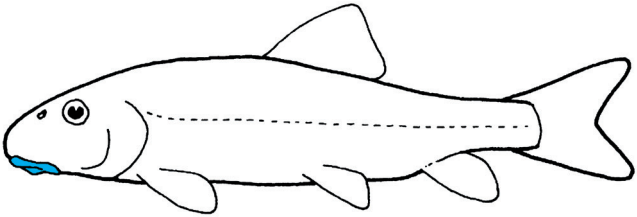
Suckers are related to both catfish and minnow families, all of which possess an intricate set of bones that form highly sensitive hearing. Suckers are sluggish bottom feeders, having fleshy, sucking mouths that slurp up bottom-dwelling organisms as well as dead plants and animals.

The white sucker *(Castostomus commersoni)* is torpedo-shaped, and usually 12 to 20 inches long. In adults, the top and sides are brownish gray to almost black, and lower sides are cream to white. The young (2-6 inches) usually have three large black spots on sides.

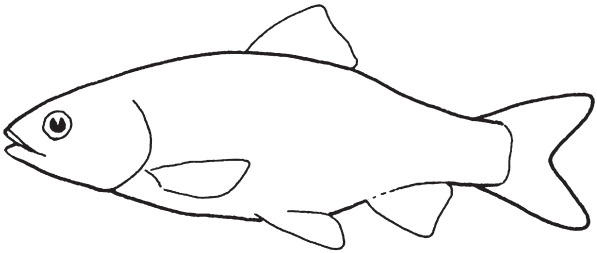
The white sucker usually migrates from lakes into gravelly streams to spawn in the spring. It tends to inhabit warmer, shallower waters, where the young can be very abundant and thus important food for piscivorous (fish-eating) fishes.

The shorthead redhorse *(Moxostoma macrolepidotum)* is not as robust as the white sucker, and is somewhat humped behind the head. The redhorse is brown to olive with coppery reflections on its upper sides, and lower sides are lighter with bronze overtones.

A. Mouth points downward,
sucker-like — SUCKER



B. Mouth points forward, not
sucker-like — *go to 17*

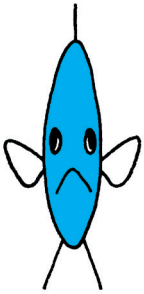


BLUNTNOSE MINNOW *(Pimephales notatus)*

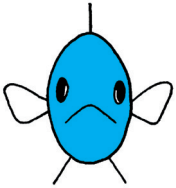
The bluntnose minnow is slender and tubular, with an average length of 2-3 inches. Its head is broad and small, with a blunt snout. The bluntnose minnow is olive-green to brown on its back, and silvery on its sides. The fins have a yellow or olive tint. A dark lateral band extends from the caudal fin to the eye.

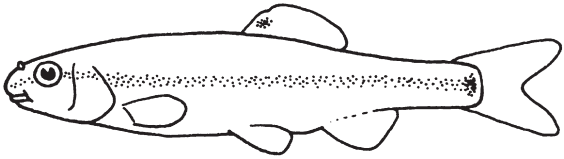
The bluntnose minnow appears to prefer the sandy and gravelly bottoms of clear lakes and ponds, but also lives in streams. It is a bottom feeder.

A. Body of light color, laterally compressed — go to 18



B. Body of dark color, not laterally compressed — Bluntnose Minnow





MOONEYE *(Hiodon tergisus)*

The mooneye resembles the herrings due to its silvery, compressed shape, but is in a separate group of fishes that have large pointed teeth on the tongue and on the roof of their mouth. The mooneye is further distinguished from herrings by the lack of a saw-toothed belly and the presence of a lateral line.

The mooneye has large, silvery to brassy eyes, and a short head and snout. It is pale olive to brown above with silvery sides. The mooneye is usually 10-12 inches in length.

The mooneye lives in large rivers and lakes, apparently selecting clearer waters. It feeds near the surface at night, mostly on aquatic and terrestrial insects.

SHINERS (genera *Notropis, Luxilus,* and *Notemigonus)*

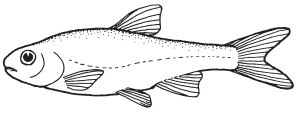
Shiners are small fish in the minnow family, and exist only in fresh water. They are important forage species for predatory fishes.

