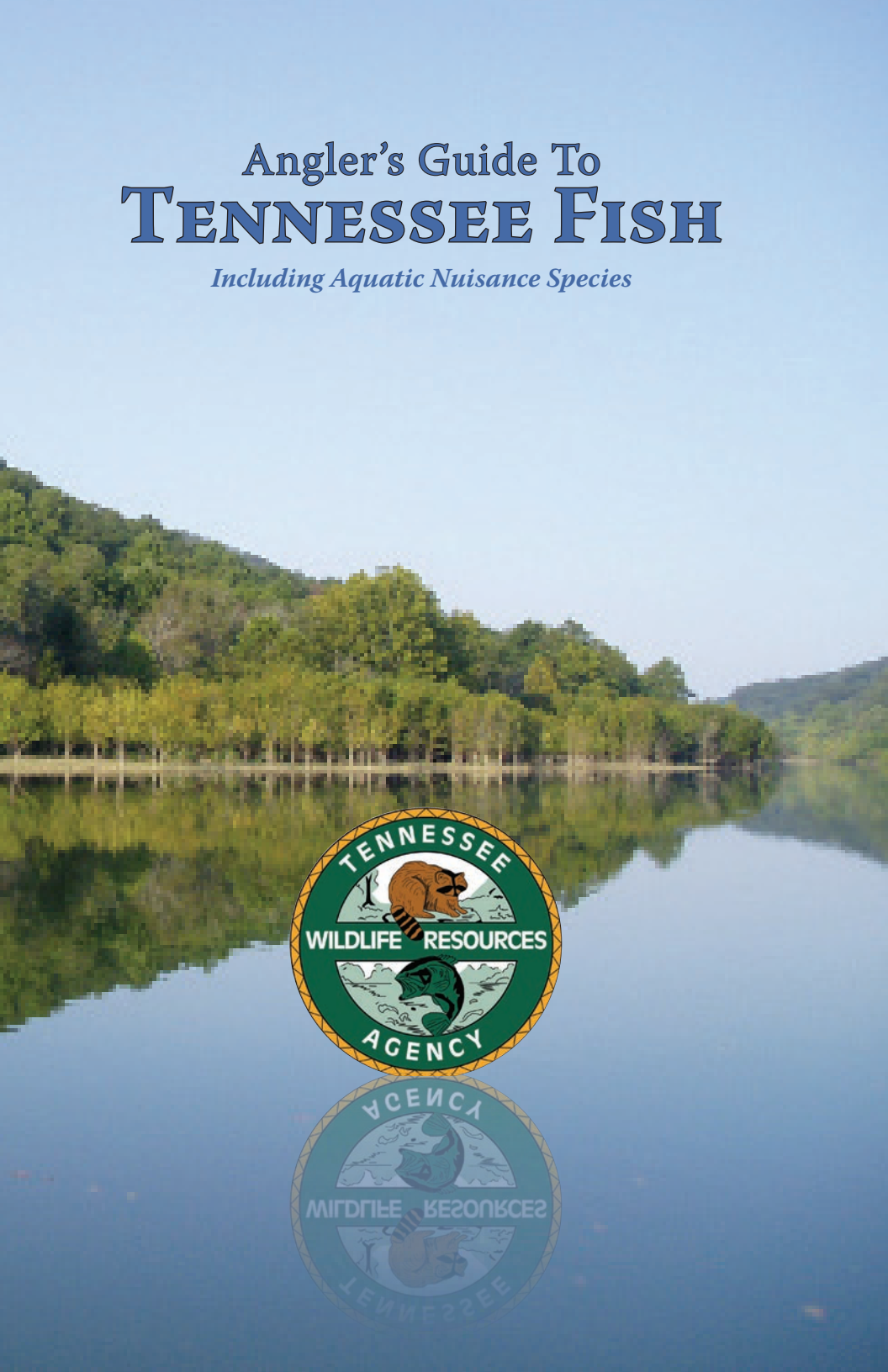
Angler's Guide To
Tennessee Fish

Including Aquatic Nuisance Species



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Dedicated to the prevention and control of aquatic nuisance species

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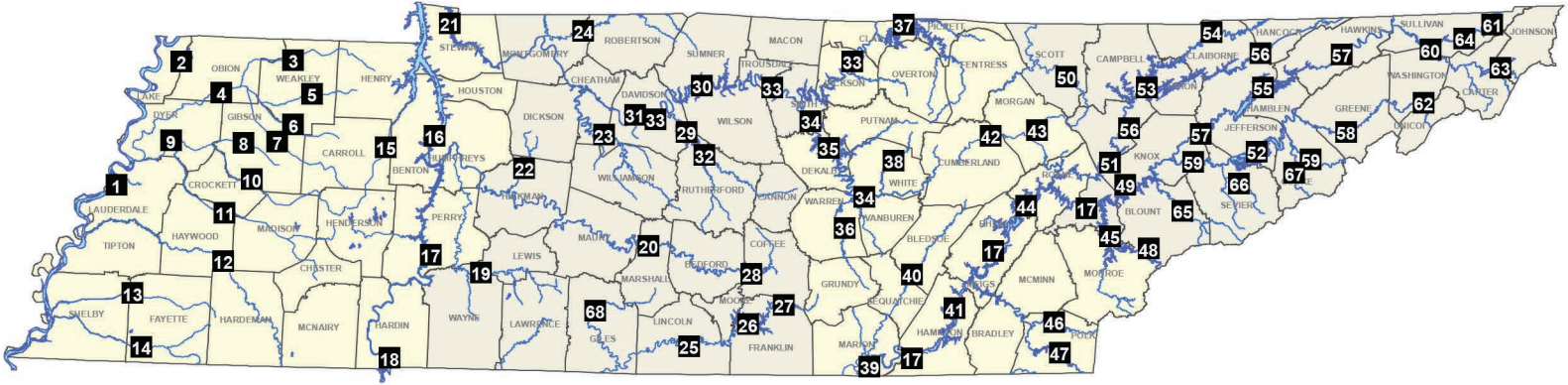
Major Lakes, Reservoirs & Rivers



Region I

Number	Name
1	Mississippi River
2	Reefoot Lake
3	North Fork Obion River
4	Obion River
5	Middle Fork Obion River
6	South Fork Obion River
7	Rutherford Fork Obion River
8	North Fork Forked Deer River
9	Forked Deer River
10	Middle Fork Forked Deer River
11	South Fork Forked Deer River
12	Hatchie River
13	Loosahatchie River
14	Wolf River
15	Big Sandy River
16	Kentucky Reservoir
17	Tennessee River
18	Pickwick Reservoir
21	Lake Barkley

Region II

Number	Name
19	Buffalo River
20	Duck River
22	Piney River
24	Red River
23	Harpeth River
25	Elk River
27	Woods Reservoir
26	Tims Ford Reservoir
28	Normandy Reservoir
29	J Percy Priest Reservoir
30	Old Hickory Reservoir
31	Cheatham Reservoir
32	Stones River
33	Cumberland River
34	Caney Fork River
68	Richland Creek

Region III

Number	Name
35	Center Hill Reservoir
36	Collins River
37	Dale Hollow Reservoir
38	Calf Killer River
34	Caney Fork River
39	Nickajack Reservoir
40	Sequatchie River
41	Chickamauga Reservoir
42	Obed River
43	Emory River
44	Watts Bar Reservoir
17	Tennessee River
48	Chilhowee Reservoir
46	Hiwassee River
17	Tennessee River
33	Cumberland River
47	Ocoee River

Region IV

Number	Name
45	Tellico Reservoir
49	Fort Loudon Reservoir
50	Big South Fork Cumberland River
51	Melton Hill Reservoir
52	Douglas Reservoir
53	Norris Reservoir
54	Powell River
55	Cherokee Reservoir
56	Clinch River
57	Holston River
58	Nolichucky River
59	French Broad River
60	Boone Reservoir
61	South Holston Reservoir
62	Davy Crockett Reservoir
63	Watauga Reservoir
64	South Holston River
65	Little River
66	Little Pigeon River
67	Pigeon River

Introduction

Tennessee has one of the most diverse assemblages of fish in North America with at least 320 species. Of these, approximately 285 species are considered native to Tennessee. The non-native species found in Tennessee were either intentionally introduced for food, bait, sport fishing, vegetation control, or accidently introduced by an angler's bait bucket release, boat and trailer, aquarium release, or movement from surrounding states.

The waters of Tennessee offer opportunities for anglers of all ages, experience and interests. With 29 major reservoirs, 19,000 miles of warm and cold water streams, and thousands of smaller lakes and ponds, anglers in the Volunteer State have places to wet a line year-round.

To help identify their catch, the Tennessee Wildlife Resources Agency (TWRA) offers this convenient identification guide covering as many as 100 species or subspecies, including aquatic nuisance species that are currently present in the state or may be found in the future. Each species is depicted in a photograph with most having a description of their preferred foods and habitat. It should be noted that listed state record fish weights are for sportfishing methods and are subject to change. If an angler catches a fish exceeding the weight listed, the angler should contact the TWRA regional office in the area the fish was caught. The most updated version of this guide, and the state record fish list is available at the TWRA's website **(tnwildlife.org)**.

Although some of the fish species on the following pages are very familiar (bass, crappie and catfish), most anglers will not encounter the other species described. Only 12 percent of the 320 species of fish found in Tennessee are considered game fish, while the remaining 88 percent are non-game fish. If help is needed in identifying fish you encounter, contact one of the TWRA offices listed on page 74.

Throughout the guide, many of the species have "other name(s)" listed in addition to the common name. These are names which have been given to the species by anglers over time and are listed here only for historical information and to help bridge the communication gap between fisheries biologists and anglers.

Before you head to the water to fish however, be sure to stop by the nearest TWRA regional office or a license agent to buy a fishing license. Your fees go toward fisheries management programs that help ensure your future recreational fishing opportunities. Request a free copy of the current *Tennessee Fishing Guide* when you purchase your fishing license. You can also find the guide on the TWRA website.

Remember: If you fish on private property, you must obtain permission from the owner. Whether that favorite fishing hole is on private or public land, be a responsible resource user. Please do not leave trash along our waterways, including fishing line. Do not dump unused bait in the water; instead, drain your bait bucket on land or dispose of bait in the trash. Bait from bait dealers can contain invasive species. Also report all littering violations and any suspected illegal dumping into Tennessee's waters. After all, water is one of our most important resources as both humans and fish depend on it for their survival. Following these simple rules will help ensure that we all may enjoy our natural resources for generations to come.

About Fish

Lateral line: Nerve endings along a row of sensory pores on either side of a fish from the gills to tail act as "radar," allowing the fish to detect the size, shape, direction and speed of objects.

Touch: Fish can detect minute temperature differences and can discriminate between hard and soft baits. Fish are more likely to hold a soft bait longer.

Hearing: Water conducts sound better than air, and fish hear directly through the bones in their head, therefore noise on the bank, dock or even in a boat may spook fish.

Taste: Most fish do not rely on taste, but catfish and bullheads have taste buds over their entire bodies and fins, including their barbels (whiskers), which help them locate food.

Smell: Fish have nasal sacs (nares) to help detect odor. Night feeders, or fish that live in muddy water, have a highly refined sense of smell.

Sight: Most fish lack eyelids and cannot adjust the diameter of the eye's pupil. Therefore they tend to avoid brightly lit areas. They can detect colors but their perception of color is affected by water depth and clarity.

Fish are cold-blooded, which means that their body temperatures are about the same as their surrounding environment. Because they don't produce body heat, fish must find and remain in preferred water temperatures.

A fish's streamlined shape helps it move through the water. The water also helps "float" fish; many species can make themselves lighter or heavier in the water by increasing or decreasing the amount of gas in their swim bladder.

A fish swims by alternately contracting muscles along each side, which causes its tail (caudal fin) to sweep and propel the fish forward. The pectoral and pelvic fins assist with forward and backward movement, provide stability and steering, and help the fish brake (stop).

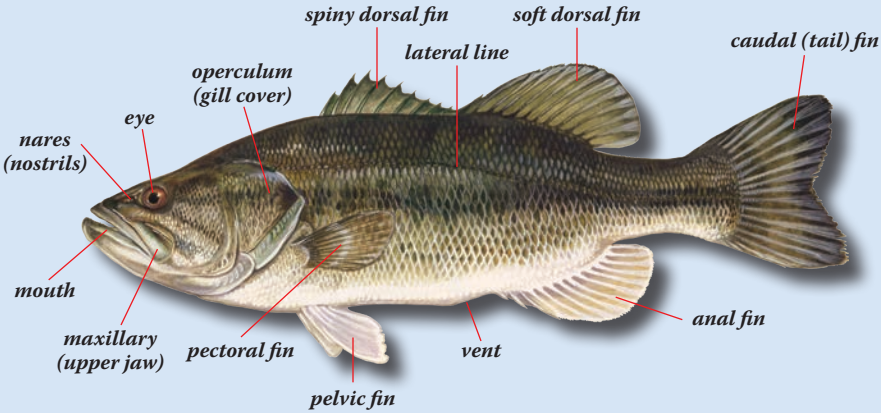
Fish markings usually serve as camouflage. Fish that are found near rocks or weeds often have blotches or bars on their sides. Many fish are dark on top and light underneath, making them more inconspicuous when viewed from above or below.