The spottail shiner *(Notropis hudsonius)* is silvery and usually has a black spot at the base of its tail. Its eyes are very large. This small fish (usually under 4 inches long) schools over sandy or gravelly bottoms with little vegetation.

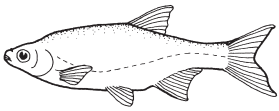
The emerald shiner *(Notropis atherinoides)* (average length, 2-4 inches) is silvery, with blue-green or green irridescence on the back. The young are translucent. The scales are lost even with the most careful handling, resulting in a dark blue or blue-green appearance.

Golden shiners *(Notemigonus crysoleucas)* take on a gold color, often with some orange in the lower fins, as they get older and bigger (up to about 9 inches, though averaging 3-5 inches in length). The body is deep and the lateral line deeply curved. They are usually found in shallow water among weeds.

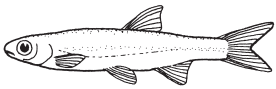
The common shiner *(Luxilus cornutus)* (average length, 2-4 inches) is silvery with bronze tints, darker on its back. Breeding males are brightly colored, with pink or red on fin edges, and a golden stripe on the sides. Breeding males also have bumps on the head (called tubercles).



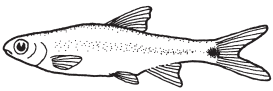
Common Shiner



Golden Shiner

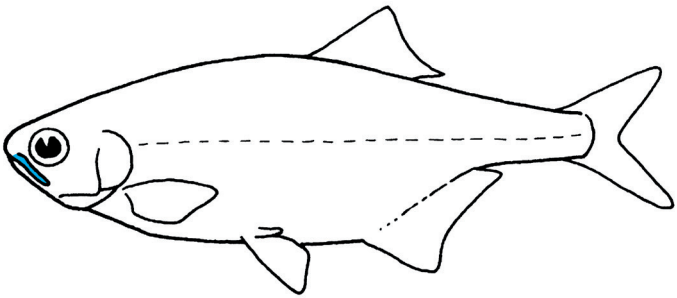


Emerald Shiner

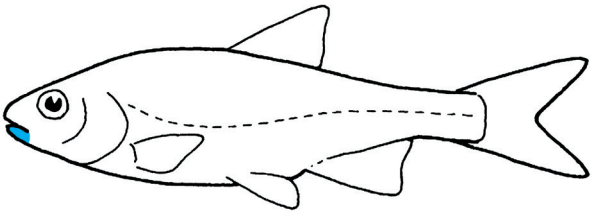


Spottail Shiner

A. Maxillary extends under eye, lateral line relatively straight— MOONEYE



B. Maxillary ends well ahead of eye, lateral line curves — SHINER



TROUT-PERCH *(Percopsis omiscomaycus)*

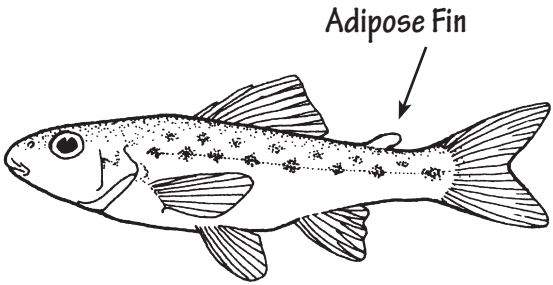
The trout-perch is a small, large-headed fish that takes its name from the fact that it has an adipose fin, like a trout, and spines in the fins, like the perches. It has a distinctive over-hanging snout.

The trout-perch is silvery, often transparent, and has five rows of dark spots, one on the dorsal midline and two on the upper and midsides.

The trout-perch lives in both lakes and streams, usually found over sand or fine gravel. It appears to be a bottom-feeder, depending on insects and insect larvae for its food. It is an important forage fish for larger fishes.

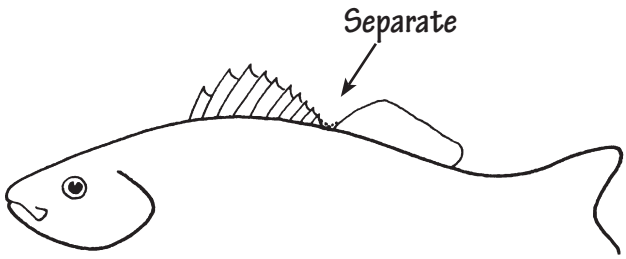
The species name for trout-perch *(omiscomaycus)* is thought to come from an Algonquin name.

A. Adipose fin present,
and large head — TROUT-PERCH

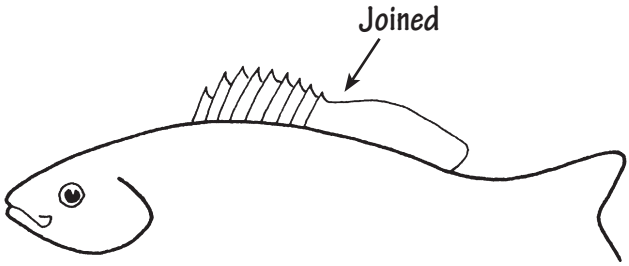


B. Adipose fin absent — go to 20

A. Soft and spiny parts of dorsal fin separate or nearly so — go to 21



B. Soft and spiny parts of dorsal fin fully joined — go to 26



DARTERS (subfamilies Percinae and Etheostomatinae)

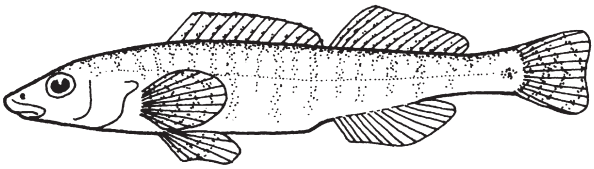
Darters are a small member of the perch family. They generally reach lengths of 2-4 inches, and, like others in the perch family, have separate dorsal fins, the front fin with several spines. Darters thrive in a variety of water environments, both warm and cool.

The tessellated darter *(Etheostoma olmstedi),* once considered a subspecies of the johnny darter, is of pale brown color, sometimes with a yellowish tint, and has about 10 X, W or M marks on its lateral line. Breeding males become very dark. The body is somewhat tubular, and head rounded.

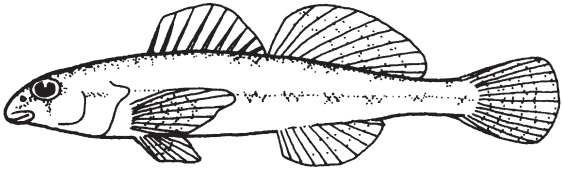
The tessellated darter is largely a bottom-feeder, and is preyed upon by larger fish. It is most common in waters of slow or no current.

The logperch *(Percina caprodes)* has a longer snout and sides that are marked with about a dozen vertical bars. It is a yellowish green to olive color, and has a black spot at the base of its caudal fin.

The logperch tends to stay offshore in water deeper than 3-4 feet, and thus often escapes seine nets. The logperch feeds on insect larvae, and is known to use its snout to roll aside rocks or other objects on the bottom while it searches for food.

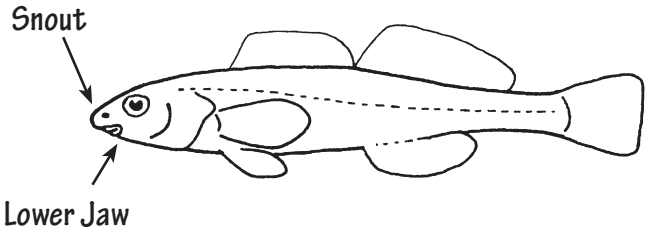


Logperch

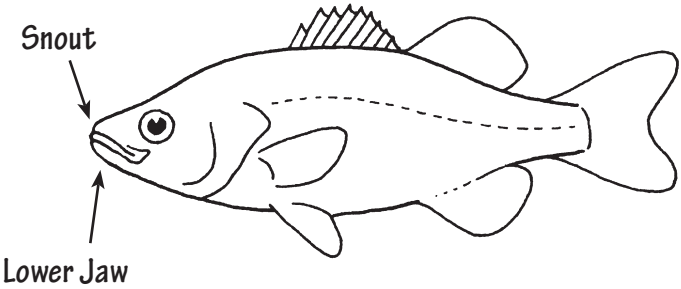


Tessellated Darter

A. Body as thick as deep, snout extends past lower jaw, fish often lies on bottom — DARTER



B. Body not as thick as deep, lower jaw extends to or beyond snout — go to 22



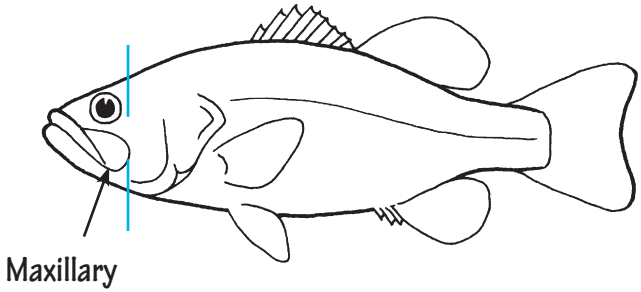
LARGEMOUTH BASS *(Micropterus salmoides)*