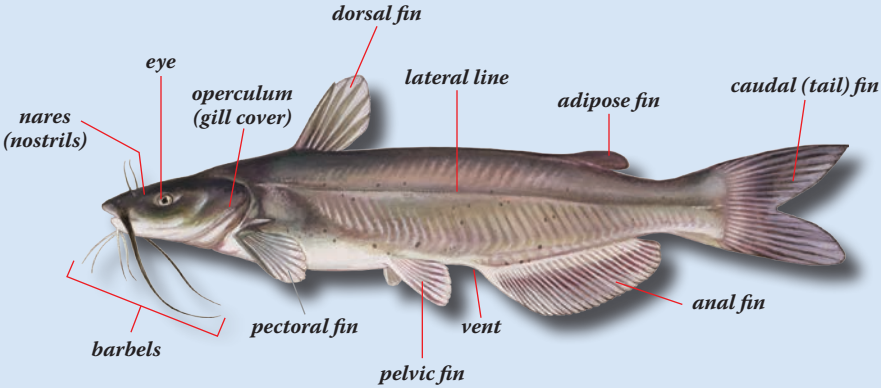
Most fish have scales, which are embedded into the skin and are arranged in overlapping rows. Scales may be thick and tough, as in sunfish, or extremely small, as in trout. Catfish, eels and paddlefish have a tough skin instead of scales. Growth marks on scales, spines, and otoliths can reveal the age of a fish, just as tree rings show the age of a tree.

The life span of most of our gamefish is about 4-10 years, but some live much longer. Fish continue to grow in length and girth as they get older.

Many fish swim in groups or schools. Solitary fish may concentrate when a feeding opportunity presents itself. Some fish wander constantly in search of food while others have narrowly defined home ranges and wait for food to come close enough to ambush.

Fish often make regular daily movements between feeding and resting places, seasonal movements to summer and winter habitat and annual movements to traditional spawning areas. Many species travel long distances to spawn. Spawning activity concentrates some species of fish and makes them easier to find.





Black Bass

The term, black bass, refers to several species of bass in Tennessee including smallmouth, largemouth, spotted, redeye (Coosa) and the recently recognized Alabama bass. Although several species of black bass may live together in the same waters, they prefer somewhat different habitats. Smallmouth bass prefer the clearer, cooler portions of the reservoirs or the swift runs of streams, while largemouth bass prefer warmer, often more turbid parts of the reservoir with ample cover in the form of brush, stumps and similar obstructions. Spotted bass are usually more associated with the smallmouth bass and prefer rocky areas. The spotted bass and largemouth bass are very similar, but there is one good way to tell them apart. Look at the fish's upper jaw (maxillary) when the mouth is closed. If the jaw extends behind the fish's eye, it is a largemouth bass (see page 6). If the jaw does not extend behind the eye, you have one of the other black bass species. Interestingly, none of these black bass are actually true bass. They are really members of the sunfish family, along with bluegill, crappie, and most other panfish species. Nevertheless, almost anytime anglers mention bass or bass fishing they are most likely talking about these species.

Black bass hybrids can occur naturally or be produced in a hatchery. Hatcheries experimented with a cross of the largemouth and smallmouth bass in years past and this was the original "mean-mouth" bass. In the natural environment, largemouth and smallmouth bass occupy different habitats and have different spawning times, so natural hybrids of these two species rarely occur. However, the habitat use and spawning times of smallmouth bass and spotted bass can overlap, and hybrids of these two species, while still rare, do occur in Tennessee. While not the original "mean-mouth," the smallmouth/spotted bass hybrid has acquired this name over time from anglers.

While most anglers may never encounter this hybrid, it is important to note that an odd looking smallmouth or spotted bass may not necessarily mean it is a hybrid. To avoid any potential size restriction issues, anglers should obey the smallmouth bass size limit (the most restrictive) if they decide to harvest what they think is a hybrid or "mean-mouth" bass.

Alabama Bass *(Micropterus henshalli)*
Other names: Alabama spotted bass, Alabama spot, spot

David Roddy

Until recently, the Alabama bass was considered a subspecies of the spotted bass *(Micropterus punctulatus)*, sometimes known as the Northern, or Kentucky spotted bass, and was called the "Alabama spotted bass" *(Micropterus punctulatus henshalli)*. Based on the latest taxonomic research, the American Fisheries Society (AFS) in 2011 recognized the latter as a separate species, the Alabama bass. Based on that research, the only way to tell the difference between the species is by genetic testing.

In Tennessee, the Alabama bass currently occurs in the southeastern part of the state, within the Parksville Lake/Ocoee River watershed. It has also extended its range westward towards the Tennessee River and Watts Bar Reservoir. While the TWRA did not stock this species, it is believed they were illegally stocked by anglers into the previously-mentioned watershed since the Alabama spot was originally found only in the Alabama/Mobile River system. As such, it is considered a non-native species in Tennessee.

Although the habitat and behavior of both the Alabama bass and spotted bass are very similar, (flowing water, clay-gravel bottoms, deeper water, and hanging out away from the shoreline), the Alabama bass has a growth advantage over our native spotted bass and commonly obtains weights over 4.5 pounds. The state record is 7 pounds.

Smallmouth Bass *(Micropterus dolomieu)*
Other names: bronzeback, smallie, brown bass, brownie

Brian James

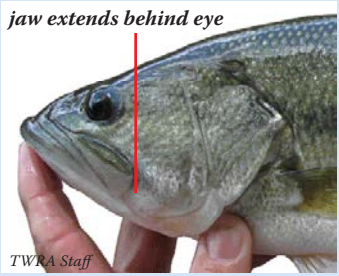
Smallmouth bass can be found in clear, rocky, fast-flowing streams with riffles, pools, and large rocks. These streams should have gravel-rubble bottoms and water temperature should not exceed 90 F in summer. They are also found in most large reservoirs near ledges and rocky areas where the water is usually clear. Spawning activity begins when water temperatures are 60-65 F, generally earlier than other black bass.

They feed on a variety of fishes and invertebrates, such as sunfish, shad, shiners, suckers, tadpoles and crayfish, as well as the nymphs of dragonflies, damselflies, stoneflies, mayflies, and dobsonflies (hellgrammites).

Smallmouth bass are found mainly from Kentucky Reservoir eastward to the lower slopes of the Great Smoky Mountains. They are abundant in some areas and rare in others. The average smallmouth bass caught by anglers is 14-18 inches with a range of 8-22 inches. Tennessee has the recognized world record at 11 pounds, 15 ounces. The smallmouth bass is the official state sport fish.

Largemouth Bass *(Micropterus salmoides)*
Other names: Northern largemouth, bigmouth bass, bucketmouth, green trout

Brian James



TWRA Staff

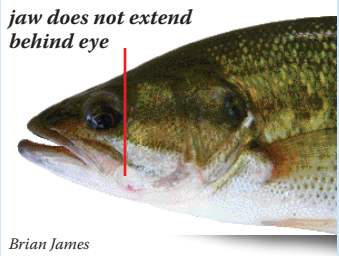
Largemouth bass prefer calm, warmer waters in rivers, lakes, reservoirs, and ponds, and are often found near aquatic vegetation. They also prefer cover, such as fallen trees, brush and stumps. They are carnivores, eating insects, frogs, crayfish, minnows, sunfish, and shad. They sometimes feed on land animals such as mice and snakes. Spawning activity begins when water temperatures approach 62-65 F.

Largemouth bass are found throughout the state except in the highest elevations of East Tennessee. They are common to abundant in most of their range. The average harvested size from reservoirs is approximately 15 inches with most between 8 and 24 inches in length. The state record is 15 pounds, 3 ounces, which was a Northern/Florida hybrid, and 12 years old.

Two subspecies of largemouth bass occur in Tennessee. In addition to the one previously described, sometimes referred to as the "Northern" largemouth bass, the Florida largemouth bass *(Micropterus salmoides floridanus)* is also present in the state. In an effort to increase the average size of largemouth bass in Tennessee and to satisfy the angler's desire for larger fish, the Florida strain has been stocked in Tennessee waters for the past 20 years.

Research is ongoing to determine impacts and growth of Florida largemouth bass stockings in Tennessee. Unfortunately, genetic testing must be conducted to determine if a largemouth bass is a Northern or Florida strain, as they are very similar in appearance.

Spotted Bass *(Micropterus punctulatus)*
Other names: Kentucky bass, Kentucky spotted bass, spot, lineside, Northern spotted bass



Brian James

Spotted bass are found in large, cool, slower streams and rivers. They are also found in most larger reservoirs and their preferred habitat is quite similar to smallmouth bass in that they show a preference for rocky areas.

Spotted bass feed on crayfish, shad, and aquatic insects and are found throughout the state except in the higher elevations in East Tennessee. They are plentiful in parts of their range and scarce in others. The harvest size from reservoirs averages approximately 13 inches and the range is 8-18 inches in length. The state record is 6 lbs., 1 oz.

Until recently, the spotted bass consisted of two subspecies, the spotted bass *(Micropterus punctulatus)*, sometimes known as the Northern or Kentucky spotted bass, and the Alabama spotted bass *(Micropterus punctulatus henshalli)*. The latest taxonomic research (2011) recognizes the latter as a separate species, the Alabama bass *(Micropterus henshalli)*, also known as the "Alabama spot". See species account for Alabama bass on page 4.

Redeye Bass *(Micropterus coosae)*
Other name: Coosa bass

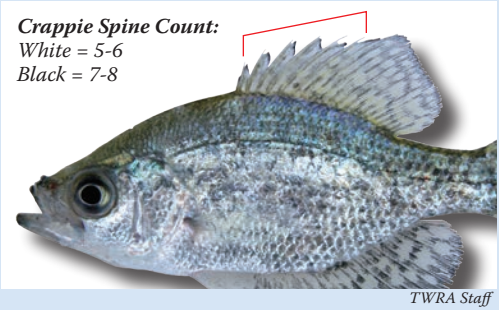
TWRA Staff

Redeye bass are native to the Conasauga River system in extreme Southeast Tennessee. Commonly called Coosa bass, this true redeye bass is quite different from the rock bass which many people also call a "redeye." Coosa bass have been stocked in streams on the Cumberland Plateau and in some Highland Rim streams, where they have established natural populations. In areas where they exist, they usually occupy the smaller headwater streams during the summer months, but move downstream during the colder seasons.

Redeye bass feed largely on terrestrial insects, but also consume crayfish, fish eggs, salamanders and aquatic insects. These bass are found in isolated areas and are uncommon in all but the eastern half of Tennessee. They seldom exceed 12 inches in length and most are between 6-8 inches. The state record is 1 pound, 15 ounces.

Crappie

Both white and black crappie live in ponds, lakes, reservoirs and low-gradient streams and rivers. They are found throughout Tennessee, except in higher elevation in the East. They concentrate around brush, fallen trees and stumps, and feed on insects, freshwater shrimp, amphipods and small fish. Although both are common in their Tennessee range, white crappie is more abundant. To help distinguish between the white and black crappie, count the spines (sharp and pointed) at the beginning of the dorsal fin. White crappie have 5-6 spines and black crappie have 7-8 spines.



TWRA Staff

Black Crappie *(Pomoxis nigromaculatus)*
Other names: papermouth, stubnose, speckled perch, speck, calico bass, slab

Eric Ganus

Brian James

Blacknose crappie

Black crappie are found in quiet, warm waters, and are often associated with aquatic vegetation and sandy to muddy bottoms. They have irregular, dark speckles on each side and seven or eight spines in the dorsal fin. They are less common that white crappie, statewide.

In the spring, they eat more bottom-dwelling insects than white crappie. Larger individuals feed on fish, also. In size, the normal range is 6-14 inches in length and most harvested black crappie average around 11 inches in Tennessee. The state record is 4 pounds, 4 ounces.

The blacknose crappie is a black crappie that has a distinctive black stripe running from the top (dorsal) fin to the tip of the nose (see insert picture). It is a genetic variation of black crappie and is not a hybrid or subspecies. They occur naturally in West Tennessee, but have been stocked into several other waterbodies across the state since the late 1980s.

White Crappie *(Pomoxis annularis)*
Other names: papermouth, speckled perch, white perch, sac-a-lait, slab

Eric Ganus

White crappie are found in streams, lakes and slow-moving areas of large rivers. They also thrive in small lakes and reservoirs. They are more tolerant of muddy waters than black crappie.

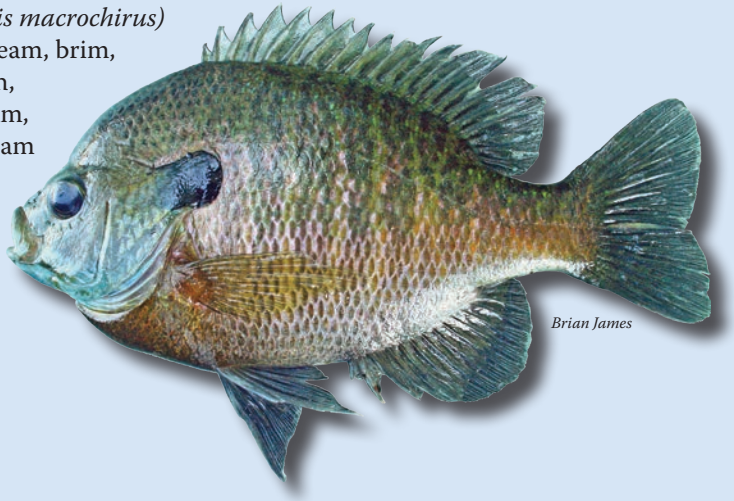
White crappie have distinctive dark vertical bars and have five or six spines in the dorsal fin. White crappie males often become much darker during the spawning season and at that time are often misidentified as black crappie.

White crappie feed on insects, freshwater shrimp, amphipods and small fish. They are abundant in their range and the average length for white crappie is normally 6-14 inches, the same as that of black crappie. The state record for white crappie is 5 pounds, 1 ounce.

Sunfishes

This section contains "bluegill" or "panfish." Sometimes called bream, they are often incorrectly referred to as perch. Also, many people refer to any small sunfish seen or caught as a bluegill even though it actually may be a redear sunfish, green sunfish, bluegill or other sunfish species. Other fish in the sunfish family (black basses and crappie) were covered previously in this guide. All sunfish have similar food habits, living chiefly on insects, crustaceans and small fish.

Bluegill *(Lepomis macrochirus)*
Other names: bream, brim, sunfish, sunperch, redbreasted bream, coppernosed bream


Brian James

Bluegill inhabit quiet, shallow, reasonably clean, warm lakes, ponds, and reservoirs as well as slow-flowing rivers and creeks containing aquatic vegetation with sand, mud, or gravel bottoms. Bluegill can live in most waters but are uncommon in trout streams. Insects are their principal food. Bluegill spawn in shallow water and their beds are shallow depressions, usually grouped together. Bluegill spawn late into summer.

Bluegill are found throughout Tennessee except in the higher elevations of the eastern mountains. They are common throughout this range and are the most common sunfish in the state. The average length of bluegill harvested in Tennessee is 7 inches and the range is 4-11 inches. The state record is 3 pounds.

Redear Sunfish
(Lepomis microlophus)
Other names: shellcracker, stumpknocker, chinquapin, bream

Mike Bramlett

Redear sunfish prefer warm, clear, non-flowing waters containing vegetation, stumps, logs and other cover, and are common in farm ponds, lakes, and reservoirs. Their main food items are aquatic snails (giving them the common name of "shellcracker"), midge larvae, amphipods, and mayfly, damselfly, and dragonfly nymphs. Other foods are zooplankton, fish eggs, and crayfish. The feeding habits of redear do not differ significantly from bluegill, except redear sunfish eat more snails. In addition, redear sunfish do not spawn more than once per year and usually spawn in deeper water than bluegill.

Redear sunfish are common throughout Tennessee except in the higher elevations of the eastern mountains. The average length of redear harvested in Tennessee is 8 inches, and the range is 4-12 inches. The state record is 3 pounds, 6 ounces.

Green Sunfish *(Lepomis cyanellus)*
Other names: green perch, pond perch

Brian James

Green sunfish will tolerate many habitats, but prefer warm, still waters. They inhabit lakes, ponds and sluggish creeks and streams and are known to establish territory near the water's edge under brush, rocks or exposed roots.

Green sunfish are agressive feeders and prefer dragonfly and mayfly nymphs, caddisfly larvae, midges, freshwater shrimp and beetles, and will occasionally eat small fish like mosquitofish. Common throughout their range, they are found across the state except in the higher elevations of East Tennessee. Their average length is 4 inches and the range is 2-8 inches in length. The state record is 1 pound, 4 ounces.

Green sunfish/bluegill hybrids are often sold as "hybrid bluegill."

Warmouth *(Lepomis gulosus)*
Other names: warmouth bass, goggle-eye, bream, red-eyed bream, stumpknocker

TWRA Staff

Warmouth inhabit relatively shallow, slow-flowing, mud bottom creeks, ponds, lakes, swamps and reservoirs. They are often found hiding around weed beds, snags and under the banks of streams and ponds, rather than in open water. Because of their large mouths, warmouth have more variety in their diet than most sunfish. They eat small fish, as well as invertebrates such as crayfish, snails and freshwater shrimp. Dragonflies and other insects are also important food items.

Warmouth are found throughout the state except in the higher elevations of East Tennessee. Warmouth range from uncommon in some locations to common in others. Seven inches is the average length of warmouth harvested from Tennessee waters, and the range is 4-10 inches. The state record is 1 pound, 12 ounces.

Rock Bass *(Ambloplites rupestris)*
Other names: redeye, black perch, goggle-eye, rock sunfish

Brian James

Rock bass, sometimes called redeye bass, prefer small, cool streams or the shoreline of larger streams with rocky, silt-free bottoms, clear water and extensive cover. They are occasionally found in clear, rocky areas of reservoirs and often congregate in deep pools near boulders, ledges, logs and other cover.

Major foods of the rock bass are crayfish, aquatic and land insects, small mollusks, and small fishes. In Tennessee, rock bass are found in the cooler streams associated with smallmouth bass or even trout. They are found between Kentucky Reservoir and the higher elevations of East Tennessee. Rock bass average eight inches in length when harvested in Tennessee and the range is 6-12 inches. The state record is 2 pounds, 8 ounces.

Redbreast Sunfish *(Lepomis auritus)*
Other names: redbreast bream, redbelly, yellowbelly sunfish, robin

TWRA Staff

Redbreast sunfish inhabit streams, rivers and lakes. In streams with rapids, they move to deeper stretches with gravel or rocky bottoms and frequently concentrate around boulders, limestone outcroppings, logs or aquatic vegetation.

The major food of the redbreast is aquatic insects, including caddisflies, dragonflies, beetles, midges and mayflies. They also eat land insects, snails, crayfish, small fish, and occasionally organic matter from the stream bottom.

Redbreast may be found throughout the state except in higher elevations in East Tennessee. They are more common in the eastern part of the state and are considered rare in West Tennessee. Redbreast sunfish are also more common in streams than in reservoirs, ponds, or lakes. Nine inches is the average length of redbreast sunfish kept by anglers in Tennessee with a range of 5-12 inches. The state record is 1 pound, 5 ounces.

Orangespotted Sunfish *(Lepomis humilis)*
Other names: redspotted sunfish, dwarf sunfish, sunperch

Brian James

Orangespotted sunfish are found in quiet streams and vegetated lakes, ponds and reservoirs. Insects constitute their major food source.

They are found primarily in the western half of Tennessee and are uncommon even in that area. With a range of 1-4 inches, this sunfish averages 2 inches in length and is one of the smallest of the sunfish family. The state record is 5 ounces.

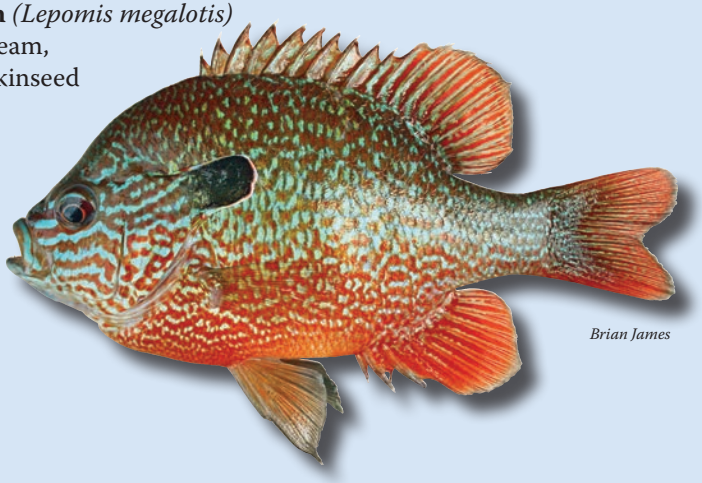
Flier *(Centrarchus macropterus)*
Other names: round sunfish, goggle-eye, flier bream

Mark Thurman

The flier prefers sluggish lowland habitats with clear, heavily vegetated waters. Its feeding habits are typical of sunfish and include zooplankton, midges, beetles, worms, snails, clams and occasionally fish, fish eggs or fry.

The flier is found in West Tennessee, in streams that flow directly into the Mississippi River and Reelfoot Lake. Although not common within this range, the average length caught is 4 inches and the range is 3-6 inches. The state record is 8 ounces.

Longear Sunfish *(Lepomis megalotis)*
Other names: bream, sunperch, pumpkinseed



Brian James

Although longear sunfish now thrive in reservoirs, they typically inhabit creeks, small streams and rivers. They feed on immature aquatic insects, worms, crayfish, small fish and fish eggs. Longear sunfish are found throughout Tennessee except in the higher elevations of the eastern mountains. They are common throughout most of their range in Tennessee and are one of the most colorful fish seen by anglers. Averaging around 6 inches, adults normally range from 4-8 inches in length. The state record is 13 ounces.

Pumpkinseed *(Lepomis gibbosus)*
Other names: sunperch, sunny

Rob Lindbom

The pumpkinseed is an inhabitant of quiet, sluggish waters, and is occasionally found in the northeastern part of Tennessee. It is one of the most uncommon sunfish in the state. Pumpkinseed feed on zooplankton, midges, mayfly nymphs, snails and insects. Their average length is four inches, and the range is 2-6 inches. The state record is 5 ounces.

Temperate (True) Bass

As their name implies, these fish are true bass, as opposed to the black bass, which are actually members of the sunfish family. To help with identification between the species, see page 18.

Striped Bass *(Morone saxatilis)*
Other names: rockfish, striper, rock, linesides

Brian James

Striped bass were originally native to the Atlantic Ocean and Gulf of Mexico, where they entered fresh water only to spawn. In Tennessee, they are found only where they have been stocked, or in places where they have migrated from stocked waters. They occupy open water areas, usually in schools. Striped bass feed almost exclusively on gizzard shad, threadfin shad, and other herrings.

In Tennessee waters where striped bass have been stocked, they can be considered common, but they can migrate to other reservoirs through the series of dam locks. The average harvested size of striped bass from reservoirs is approximately 32 inches but the range is 15-40 inches. The state record is 65 pounds, 6 ounces.

White Bass *(Morone chrysops)*
Other names: stripe, stripe bass, sand bass, silver bass

Brian James

White bass are found in open water schools, usually in clear, cool-water rivers and reservoirs. They feed on fishes, mainly small shad and minnows. They normall "run" upstream to spawn when water temperatures reach 50-55 F in the spring.

White bass are found throughout the state except in the higher elevations of East Tennessee and are common to abundant over their range. The average size of white bass harvested from reservoirs is approximately 12 inches and the range is 8-18 inches in length. The state record is 5 pounds, 10 ounces.

Yellow Bass*(Morone mississippiensis)*
Other names: brassy bass, striped jack, stripe, yellow belly, barfish

Brian James

Yellow bass are found in quiet pools and backwaters of large streams, lakes and reservoirs. They prefer warmer waters than white bass and feed in open water on small crustaceans, insects and small fish.

Yellow bass were originally found in the western part of the state, but more recently have shown up in many reservoirs of the Tennessee and Cumberland rivers where they are now moderately common to abundant. Harvested yellow bass average 7-10 inches and range from 4-11 inches in length. The state record is 2 pounds, 9 ounces.