The basses, sunfish and crappies are all in the sunfish family. The largemouth bass is a moderately large fish, and is one of the most popular freshwater sport fishes in the United States.

The largemouth bass is bright green to olive on its back, with sides usually lighter green to golden-green. The young have a dark band along the lateral line. The largemouth bass averages 8-15 inches, but can reach 24 inches and weigh as much as 9 pounds.

The largemouth bass lives in the upper levels of warm, shallow lakes and slow rivers. It prefers weedy areas with soft bottoms, feeding at the surface at night and morning, and lower in the water during the day.

A. Maxillary extends well past eye — Largemouth Bass



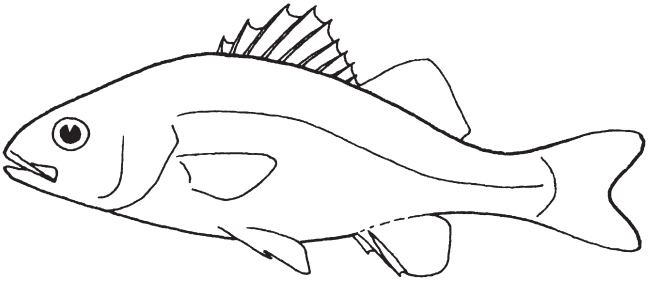
B. Maxillary does not extend past eye — go to 23

WHITE PERCH *(Morone americana)*

The white perch is a relative newcomer to Lake Champlain, apparently having migrated through the Champlain Canal, and thus more abundant in the South Lake. Fisheries biologists have concerns that the white perch is crowding out native species such as the yellow perch and walleye.The white perch, although of similar size and habits to the yellow perch, is not classified in the perch family, but rather in the temperate bass family.

The white perch has a deep, laterally compressed body, usually 5-8 inches in length. Its color is a silvery green or grey, with no bars or markings on sides.

A. Body color silvery — WHITE PERCH



B. Body color yellowish or brownish— *go to 24*

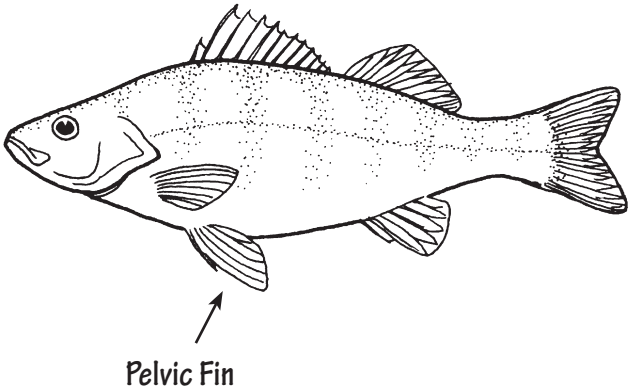
YELLOW PERCH *(Perca flavescens)*

The yellow perch is a common freshwater fish, inhabiting a vast area and living in a variety of habitats. Yellow perch is popular for eating, but is generally smaller than trouts and basses and other sport fish. Adults average 6-10 inches in length.

The yellow perch usually has yellow sides with olive green verical bars, and bright orange or reddish margins on its pelvic and anal fins. Although the yellow perch can be confused with the young walleye, the latter has visible canine teeth in the jaw and no red markings on its fins.

Yellow perch often travel in schools in lakes or rivers, and are most abundant in the open water of lakes with moderate vegetation. The yellow perch feeds on a variety of foods including fish eggs and small fish, remaining active in the winter. It is preyed upon by larger fish as well as water birds such as gulls and kingfishers.

A. Pelvic fins reddish — YELLOW PERCH



B. Pelvic fins not reddish — *go to 25*

SAUGER *(Stizostedion canadense)*

The sauger is an almost tubular fish averaging 10-16 inches in length. It greatly resembles the walleye, but has spots on its spiny dorsal fin and is generally smaller.