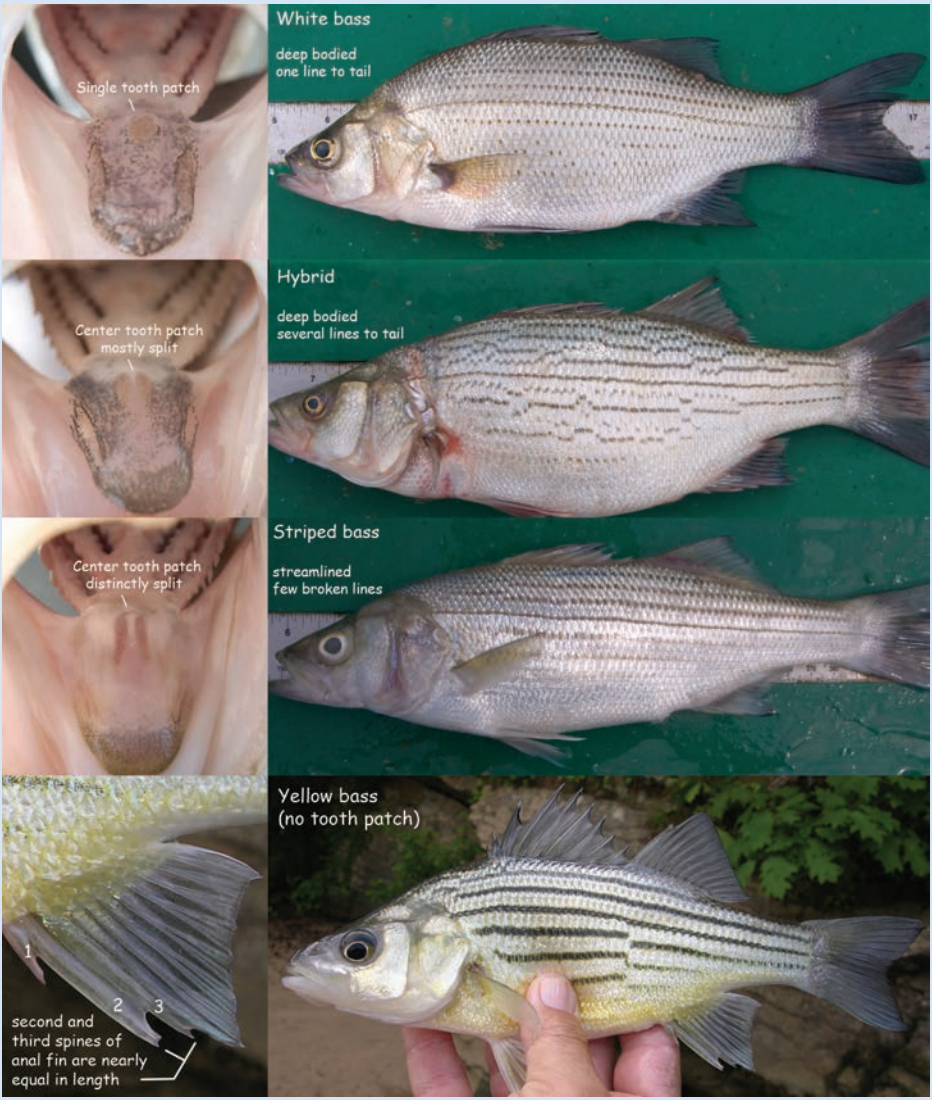
Cherokee Bass *(Morone saxatilis x M. chrysops)*
Other names: hybrid striped bass, hybrid, wiper, whiterock, hybrid rock, sunshine bass

Brian James

This species is a cross between the female striped bass and the male white bass. Initially known as the "hybrid," it was renamed the Cherokee bass because of the first successful Tennessee introduction into Cherokee Reservoir in 1965. The Cherokee bass prefers habitat similar to that of the striped bass and is only found where stocked or where it has migrated through dams to nearby reservoirs. They are known for their superior fighting abilities.

The feeding habits of Cherokee bass are similar to striped bass and white bass in that they herd schools of shad near the surface and can cause considerable surface disturbance when feeding. They average approximately 18 inches in length and the range is 8-30 inches. The state record is 23 pounds, 3 ounces.

Temperate Bass Comparison Chart

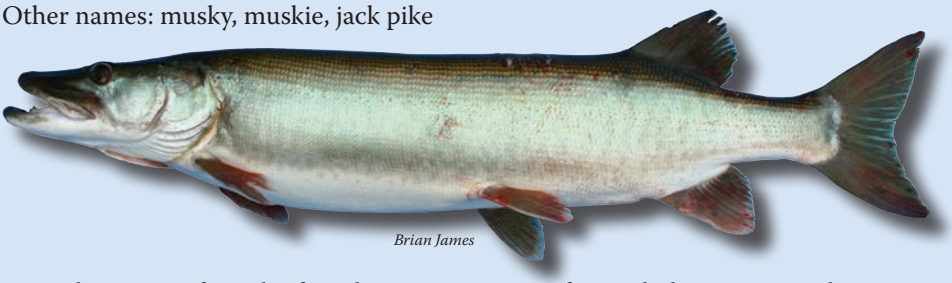


TWRA Staff

Pike

Two species of pike are commonly sought by anglers in Tennessee; the muskellunge and the pickerel. The muskellunge occurs as two distinct strains. The first is native to streams in the northern portion of the Cumberland Plateau. It has been reintroduced to several other streams in middle and East Tennessee. The other strain prefers the waters of lakes and reservoirs and has been stocked in several reservoirs.

Muskellunge *(Esox masquinongy)*
Other names: musky, muskie, jack pike

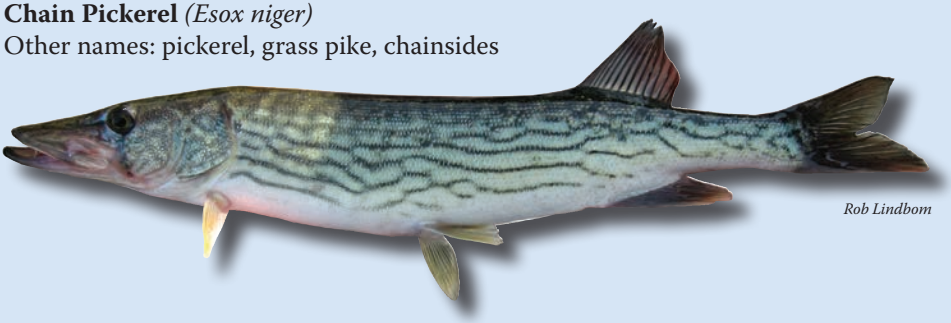


Brian James

Both strains of musky found in Tennessee prefer cool clear water with aquatic vegetation. They are rarely far from cover and often hang motionless near cover awaiting their prey. Muskellunge feed primarily on fish, but they are also known to prey on snakes or other terrestrial animals that might be available.

Tennessee muskellunge are found in tributaries of the Big South Fork of the Cumberland River, and also the Emory River and its tributaries in the Tennessee River system. They have also been reintroduced to several other reservoirs and river systems, including the Upper Caney Fork River and its tributaries, and Collins and Calfkiller rivers. They are also found in Melton Hill, Dale Hollow, and Parksville reservoirs. Muskellunge averages about 32 inches in length at harvest and ranges from 20-45 inches. The state record is 43 pounds, 14 ounces.

Chain Pickerel *(Esox niger)*
Other names: pickerel, grass pike, chainsides



Rob Lindbom

Chain pickerel survive in habitat that varies from clear, shallow, heavily vegetated shoal water to the deeper parts of lakes. They are most commonly found in the backs of coves in Kentucky Reservoir and many West Tennessee streams. They prefer brush and weed beds.

Chain pickerel feed on fish and other vertebrates, sometimes including mice, sala-

manders, frogs and tadpoles. They are found in the western third of Tennessee and are generally uncommon. The average length of chain pickerel caught in Tennessee is 20 inches and range from 12-28 inches. The state record is 7 pounds, 7 ounces.

The redfin pickerel *(Esox americanus)*, sometimes called grass pickerel also occurs in the western third of the state, where it inhabits sluggish waters from ponds and swamps to pools in rivers and streams. Their diet is similar to the chain pickerel, although they seldom exceed 15 inches in length.

Perch

Although the perch family is one of the largest families of fish in North America, only three species are commonly sought by anglers because of their size and excellent quality as table fare. The remaining species, approximately 100, include some of the most beautiful fish in Tennessee; the darters.

Yellow Perch *(Perca flavescens)*
Other names: lake perch, raccoon perch, striped perch, redfin perch

Brian James

The yellow perch is a very adaptable species that lives in a variety of habitats. It is most common in clear, open water of large lakes, ponds, or quiet rivers with moderate vegetation, and muck, sand, or gravel substrate. Their food consists of immature insects, larger invertebrates and fishes, taken in open water or off the bottom.

In Tennessee, yellow perch can be found mainly in the larger mainstream reservoirs of the Tennessee River in Southeast Tennessee, and in Kentucky Reservoir. Although common in some of these areas, they are uncommon in most. Their range, as well as their numbers, seems to be expanding in the state. Anglers have located yellow perch in creeks near the back-end of reservoir embayments. Harvested yellow perch average 8 inches in length and range from 4-14 inches. The state record is 2 pounds, 3 ounces.

Sauger *(Sander canadensis)*
Other names: jack salmon, jack fish, sand pike, river pike

Brian James

Sauger habitat is typically medium and large, free-flowing streams, rivers, and reservoirs. They are more tolerant of turbid conditions than walleye. Fish are their principal source of food.

Sauger are found in all mainstream reservoirs of the Tennessee and Cumberland river systems, the Mississippi River and many larger tributary streams. Anglers usually locate sauger near dams or river islands. Unlike saugeye and walleye, the sauger normally has distinct and separate black spots in the spiny dorsal fin.

The average length of sauger harvested is approximately 16 inches and the range is 10-22 inches. The state record is 7 pounds, 6 ounces.

Walleye *(Sander vitreum)*
Other names: walleyed pike, jackfish, jack salmon, jack, pike perch, blue pike, glass-eye

Brian James

Walleye prefer large, clear, deep streams, rivers and reservoirs. They can survive temperature extremes of 32-90 F, but usually prefer waters with a maximum temperature around 77 F.

The walleye is a voracious feeder, primarily on other fish, including shad, sculpins, suckers, sunfish, and shiners, which make up most of its diet.

Walleye are found in many Tennessee reservoirs with favorites being Center Hill, Cherokee, Dale Hollow, Norris, South Holston, Tellico, Tims Ford, and Watauga. Reservoirs recently stocked with walleye include Cheatham, Chickamauga, Ft. Patrick Henry, Normandy, Old Hickory, and Watts Bar.

To help distinguish between sauger and saugeye, the walleye has a black spot at the rear base of the spiny dorsal fin and a clear white tip on the lower lobe of the caudal fin.

The average length harvested is approximately 18 inches but the range is 14-28 inches. The state and world record is 25 pounds.

Saugeye *(Sander canadensis x S. vitreum)*

Bart Carter

Saugeye are normally a hatchery-produced hybrid created by crossing a female walleye with a male sauger, although natural crosses of the two species can occur in waters where they are both present. While they will not attain the size of the walleye, they seem to grow faster and reach harvestable size quicker.

Saugeye habitat preferences are closer to sauger than walleye, and they are more tolerant of warm, muddy water than walleye, although all three normally spend most of their time staying close to the bottom, depending on water clarity.

The feeding habits of saugeye are similar to their "parental" species, feeding on benthic invertebrates and worms when young, and then transitioning to fish, such as shad and shiners as adults.

Saugeye have been stocked for the past several years in Cherokee Reservoir, located in the eastern part of Tennessee. The average saugeye harvested is approximately 18 inches, but the range is 15-21 inches. The current state record saugeye is 10 pounds, 12 ounces.

Saugeye look similar to both parental species, but can best be identified by the "blotchy" and somewhat subdued (versus distinct) saddle markings on their sides and back. Also, the spiny dorsal fin has black spots and bars (connected and continuous) in at least the first half of the fin (right).

Bart Carter

Trout

Although four species of trout are found in Tennessee, only one, the brook trout, is native to the state. Trout are usually associated with streams of the eastern mountains, but there are many instances where tailwaters, small rivers and spring-fed streams in other portions of Tennessee have temperatures that support these coldwater fish year-round. The TWRA has established a winter trout stocking program in select, publicly accessible ponds and small lakes across the state that provides a quality fishing experience for anglers seeking this opportunity. Visit the TWRA website for more information about this program, and all other trout stocking locations.

Brook Trout *(Salvelinus fontinalis)*
Other names: brookie, speckled trout, mountain trout, specks, charr

wild brook trout

Brian James

hatchery-raised brook trout

Brook trout are found mostly in clear, cold, headwater streams at elevations generally above 3,000 feet in the mountains of East Tennessee. The water temperature of brook trout habitat rarely exceeds 68 F. They are the only trout native to Tennessee and fish from the southern Appalachians have been found to be genetically distinct from brook trout native to more northern parts of this species' range.

They feed extensively on aquatic and land insects, snails, fish eggs, frogs, salamanders, small fishes, and crustaceans. They are common in the upper parts of many high mountain streams, fading to rare in the lower sections of these streams. A hatchery-produced variety is also stocked in some cold tailwaters.

Harvested length of Tennessee brook trout ranges between 5-12 inches. The state record is 4 pounds, 12 ounces.

Brown Trout *(Salmo trutta)*
Other name: brown

Brian James

Brown trout are not native to the state, but have been introduced in many suitable places. They can be found in coldwater streams and rivers at elevations generally

below 3,000 feet, as well as tailraces and reservoirs where water temperatures stay below 70 F. Although their habitat is similar to that of the brook or rainbow trout, brown trout can live in water with slightly higher temperatures.

Brown trout favor mayflies and other aquatic insects but will feed on worms, snails, frogs, insects, crawfish, salamanders and smaller fish.

They are most common in areas where they are maintained by stocking. The average length harvested in our state is around 12 inches and the range is 8-24 inches. The state record is 28 pounds, 12 ounces.

Rainbow Trout *(Oncorhynchus mykiss)*
Other names: rainbow, redside

Brian James

Rainbow trout are not native to Tennessee, but they have been stocked extensively in the state, particularly in the East. They are usually found where water temperatures stay below 70 F. This includes many mountain streams in East Tennesse above elevations of 1,800 feet, as well as spring-fed streams, reservoirs, and tailwaters elsewhere that provide suitable coldwater habitat.

Rainbow trout eat insects, crayfish, fish, and fish eggs. The average harvested length is approximately 9 inches, with a range of 6-20 inches. The state record is 18 pounds, 8 ounces.

Lake Trout *(Salvelinus namaycush)*
Other names: gray trout, laker

John Hammonds

Lake trout are the third non-native trout species found in Tennessee, and are stocked in South Holston and Watauga reservoirs in the eastern part of the state. They are usually found in the deeper and colder depths of these reservoirs.

The diet of lake trout varies with the age and size of the fish, but mainly consists of aquatic insects, snails, and fish. Lake trout caught by anglers in Tennessee usually range from about 3-10 pounds. The state record is 22 pounds, 2 ounces.

Catfish

Although approximately 21 native species of catfish exist in Tennessee, only six species are commonly caught by anglers. These species are divided into two groups: the true catfish and a group popularly called bullheads. The practical difference is that bullheads are somewhat smaller and have a tendency to live in smaller and possibly muddier waters.

Channel Catfish *(Ictalurus punctatus)*
Other names: channels, fiddler, willow cat, spotted catfish, speckled catfish, forked-tail cat

Brian James

Channel catfish are characteristic of clear, medium to large rivers, reservoirs, and ponds. They will eat almost anything, preferring insects, worms, fish eggs, crayfish, a variety of plants, and fish (usually dead). Younger fish usually have dark spots along the sides of the body, (see above), hence the other names of spotted or speckled catfish.

Channel catfish are common and found throughout the state except in trout streams in higher elevations of East Tennessee. The average length harvested from reservoirs is approximately 16 inches and the range is 10-38 inches. The state record is 41 pounds, and the channel catfish is the official state commercial fish.

Blue Catfish *(Ictalurus furcatus)*
Other names: white cat, blue channel, Mississippi cat, Fulton cat

Eric Ganus

Blue catfish, the most common catfish harvested by anglers, are found in major rivers and reservoirs, but are also characteristic of deep areas of large rivers throughout their range. Look for them in chutes and pools with currents.

The food of the blue catfish includes fish, crayfish, aquatic insects and many other animals it encounters. Found throughout Tennessee in reservoirs and larger rivers, this catfish is common and also reaches the largest size among its relatives. Approximately 18 inches is the average length harvested from reservoirs, with a range of 14-45 inches. The state record is 112 pounds.

Flathead Catfish *(Pylodictis olivaris)*
Other names: shovelnose cat, yellow cat, mud cat, shovelhead cat, Appaloosa cat, bluff cat

Brian James

Flathead catfish live in major rivers and reservoirs, and prefer deep holes scoured by currents, such as those in eddies adjacent to bridge pilings and in tailraces below dams. They feed mainly on live fish, taking whatever is most available. Food includes gizzard shad, freshwater drum, carp, channel catfish, bullheads, bluegill, and occasionally crayfish.

Flathead catfish are found throughout Tennessee except in the higher elevations of the eastern mountains. They are common, and those harvested average 18 inches with a range of 12-40 inches in length. The state record is 85 pounds, 15 ounces.

Yellow Bullhead *(Ameiurus natalis)*
Other names: mud cat, pollywog, yellow belly

TWRA Staff

Yellow bullheads inhabit small shallow lakes, ponds, reservoirs and slow-moving streams with various bottom types from muck to gravel. They are less tolerant of poor water conditions than other bullheads.

Yellow bullhead feed on a wide variety of small, live and dead fish. They will also eat dragonfly nymphs, crayfish, mollusks and fragments of aquatic plants. They are common throughout Tennessee except in the higher elevations of the eastern mountains. The average length for yellow bullhead harvested in Tennessee is approximately 10 inches with a range of 4-16 inches. The state record is 4 pounds, 8 ounces.

Brown Bullhead *(Ameiurus nebulosus)*
Other names: mud cat, pollywog, brown catfish, speckled bullhead

TWRA Staff

Brown bullheads usually inhabit still or slowly-flowing warm waters such as ponds, lakes and sluggish streams and reservoirs. They are tolerant of poor water conditions including siltation and pollution. Brown bullhead feed on mollusks, insects, leeches, sunfish, crustaceans, worms, algae, plant material, fish (usually dead), and fish eggs.

Found throughout Tennessee, except in the high elevations of the eastern mountains, this bullhead is less common. Average length harvested is 8 inches and the range is 4-14 inches. The state record is 3 pounds, 15 ounces.

Black Bullhead *(Ameiurus melas)*
Other names: mud cat, pollywog

TWRA Staff

Black bullhead are found in ponds and lower sections of small to medium-sized streams with little slope. Black bullhead also inhabit pools and backwaters of larger streams and rivers and silty, soft-bottomed areas of lakes and reservoirs.

They feed on immature insects, clams, snails, crustaceans, plant material, leeches and fish (usually dead), such as shiners and sunfish. Black bullhead are common and found throughout the state except in the higher elevations of the eastern mountains. Eight inches is the average harvested length, with a range of 4-14 inches. The state record is 3 pounds, 6 ounces.

Gar

Gar frequent quiet, often weedy waters where food is abundant. Gars eat fish such as minnows and small sunfish. They also have the ability to "gulp" air directly into an air bladder which allows them to "breathe", and in turn, survive in waters with very little dissolved oxygen. Gar are edible, but are not considered a food fish. The eggs of all gar are reported to be poisonous to vertebrate animals, including humans.

Longnose Gar *(Lepisosteus osseus)*
Other name: needlenose gar

Brian James

Longnose gar are found in larger streams and reservoirs, where they prefer the warmest waters. Adult gar feed on fish such as shiners, sunfish, shad, catfish, carp and bullheads, as well as any other available food that their throats will accommodate. They show a preference for minnows and other small fish that lack spiny fins.

Longnose gar are found throughout the state except in the higher elevations of East Tennessee. They are common throughout this range. The average longnose recorded in Tennessee is around 20 inches, but the range is 12-36 inches. The state record is 38 pounds, 3 ounces.

Shortnose Gar *(Lepisosteus platostomus)*
Other names: short-bill gar, stub-nose gar

aff

Shortnose gar are typically found in quiet, backwater areas of rivers, reservoirs, and in lakes and oxbows. They are more tolerant of muddy water than other gar and prefer warm water. This gar feeds on crayfish, fish and aquatic insects.

They are common in the western portion of the state, gradually declining in abundance toward the eastern part of Tennessee, where they are rare. Tennessee shortnose gar average around 18 inches and range from 12-30 inches in length. The state record is 7 pounds, 3 ounces.

Spotted Gar *(Lepisosteus oculatus)*
Other name: leopard gar

Brian James

Spotted gar are most abundant in quiet, clear water with abundant aquatic vegetation. They prefer warmer waters than other gar, and also feed on fish.

In Tennessee, spotted gar are found mostly in the larger reservoirs and rivers. They are more common in the western portion of the state, becoming uncommon in eastern waters. Average length is 18 inches with a range of 12-26 inches. The state record is 10 pounds, 10 ounces.

Alligator Gar *(Atractosteus spatula)*
Other name: gator gar

Brian James

The alligator gar is the largest of the four species found in Tennessee, and one of the largest freshwater fishes. They inhabit sluggish pools and backwaters of large rivers and oxbow lakes in the western portion of the state. Their diet is mainly fish, but they will eat any potential food item of appropriate size, including reptiles, amphibians, birds, and small mammals.

Brian James

Alligator gar have declined drastically in abundance over the past fifty years and the decline has been attributed to habitat loss. Accordingly, there has been an ongoing stocking program since 1999 to restore this gar in West Tennessee. For now, alligator gar are protected in the state and if one is caught, it must be released immediately. However, anglers are encouraged to report alligator gar catches to the nearest TWRA regional office, as this will assist the Agency in monitoring the restoration effort.

Where harvest is allowed in other states, anglers report alligator gar ranging from 4-6 feet and weighing 40-150 pounds.

Buffalo

Buffalo are members of the sucker family and all prefer the same general type of habitat – large rivers and reservoirs. They are primarily a commercial species and because of their feeding habits, are only occasionally caught by sport anglers. It can be very difficult to differentiate the three species of buffalo at large sizes.

Bigmouth Buffalo *(Ictiobus cyprinellus)*
Other names: gourdhead, common buffalo, buffalo fish

Brian James

Bigmouth buffalo inhabit the shallow portions of large rivers, oxbows, lakes, and reservoirs. Even though they prefer clear water, they can tolerate muddy water and are well adapted to reservoirs. Bigmouth buffalo eat plankton as well as bottom organisms, including insects, mollusks, algae, many microscopic organisms and plant material.

Bigmouth buffalo are found throughout the western half of Tennessee in larger bodies of water and in the mainstream reservoirs as far east as Knoxville. Although these are seldom seen by sport anglers, they are common throughout their range. Harvested bigmouth buffalo average approximately 24 inches in length, and the range is 16-38 inches. The state record is 62 pounds.

Smallmouth Buffalo *(Ictiobus bubalus)*
Other names: razor-back buffalo, hump-backed buffalo, high-back buffalo

Eric Ganus

Smallmouth buffalo prefer the clear waters of larger rivers and reservoirs. They eat both animal and vegetative matter, and their main animal foods are aquatic larvae and sometimes microscopic forms strained from the mud. Vegetative matter includes algae and small plants.

Smallmouth buffalo are common throughout most of Tennessee in larger rivers and reservoirs. The average length of smallmouth buffalo harvested in Tennessee is 22 inches with a range of 14-34 inches. The state record is 62 pounds, 7 ounces.

Black Buffalo *(Ictiobus niger)*
Other names: mongrel buffalo, blue rooter, round buffalo

Eric Ganus

Black buffalo are similar to bigmouth and smallmouth buffalo, but since they prefer running water they are often found in strong currents of large rivers. Although more of a vegetarian than other buffalo, black buffalo also eat plankton, insect larvae, snails, and other small mollusks.

The range of black buffalo in Tennessee is similar to that of the bigmouth buffalo. Harvested black buffalo average 24 inches and range between 16-40 inches in length. The state record is 58 pounds.

Redhorses

Redhorses are a group of large suckers that so closely resemble one another that only an expert can tell the various species apart. Other redhorses not pictured or described here include the black, river, silver, and smallmouth. Generally, they are found throughout the state except in high mountain trout waters, and feed on plankton, bivalve mollusks, insect larvae like mayflies, caddisflies and midges, and fish eggs.

Golden Redhorse *(Moxostoma erythrurum)*
Other names: yellow sucker, golden sucker

The golden redhorse inhabits riffle areas and pools of small to large, clear streams and rivers, where riffles are composed of sand, gravel, boulders, and bedrock, and the pools are free from heavy silt and aquatic vegetation. It is also found in lakes and reservoirs, but is better adapted to river than lake habitats.

Food for the golden redhorse consists of animals and algae sucked up from bottom sediments, including immature insects, worms, mollusks, chironomids, mayflies, caddisflies, oligochaetes, and fingernail clams. They are found throughout Tennessee, except the higher elevations of the eastern mountains and the Mississippi River and its direct tributaries. It is often common in its range. The state average for golden redhorse is 14 inches, with a range of 10-20 inches. The state record is 2 pounds, 15.5 ounces.

Carpsuckers

In addition to the river carpsucker, there are two other closely related species found in Tennessee. These are the highfin carpsucker and the quillback carpsucker. All inhabit similar waters with the latter two being more typical of reservoirs. All are tolerant of warm and muddy water and are bottom feeders with similar diets. As with buffalo, carpsuckers are only occasionally caught by sport anglers.

River Carpsucker *(Carpiodes carpio)*
Other names: white carp, lake carp, quillback

The river carpsucker prefers Tennessee's larger river systems and reservoirs, but may also be found in more moderately sized rivers, except those in the extreme eastern portion of the state. The river carpsucker's diet consists of food found on the bottom, such as insects, algae, and plant material.