The sauger is usually sandy or dull brown, with darker brown circle-like markings.

Like the walleye, the sauger prefers turbid water (although it can be found in clear lakes, usually hugging the bottom), and avoids too much light. Saugers are sight predators feeding on a variety of fishes and invertebrates such as gizzard shad and trout-perch, leeches and insects.

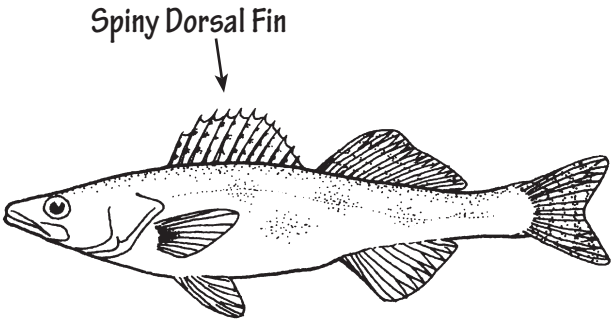
WALLEYE *(Stizostedion vitreum)*

The walleye is highly sought by anglers, but its population has been in decline on Lake Champlain in recent years. It is very similar to the sauger, and in the same genus.

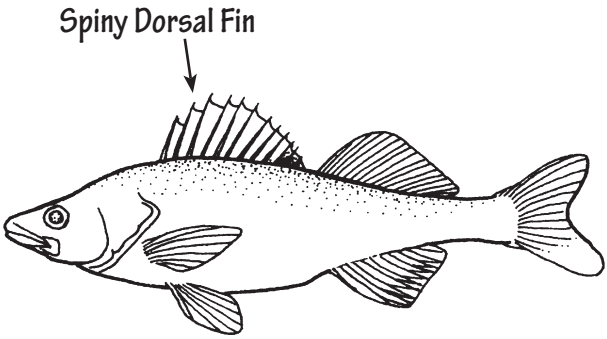
The walleye is in the perch family, but is generally larger than the yellow perch. The walleye averages 13-20 inches in length when mature. It has a long snout and mouth, and glassy-looking eyes (whence comes its Latin name "vitreum" as well as its common name "walleye"). The walleye's color varies greatly depending on habitat, but is generally olive-brown with golden tints or highlights.

The walleye is tolerant of a range of environments, appearing to reach greatest abundance in large, shallow, turbid lakes, of which South Lake Champlain is a prime example. The walleye feeds on other fishes including yellow perch and sheepshead, and is highly cannibalistic if these forage fishes are not present.

A. Spiny part of dorsal fin with rows of black spots — SAUGER



B. Spiny part of dorsal fin without spots, but with single dark blotch between last 2 or 3 spines — WALLEYE



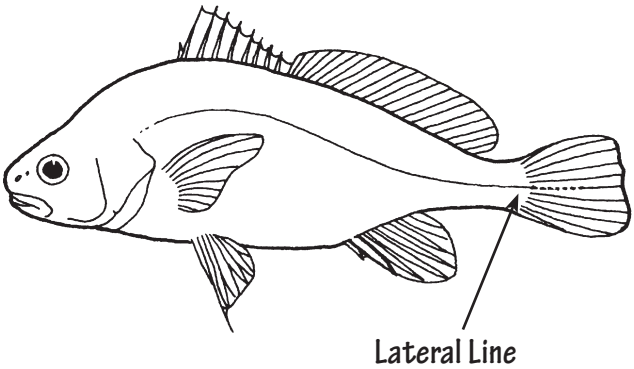
SHEEPSHEAD, or FRESHWATER DRUM *(Aplodinotus grunniens)*

The drums are in a distinct family of fishes that are heavy-bodied and compressed laterally. The drums' lateral line extends throughout the length of the caudal fin. The name drum comes from the fishes' ability to make sounds using the swim bladder as a resonating chamber (and "grunniens" means grunting).