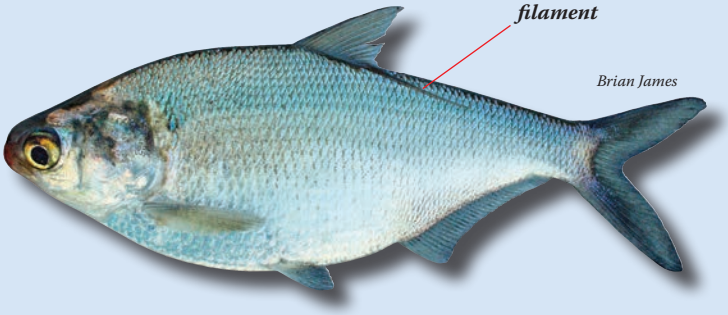
River carpsuckers are generally common where they occur, averaging approximately 14 inches in length and ranging from 10-20 inches. The state record is 1 pound, 9 ounces. For the quillback carpsucker, the state record is 6 pounds.

Herring (Shad)

There are five members of the herring family (usually referred to as clupeids or shad) found in Tennessee. All of the herrings are generally thought of as forage species, although the skipjack is actually a predator for much of its life. In addition to the three species described here, two other herring species are considered aquatic nuisance species and are discussed beginning on page 48.

Also, to help distinguish young of the year gizzard and threadfin shad, which are used for bait, from the invasive Asian carp (pages 51-52), note that our native gizzard and threadfin shad have a "filament" at the end of the dorsal fin. Asian carp do not.

Gizzard Shad *(Dorosoma cepedianum)*
Other names: shad, gizzards, hickory shad, herring



Brian James

Gizzard shad occur in schools and prefer productive, calm, warm waters, although they can also be found in rivers, streams, and tailraces where currents are strong. Their habitat also includes natural lakes, ponds, pools and backwaters of low gradient streams.

They feed almost entirely on microscopic organisms which are strained from water or silt. Gizzard shad will also pick through mud and organic matter on the bottom for small food. They are widely distributed in Tennessee and are abundant in all large streams and lakes. Although they are seldom caught by hook and line, gizzard shad average approximately 8 inches in length and the range is 2-14 inches. The state record is 3 pounds, 3 ounces.

Threadfin Shad *(Dorosoma petenense)*
Other names: shad, yellowtails, yellowfin

Brian James

Threadfin shad live in lakes, larger rivers, and reservoirs. While this fish may not be native to any portion of Tennessee, it has been widely introduced into reservoirs, and lakes as a forage species.

Threadfin shad feed on plankton and are common in all major rivers and reservoirs. They range in size from 1-6 inches.

Skipjack Herring *(Alosa chrysochloris)*
Other names: skipjack, river herring, hickory shad, Tennessee tarpon

Brian James

Skipjack herring prefer large rivers with clear, cool, flowing water. They are also common in large mainstream reservoirs where they can be found in the fast-flowing waters below dams. They feed primarily on fish, insects, and plankton, and often in schools, when they force groups of small shad to the surface.

Skipjack herring are found mostly in Tennessee's mainstream reservoirs and their larger tributary rivers. They are common in this habitat from Knoxville westward, excluding the Cumberland Plateau. They average approximately 12 inches in length and the range is 9-20 inches. The state and world record is 4 pounds, 3 ounces.

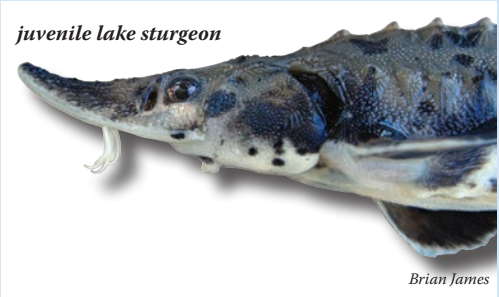
Sturgeon

Sturgeons are a group of primitive fish that have several rows of bony plates (called scutes) on their bodies instead of the typical covering of scales. They also have four barbels (whiskers) in front of their sucker-like mouth on the underside of their rostrum (snout). These are used to sense the river bottom and to identify food items. This group of fish contains some of the largest freshwater fish and historically were an important Tennessee commercial species. Of seven sturgeon species that occur in North America, three are found in Tennessee, none of which may be harvested.

Lake Sturgeon *(Acipenser fulvescens)*

Brian James

An inhabitant of large rivers and lakes, the lake sturgeon is one of three native sturgeon species found in Tennessee. While they were formerly found in the Cumberland, Mississippi, and Tennessee rivers, lake sturgeon populations have dramatically declined and are listed as endangered in Tennessee. The reasons for the decline over the last century are a combination of over-fishing, habitat loss, and the damming of rivers.



juvenile lake sturgeon

Brian James

Being a bottom feeder, their diet consists mainly of snails, insect larvae, mollusks and crayfish. Potentially one of the largest and longest living fish in Tennessee, the lake sturgeon is reported to grow to eight feet in length, weigh up to 300 pounds, and live 150 years.

Efforts have been underway to restore reproducing populations of this primitive species to Tennessee waters. Since 2000, over 220,000 lake sturgeon have been stocked into the Cumberland River and the upper portion of the Tennessee River. Although lake sturgeon must be released if caught, TWRA encourages anglers to report pertinent information, such as time and location of capture, and the length of the lake sturgeon by calling the Fisheries Division at 615-781-6575. Information may also be emailed to **sturgeon.reports@tn.gov**. This data will provide important movement and growth information needed to monitor the success of Tennessee's lake sturgeon reintroduction program. In appreciation for reporting this information, anglers will receive a Lake Sturgeon Certificate. Anglers may also call the nearest TWRA regional office to make a report (see page 74).

Shovelnose Sturgeon *(Scaphirhynchus platorynchus)*
Other name: hackleback

David Ostendorf

Although the most common sturgeon in Tennessee, the shovelnose sturgeon is found mainly in the Mississippi River in areas of moderate to strong current. Like the other two native sturgeons, the shovelnose feeds entirely on the bottom, with aquatic insect larvae being their primary food. Unlike the lake and pallid sturgeons, the shovelnose is a "small" sturgeon, seldom exceeding a length of 30 inches or a weight of 6 pounds.

Until 2010, this sturgeon was harvested by commercial fishers for its roe (eggs) in the production of caviar. Shovelnose sturgeon are now a protected species because of their similar appearance to Tennessee's third sturgeon species, the pallid sturgeon, which is listed as an endangered species.

Pallid Sturgeon *(Scaphirhynchus albus)*
Other name: white hackleback

David Ostendorf

The pallid sturgeon is an endangered species which cannot be harvested, and is very similar in appearance to the shovelnose sturgeon. It is found in the Mississippi River in areas with strong current and, like the previous two sturgeons, it is a bottom-dwelling fish preferring a firm, sandy or gravel substrate.

The pallid sturgeon is one of the rarest and largest fishes in Tennessee and alterations of large river systems such as damming, channelization and diking is believed to be the primary cause of their decline.

Pallid sturgeon feed on aquatic insects and small fish, and attain a larger size than shovelnose sturgeon, reaching lengths of over 6 feet and weighing over 70 pounds with a lifespan of over 50 years. Hybrids between the pallid and shovelnose sturgeon occur in the wild, complicating identification between the two species.

Paddlefish

(Polyodon spathula)

Other names: spoonbill, spoonbill cat, shovelnose cat, boneless cat

Brian James

dorsal view of rostrum (paddle)

Brian James

Paddlefish prefer large, free-flowing rivers rich in zooplankton. However, paddlefish are commonly found in reservoirs where they have adapted but occasionally experience unsuitable spawning habitat needed to maintain harvestable populations. They feed primarily on plankton strained from the water and occasionally on very small fish inadvertently strained during feeding.

Paddlefish are usually found in the mainstream reservoirs of the Cumberland, Tennessee, and Mississippi river systems, although populations exist in a few tributary reservoirs of the state. They are common to uncommon over this range. Tennessee paddlefish average 36 inches in length and the range is 24-60 inches. The state record is 104 pounds. Paddlefish are commercially harvested for their roe (eggs), which is used in caviar production.

Bowfin

(Amia calva)

Other names: grinnel, dogfish, grindle, mud fish, cypress trout

Brian James

The bowfin is a quiet-water resident found in sluggish, swampy, clear, vegetated bays of warm lakes and rivers. Bowfin can live in hot, poorly oxygenated waters that are uninhabitable to many fish because they are able to take oxygen directly into an air bladder, a process similar to breathing.

Bowfin are voracious predators that favor fish but will consume virtually any type of animal, such as fish, crayfish, freshwater shrimp, frogs, and larger insects like water beetles and dragonfly nymphs. They have numerous small teeth in their mouth and a bony plate under the throat, between the jaws.

Bowfin habitat includes waters of the Tennessee River from Chattanooga downstream, the Cumberland River from Nashville downstream, and the Mississippi River and its direct tributaries. They are common in the western part of their range, becoming rare in the eastern portion of the state.

Average length caught is about 20 inches, with a range of 16-34 inches. They average 2-5 pounds and can reach 15 pounds. They are strong fighters when hooked, but are usually taken by anglers fishing for other fish species. The state record is 15 pounds, 7 ounces.

This species looks similar to the snakehead, an aquatic nuisance species that has the potential to invade Tennessee (see page 57).

American Eel

(Anguilla rostrata)
Other name: eel

TWRA Staff

The American eel is shaped like a snake, with a slick, smooth surface, but it has pectoral fins. It can be found in the Cumberland, Mississippi, and Tennessee River drainages of the state, especially where movement is not impeded by dams. Eels are uncommon in Tennessee and are only caught while fishing for other fish species. When caught on hook and line, they are strong fighters. There is currently an effort to spawn, raise and release eel back into Tennessee waters.

American eels are mostly nocturnal, hiding by day in deeper water beneath rocks and other submerged cover. They feed on animal matter such as fish, crayfish, and insects. Adults are commonly 15-35 inches in length, and weigh between 0.5-4.5 pounds. The state record is 5 pounds, 12 ounces.

Freshwater Drum

(Aplodinotus grunniens)
Other names: sheepshead, white perch, croaker, rosie, gaspergou, grunting perch

Eric Ganus

Drum prefer large impoundments and rivers, but occur in a wide variety of habitats. They are mainly bottom feeders, eating insect larvae, crustaceans, small fish, clams, and snails.

Drum are found throughout the state, excluding trout streams in East Tennessee, and are common. They are generally caught when fishing for other species. The average harvested length is 10 inches, with a range of 8-30 inches. Tennessee holds the world record freshwater drum at 54 pounds, 8 ounces.

Mooneye

(Hiodon tergisus)
Other names: shad, toothed herring

Brian James

Although the mooneye, and the closely related goldeye are similar in appearance to shad and herrings (without the dorsal filament), these two species belong to a different family of fish. Another characteristic used to separate these two species from the shad or herrings is that both the mooneye and goldeye have teeth on their tongue, jaws, and the roof of the mouth.

Mooneyes, as well as goldeyes, are surface feeders that inhabit mainly open water areas of reservoirs and large rivers, and are commonly found in current. The mooneye is more widely distributed statewide than the goldeye, which is found mainly in the western half of Tennessee.

They can be caught on light tackle, but are seldom sought by anglers because of their soft and bony flesh. Adult mooneyes range from 12-16 inches. The state record is 1 pound, 4 ounces. The state record for the goldeye is 14 ounces.

Golden Shiner

(Notemigonus crysoleucas)
Other names: Baltimore minnow, minnow, roach

David Roddy

The golden shiner is a lake species preferring clean, clear, quiet, shallow, vegetated areas of lakes, reservoirs, and sluggish stretches of rivers and streams. It eats algae, water fleas, and other plankton organisms, chironomid pupae, aquatic insect larvae, dragonfly nymphs, flying insects, midges, mollusks, and occasionally small fish.

The golden shiner is found throughout Tennessee and is common to abundant. It averages approximately 5 inches in length and ranges between 3-8 inches. The state record is 1 pound, .05 ounces.

Goldfish

(Carassius auratus)
Other names: carp,
Baltimore minnow

David Roddy

Goldfish are not native to Tennessee, and have become established by way of bait bucket releases, hatcheries, and home aquarium releases. While not common statewide, an occasional one may be caught almost anywhere statewide, in ponds, pools, backwaters, and reservoirs.

Goldfish resemble the common carp (page 54), but they do not have barbels at the corners of the mouth while common carp do. When sold as bait, goldfish are sometimes called "Baltimore minnows." They feed mostly on aquatic insects and plant material and commonly range from 10-20 inches in the wild. The state record is 3 pounds, 5 ounces.

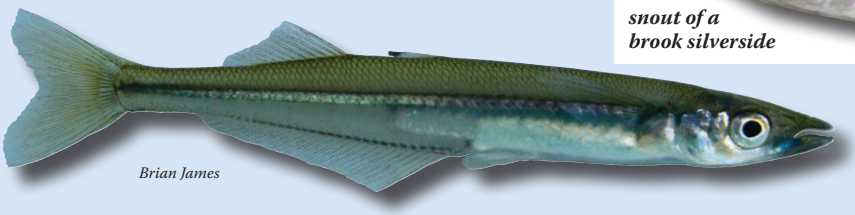
Goldfish are known to hybridize with common carp, creating individuals with characteristics of both species, complicating identification.