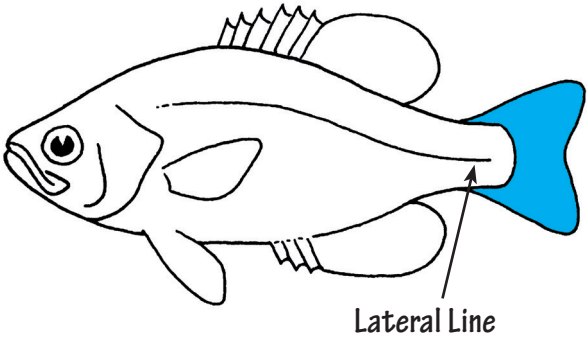
The sheepshead has a unique shape that is partly characterized by a steep rise from its head to its dorsal fin. It is generally silvery in color, and averages 18-20 inches in length.

The sheepshead inhabits large, shallow bodies of water, appearing to prefer clear water, but able to adapt to turbid waters as well. The sheepshead is largely a bottom-feeder, and is well adapted to eating mollusks, because its mouth is particularly suited to crushing their shells.

A. Lateral line extends to tip of caudal fin, tail rounded — SHEEPSHEAD



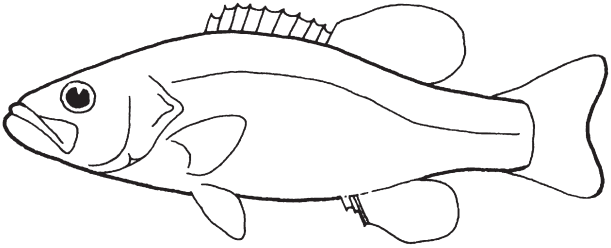
B. Lateral line ends before caudal fin, tail forked — go to 27



SMALLMOUTH BASS *(Micropterus dolomieui)*

In appearance, the smallmouth bass differs from the largemouth bass in that its maxillary does not extend past its eye, and it has a shallower downward curve where the two dorsal fins meet. The smallmouth bass has about 10 vertical bars, sometimes vague, and also dark bars radiating backwards from the eyes.

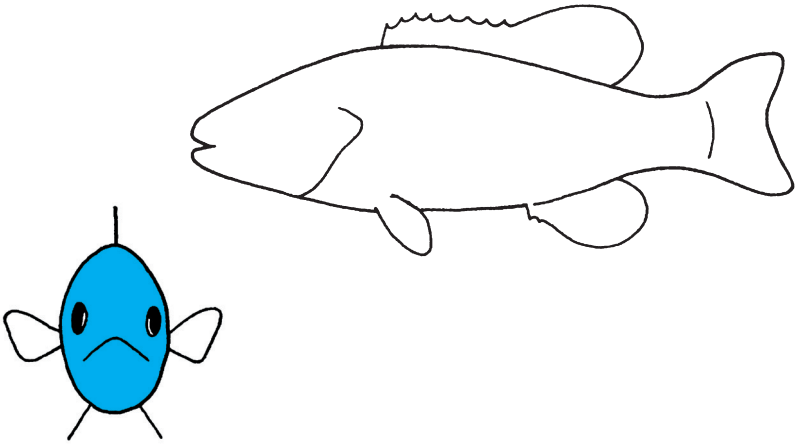
The habitat of the smallmouth bass and largemouth bass seldom overlap, the smallmouth bass preferring rocky, and sandy areas of lakes and rivers. The smallmouth also retreats to deeper, cooler water in the heat of the summer. The feeding habits, however, are similar: from the surface to the bottom.



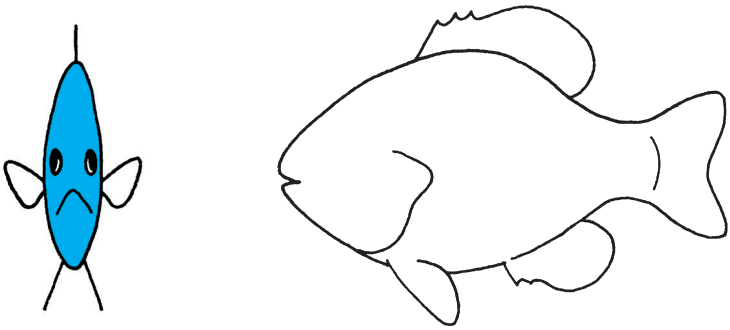
Smallmouth Bass

A. Body long, thick from side to side

— Smallmouth Bass



B. Body short and deep, thin from side to side — go to 28



CRAPPIES *(Poxomis)*

The crappies are in the sunfish family, but have more pointed opercles (ear flaps) and more compressed bodies than other sunfish. Until recently, it had been thought that only the black crappie *(Poxomis nigromaculatus)* is present in Lake Champlain, but the white crappie *(Poxomis annularis)* as well has been identified in the lake.

The body of the black crappie is silvery with patches of dark scales in an irregular pattern. The white crappie is also silvery, somewhat paler on its back, and often with vertical bars.

The white crappie occurs in lakes, ponds, and lower parts of rivers, and tolerates turbid water. The black crappie is less tolerant of turbidity and silt, and is more apt to be found in clear water with abundant vegetation.

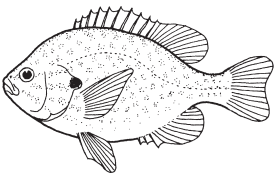
SUNFISHES (genera *Lepomis* and *Ambloplites)*

The sunfishes are in a large family (including crappies and the non-temperate basses as well as sunfishes) that includes some of the most colorful North American warmwater fishes.

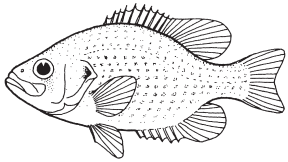
The rock bass *(Ambloplites rupestris)* is less laterally compressed than the bluegill *(Lepomis macrochirus)* or pumpkinseed *(Lepomis gibbosus),* and usually has more spines on its anal fin. It averages 6-10 inches in length and is generally a golden brown to olive color. The rock bass prefers rocky areas of lakes and lower reaches of streams.

The pumpkinseed is very deep-bodied and laterally compressed, usually 7-9 inches in length, and similar color to the rock bass, although its sides can have spots of orange or red, and with blue or green reflections. Its opercle (gill cover) is covered with turquoise lines and its opercular flap (like an ear flap) is bright orange or red at its tip. The pumpkinseed is found usually in weedy bays.

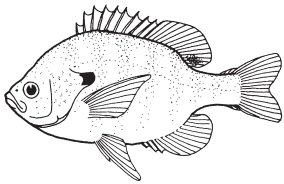
The bluegill is very closely related to the pumkinseed, and the two species sometimes hybridize. Its color ranges from yellow to dark blue, and its sides usually have 6 to 8 vertical bars. The opercular flap is black at its tip, and blue near the gills.



Pumkinseed

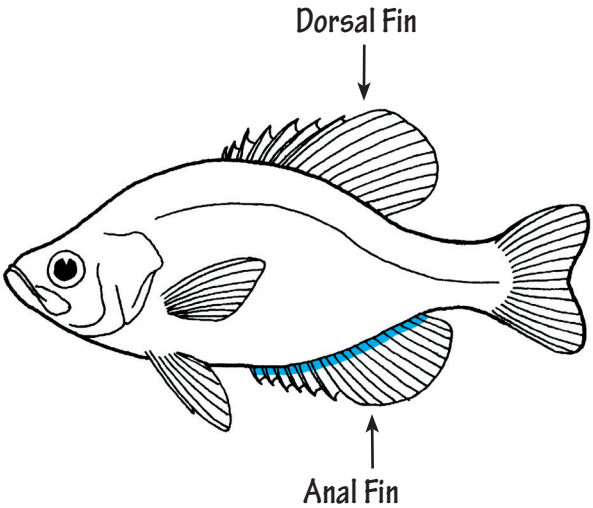


Rock Bass

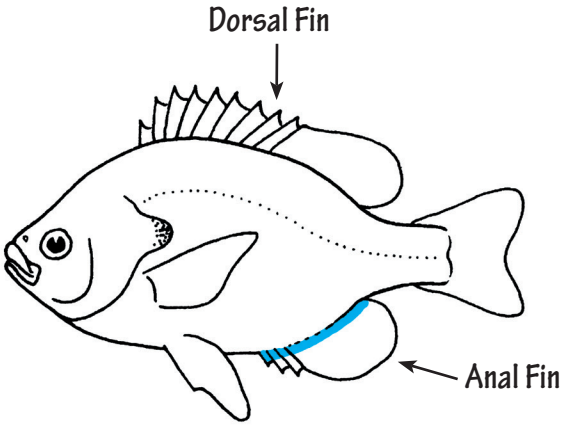


Bluegill

A. Base of dorsal fin about equal in length to base of anal fin — CRAPPIE



B. Base of dorsal fin much longer than base of anal fin — SUNFISH



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