Brook Silverside

(Labidesthes sicculus)
Other names: silverside, pin minnow

TWRA Staff

snout of a brook silverside


Brian James

The brook silverside occurs statewide and is an important forage species for many fish such as largemouth bass, white bass, and crappie. It usually prefers the surface area of reservoirs, lakes, and rivers. Often found in schools, they feed on small insects, midges, and zooplankton.

Brook silversides range from 2.5-4 inches, to a maximum of about 5 inches. One other silverside, the inland silverside, is also found in Tennessee and it is listed as an Aquatic Nuisance Species (see page 54).

Stoneroller

(Campostoma sp.)
Other name: horny-head

Brian James

The stoneroller, commonly called "horny-head" because of the conspicuous head tubercles on nuptial (breeding) males, is characteristic of small- to medium-sized streams with clear, cool water. It is also found in moderate, sometimes rapid current, with gravel or rubble bottom, or in pools and riffles, but can also be found in clear reservoirs. It is tolerant of muddy or silty waters. An herbivore, the stoneroller eats algae and other minute plants found in the mud and on stone surfaces.

Stonerollers can be found throughout Tennessee and are usually very common. They average about 4 inches in length and the range is 2-10 inches. The state record is 10 ounces.

Chestnut Lamprey

(Ichthyomyzon castaneus)
Other name: lamprey eel

Brian James

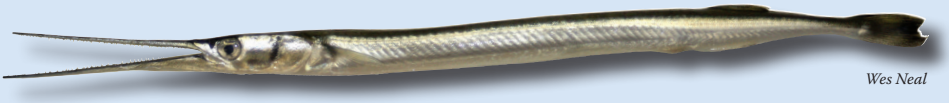
mouth of chestnut lamprey

Chestnut lampreys are one of seven native species of lampreys found in the state and are the most primitive fish in Tennessee. The chestnut lamprey is also one of three species in the state that parasitize other fish. However, these species have not been found to have a detrimental impact on the population of the host fish. While the host fish usually does not die as a direct result of the attack, it may die of secondary infections that develop in the remaining wound where the lamprey was attached. The other four species are not parasitic on fish.

Found statewide, chestnut lampreys usually inhabit rivers, reservoirs, and medium or large streams. Adults begin migrating into smaller streams in early spring and spawn in April or May. Although lampreys may resemble the American eel, lampreys do not have jaws or pectoral fins. The mouths of adults resemble a sucking disc.

Atlantic Needlefish

(Strongylura marina)
Other name: needlefish



Wes Neal

Atlantic needlefish, mainly a marine species, are a recent inhabitant of Tennessee and are thought to have migrated into the Tennessee River from the gulf coast by way of the Tennessee-Tombigbee Waterway. Reported catches have mainly come from Kentucky and Pickwick reservoirs with recent sightings on the Cumberland River.

Needlefish tend to congregate in tailwaters below dams and at steam plants during the winter, and are usually found near the surface. As their name implies, needlefish do not contain much meat, thus they are not of much value as a food fish. They feed mainly on fish such as minnows and shad, with adults ranging from 8-20 inches. The state record is 1.6 ounces.

Their impact on native species is unknown at this time, but could negatively impact the food base of our native sport fish.

Striped Mullet

(Mugil cephalus)
Other name: mullet

David Roddy

Striped mullet are mainly a marine species that has also recently inhabited the Tennessee River, mainly Kentucky Reservoir, by way of the Tennessee-Tombigbee Waterway. Like needlefish, striped mullet have a tolerance for freshwater and are generally found in open water, traveling in schools near the surface below dams and at steam plants. They can also be found near steam plants during the winter.

Adults feed on plants and plant material and the range is 9-15 inches in length. Impacts on Tennessee's native species are currently unknown.

Tilapia

Nile Tilapia *(Oreochromis niloticus)*
Other names: tilapia, cichlid, mouthbrooder

David Roddy

The Nile tilapia is one of many freshwater cichlids that is laterally compressed, deep bodied, with distinctive, regular, vertical stripes extending far down the body including the caudal (tail) fin, variable coloration, and has a long dorsal fin. The native range is in the tropical and subtropical areas of Africa and the Middle East.

This species occurs in freshwater habitats like rivers, lakes, ponds and irrigation channels. Populations are currently established in the states of Mississippi, Florida, and Tennessee. In Tennessee, the species is found in Cheatham and Old Hickory reservoirs, where there is an established fishery due to the "thermal refuge" provided by the steam plants.

Adults reach up to 24 inches in length and up to 9.5 pounds, with the average caught in Tennessee being 8-10 inches. The state record is 6 pounds, 5.5 ounces. The species lives for up to nine years, and tolerates brackish water and survives temperatures between 46-108 F. It is an omnivore, feeding on plankton as well as on higher plants, but will take common baits and lures used to catch bluegill and other sunfish.

Sexual maturity is reached at 3-6 months depending on temperature and reproduction only occurs when temperatures are over 68 F. Spawns may occur every 30 days, allowing several spawnings per year. Females will incubate eggs inside their mouths for approximately a week. Up to 200 fry are kept in the mouth, until fry are free swimming.

The Nile tilapia was introduced the United States for aquaculture purposes for its flavor and high source of protein. It has since been introduced into Tennessee public waters through escape or release from aquaculture ponds and private waters where they have been stocked for vegetation control and forage enhancement.

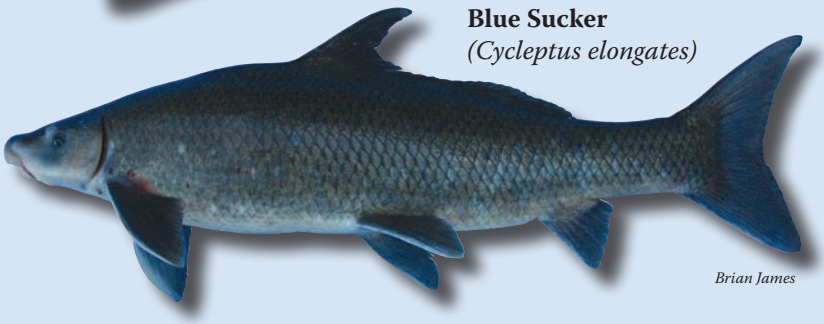
Other Tennessee Fish

Banded Sculpin *(Cottus carolinae)*

TWRA Staff

Bluntnose Minnow *(Pimephales notatus)*

TWRA Staff



Blue Sucker
(Cycleptus elongates)

Brian James

Fathead Minnow *(Pimephales promelas)*

Brian James

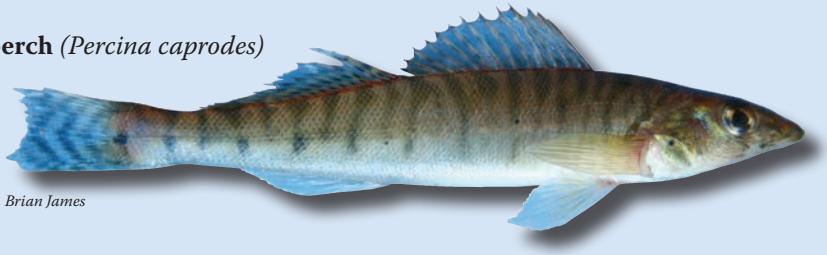
TWRA Staff

Bullhead Minnow *(Pimephales vigilax)*

Creek Chub
(Semotilus atromaculatus)

Bart Carter

Logperch *(Percina caprodes)*



Brian James

Brian James

Northern Hog Sucker *(Hypentelium nigricans)*

Northern Studfish *(Fundulus catenatus)*

Brian James

Brian James

Spotted Sucker *(Minytrema melanops)*

Aquatic Nuisance Species

Aquatic non-native animals and plants that escape or are accidently or purposefully released into waters where they are not native can become a nuisance. Aquatic nuisance species (ANS) can pose a threat to Tennessee's waterways and other aquatic environments, both economically and ecologically. Other terms used in place of "nuisance" may include "invasive, nonindigenous, alien, exotic, and undesirable." Examples of aquatic nuisance fish, crayfish, snails, mussels, clams, and plant species that are either found in Tennessee, or are a potential threat to the state are discussed below.

You can do your part to prevent the spread of aquatic nuisance species by never releasing or stocking fish, plants, or other animals into a body of water unless they currently inhabit that body of water, (this includes any aquatic species from aquariums). In addition, eliminating water from livewells, motors and other equipment before transporting them from one body of water to another will help eliminate introductions of ANS. Anglers who catch an unusual species discussed in this ANS section, or a species that has not been found in Tennessee, should report it to their nearest TWRA office or TWRA's Fisheries Division (page 74). For more information on how you can help, visit **www.ProtectYourWaters.net**, or several of the links found in "Further Reading" (page 73). For more information on Tennessee's Aquatic Nuisance Species, and references to information contained here, visit: **http://www.tn.gov/assets/entities/twra/fish/attachments/ANS_Management_Plan.pdf**.

Alewife *(Alosa pseudoharengus)*
Other names: shad, herring, bigeye herring

The alewife is native to the Atlantic coast from South Carolina to Newfoundland. Many landlocked populations have been established or introduced into about twenty states, including Tennessee. Most introductions have been intentional for use as a forage species. In Tennessee, they were initially stocked into Dale Hollow and Watauga reservoirs, but can now be found in several reservoirs located downstream. There have also been illegal introductions of this species into Norris and possibly other Tennessee reservoirs.

Alewife feed primarily on microscopic plants and animals (zooplankton), but occasionally on fish eggs and small fish. Most alewife average between 2 and 6 inches, but can measure up to 12 inches in length, though these are seldom seen by anglers.

Alewife introductions have had negative impacts on reservoir fisheries in several states, including walleye populations in Tennessee. Alewife and blueback herring (next page) feed on the eggs and recently-hatched walleye young. Also, both alewife

and blueback herring produce thiaminase, an enzyme that destroys thiamine, a crucial enzyme for egg development and survival of many native fish.

Blueback Herring *(Alosa aestivalis)*
Other names: blue herring, shad

TWRA Staff

Blueback herring are native to the Atlantic coast from Novia Scotia to Florida. Landlocked populations have been introduced in several states, including Tennessee, where it was first collected from Melton Hill reservoir in 1998. Since then, it has been found in Tellico and Boone reservoirs. Introductions into these systems is thought to have been by anglers using live bait or intentional stocking as a forage species.

Because they feed primarily on plankton, they are most likely to be found in open water near the surface. They are also known to eat fish eggs. Adults reach lengths up to 12-14 inches, although they average 4-8 inches.

This species has had negative impacts on reservoir fisheries in several states, with introductions coinciding with decreased abundance of black crappie, largemouth bass, and white bass.

Asian Swamp Eel *(Monopterus albus)*
Other names: Asian rice eel, ricefield eel, rice paddy eel

U.S. Geological Survey

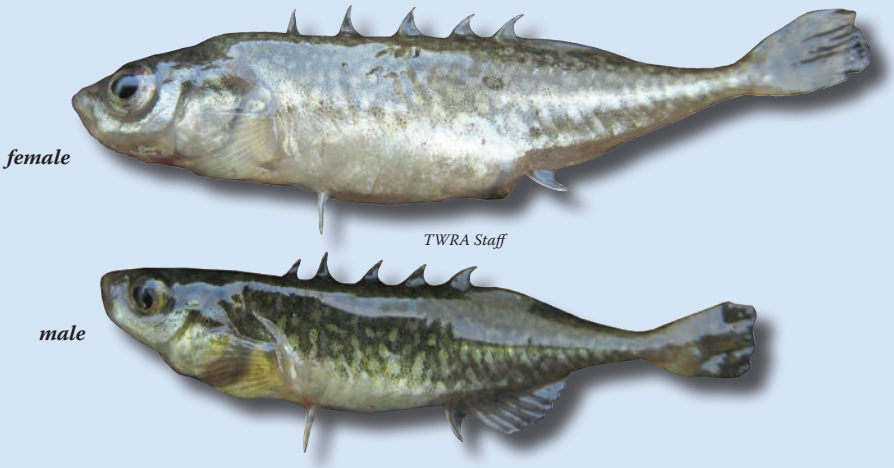
The Asian swamp eel is native to Asia and possibly Northeast Australia. It was introduced to Hawaii prior to 1900, presumably by Asian immigrants as a food fish. It has also been introduced to several waterways in Florida and Georgia.

This eel, with its elongated, snake-like body and small eyes, can grow to 3 feet and weigh up to one pound. Swamp eels feed on land and in the water where they are voracious predators. Food items include aquatic insects, mollusks, freshwater shrimp, crayfish, snails, frogs and fish. They are highly mobile and may travel considerable distances over land to find new feeding and breeding areas. The swamp eel may resemble our native American eel (page 40),

but the swamp eel has no fins.

Detrimental impacts of the swamp eel in Tennessee are currently unknown, but because they are generalized predators, they have the potential to pose serious ecological impacts to native fauna, including fish, frogs, and aquatic invertebrates.

Brook Stickleback *(Culaea inconstans)*
Other name: five-spined stickleback



TWRA Staff

The brook stickleback is native to the Atlantic and Arctic drainages from Nova Scotia to the Northwest Territories, Great Lakes, Mississippi River basins south to southern Ohio and New Brunswick, and west to Manitoba and East British Colombia.

Occurrences outside of its native range have been recorded in 12 states, including Tennessee. Introductions have resulted through escape from hatcheries, contaminated sport fish stockings, and bait bucket releases. This species commonly occurs in shipments of bait minnows from the Midwest, usually mixed with fathead minnows (see page 46). Brook sticklebacks reach a maximum size of 3.5 inches, and occupy streams, swamps, and vegetated bays of lakes. Their diet includes small crustaceans, insect larvae, snails, leeches and fish eggs.

Impacts of this species on native fauna are largely unknown, although it has been noted that it preys on fish eggs and is aggressive.

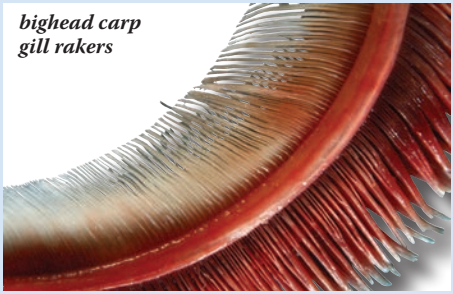
Bighead Carp *(Hypophthalmichthys nobilis)*
Other name: Asian carp

Brian James

Silver Carp *(Hypophthalmichthys molitrix)*
Other name: Asian carp,
jumping carp

TWRA Staff

The bighead and silver carp are large filter-feeding fish native to East Asia and China that were imported into Arkansas in the 1970s for use in aquaculture ponds to control plankton. By the early 1980s both species had escaped into the Mississippi River and its tributaries. They are now well established in the Mississippi River and its tributaries and are becoming more abundant in the Tennessee River system and parts of the Cumberland River system.

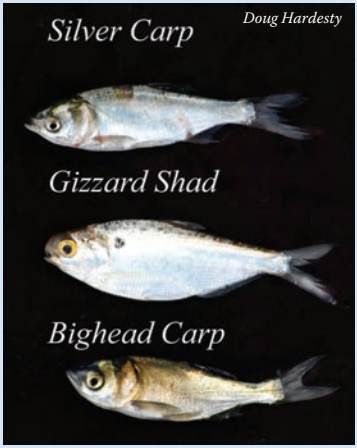


Brian James

They inhabit large river systems, lakes, and impoundments, often feeding in schools at the water's surface. Being filter-feeders, their diet consist of phytoplankton, detritus, zooplankton, and insect larva. Bighead carp can reach lengths of 3 feet and can weigh up to 100 pounds, while the silver carp can weigh as much as 60 pounds. The state record for bighead carp is 90 pounds, and 31 pounds, 15 ounces for silver carp.

Characteristic differences between adult bighead and silver carp:

1) Bighead carp usually have dark blotches along the top (dorsal) area whereas the silver carp does not;
2) The gill rakers (under the gill cover) of the bighead carp are comb-like, whereas the gill rakers of the silver carp are sponge-like (see page 51);
3) Bighead carp have a smooth keel (ridge) that extends only partway along the belly from the vent, whereas on the silver carp the keel extends to the throat along the belly.



young specimens

Be aware that hybrids of these two species may exhibit characteristics of both species.

The young of both bighead and silver carp (above) look similar to several species of native baitfish, such as gizzard and threadfin shad (see page 34), and could therefore be spread through the use or release of live bait collected from infested waters. However, both native shad species have a dorsal filament, a dark circular spot behind the gill covers, and jagged (rough) keels on their bellies. The large, low-set eyes of these Asian carp may also help separate them from other native bait fish species.

Because of their diet, both species may compete for food with native planktivores, including paddlefish, bigmouth buffalo, gizzard shad, many species of larval fish, and freshwater mussels. The silver carp can also leap up to 10 feet out of the water when disturbed by watercraft and may potentially cause human injury or fatality.

Note that these two species, along with the black carp (below) cannot be possessed or transported alive (see page 71).

Black Carp *(Mylopharyngodon piceus)*
Other names: snail carp, black amur, Chinese roach

The black carp is native to rivers of East Asia and was first brought into the U.S. in the early 1970s and again in the 1980s as a food fish and as a biological control of parasite carrying snails in aquaculture ponds.

The black carp has been found in the Tennessee portion of Mississippi River since 2014 and recent collections have documented their presence in Mississippi River tributaries, Reelfoot Lake, and Kentucky Reservoir (TN River). Their diet consists mainly of snails and mussels, but they will also eat freshwater shrimp, crayfish, and insects. They can grow to lengths greater than 4 feet and weigh more than 80 pounds.

The black carp can compete for food with native fish species and has the potential to seriously impact native mussel and snail populations, many of which are threatened or endangered.

Grass Carp *(Ctenopharyngodon idella)*
Other names: white amur, amur, carp

Like the previous three Asian carp, the grass carp is native to several large rivers of East Asia, and has been widely introduced across the U.S. into small ponds and lakes for the purpose of controlling aquatic vegetation. Grass carp were first imported to the U.S. in 1963 for research on their use as a control for nuisance aquatic vegetation.

Grass carp are found throughout the state, usually in small ponds and lakes. They are also often found in rivers and lakes where they have escaped from stocked ponds. In Tennessee, only triploid (sterile) grass carp are legal to stock into private ponds and small lakes for control of aquatic vegetation.

Grass carp are capable of surviving in all but the smallest ponds and can tolerate a wide range of temperatures. This transplant feeds on most forms of aquatic vegetation and will even eat terrestrial vegetation that comes in contact with the water. They are rarely caught by anglers, but when caught, they average about 20 inches, with a range of 10-36 inches. They can reach lengths greater than 4 feet and can weigh over 50 pounds. The state record is 70 pounds.

Grass carp have been known to clean entire lakes of all aquatic plants and then consume organic detritus and animal material. Negative impacts on native fauna include competition for food with invertebrates and fish, along with changes in the composition of the aquatic plant, phytoplankton, and invertebrate communities. They can also cause enrichment and eutrophication of ponds and lakes when they expel undigested plant material.

Common Carp *(Cyprinus carpio)*
Other names: carp, Israeli carp, mirror carp, leather carp, buglemouth

Eric Ganus

Common carp are not native to North America and were introduced into the Northeast in the late 1800s. Since then, they have expanded their range to every state, except Alaska. Common carp inhabit ponds, lakes, reservoirs, streams and rivers, and can flourish in muddy waters with low dissolved oxygen and high water temperatures.

The common carp has a barbel on each side of the upper jaw, which helps distinguish it from other carp-like species.

Carp will eat any plant or animal matter found on the stream or lake bottom. Important foods are plants, small crustaceans, and worms. Carp are abundant throughout the state and average 15 inches in length with a range of 10-32 inches, and can weigh over 50 pounds. The state record is 53 pounds.

Genetic strains are frequently seen that have only a few large scales ("mirror carp"), or lack scales entirely ("leather carp"). Large numbers of common carp are caught and sold annually by commercial fishers and are considered a sportfish in other parts of the world.

The common carp stirs up the bottom during feeding, resulting in increased siltation and turbidity which can degrade clean substrates (needed for fish spawning), smother fish eggs, and destroy rooted aquatic plants that may provide habitat for native fish species.

Inland Silverside *(Menidia beryllina)*
Other names: silverside, pin minnow

Brian James

snout of an inland silverside

TWRA Staff

The inland silverside is native to coastal and freshwater habitats from Massachusetts to Mexico, inland up the Mississippi River to Illinois, including the Arkansas and Red Rivers. It has been introduced outside of its native range in about 6 other states, where it was intentionally stocked as forage for sport fish in most locations. In Tennessee, this species has expanded from the western part of the state to invade the Cumberland and Tennessee river systems, and may be expanding by natural dispersion.

Inland silversides average from 3-4 inches, to a maximum of about 5.5 inches, with a diet consisting of midge larvae, small insects, and zooplankton. It is similar in appearance to the brook silverside, but the inland silverside does not have a beak-like snout (see brook silverside, page 42). In addition, the scales on an inland silverside are easily seen with the naked eye.

Introduced populations of inland silverside in some states have displaced or replaced several other fish species, including brook silversides, through competition for food. The effect of the inland silverside invasion on native aquatic fauna in the Cumberland and Tennessee rivers is currently unknown, and more time is needed to fully understand the impact it may have on brook silverside populations.

Round Goby *(Neogobius melanostomus)*

The round goby is native to marine and freshwater environments in Eurasia. First discovered in 1990 in Canada, they were introduced into the Great Lakes by way of transoceanic freighter ballast water from the Black and Caspian seas.

Round gobies are not currently present in Tennessee, but have access to America's largest watersheds, including the Mississippi River. Being a bottom-dwelling fish, gobies prefer rocky or gravel substrates, and are voracious feeders, eating small fish, fish eggs, aquatic insects, and exotic zebra mussels (page 64). They average 3-6 inches in length. Round gobies look similar to our native sculpins (page 46), but the goby has fused pelvic (bottom) fins, whereas our native sculpins have separate pelvic fins.

Being such an aggressive fish with voracious feeding habits, round gobies may affect native species such as sculpins, darters, or other bottom-dwelling fish through competition for habitat and food. They may also impact game fish populations by feeding upon the eggs of nest spawners such as smallmouth bass.

Rudd *(Scardinius erythrophthalmus)*
Other name: redfin

The rudd is native to Europe and Central Asia and was initially introduced to the U.S. as an ornamental fish in the early 1900s. More recently, this species has been reared by fish farmers and sold as bait in several states, and bait bucket releases are probably the primary method of introduction. The rudd has not been found in Tennessee, but has been introduced into about 20 other states, including the neighboring states of Alabama, Arkansas, and Missouri.

Adult rudd are commonly 8-12 inches long and feed on zooplankton, aquatic insects, plants, algae, crustaceans, and occasionally, small fish and fish eggs. The rudd resembles our native golden shiner (page 41), but the rudd has a scaled keel on the midline of the belly and adults have bright red fins.

The impact of the introductions of this species on native species is largely unknown. It has been shown that rudd and golden shiner are capable of hybridizing in a laboratory, and this could result in genetic integrity implications to native golden shiner populations. Additionally, the rudd competes with native fish for invertebrate food sources.

Ruffe *(Gymnocephalus cernuus)*
Other names: Eurasian ruffe, pope

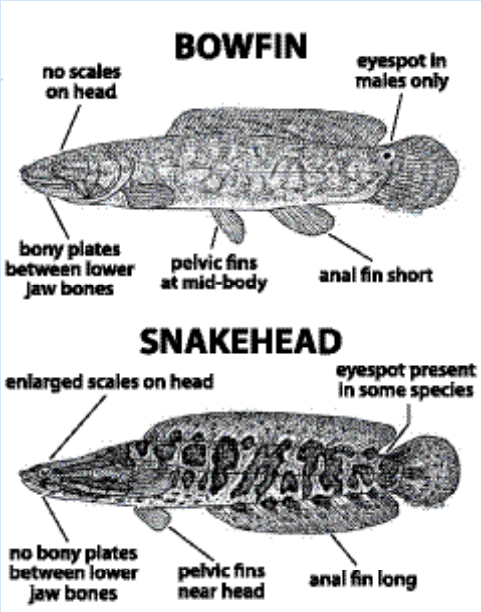
The ruffe is native to France, England, most of Siberia, and the Baltic Sea. It was first collected in North America in 1986 from the St. Louis River at the border of Minnesota and Wisconsin. It is mainly found in and around the Great Lakes region

of the U.S. Like many others, this species was probably unintentionally introduced with discharged ballast water from ships.

Adult ruffe average 5-6 inches, but can reach lengths up to 10 inches. The majority of its diet consists of benthic aquatic invertebrates, and it is known to eat fish eggs. In some areas where the ruffe has been introduced, it has quickly become the dominant species, comprising an estimated 80 percent of fish abundances. Several native species have declined since the introduction of this fish into the Great Lakes region, which suggests that ruffe compete for food with native benthic-feeding fishes.

Snakehead *(Channa and Parachanna spp.)*

U.S. Geological Survey



The Northern snakehead, one of approximately 30 species of snakeheads, is native to parts of Asia and Africa. The first report of this fish in the U.S. came from California in 1997, and has since been found in about 10 other states, including Arkansas and Mississippi. In Tennessee, a dead giant snakehead was found in a small lake in West Tennessee in 2005. They were typically introduced into these states when live fish purchased for food or for aquariums were released into public waters. ***It is illegal to possess live snakeheads in Tennessee.***

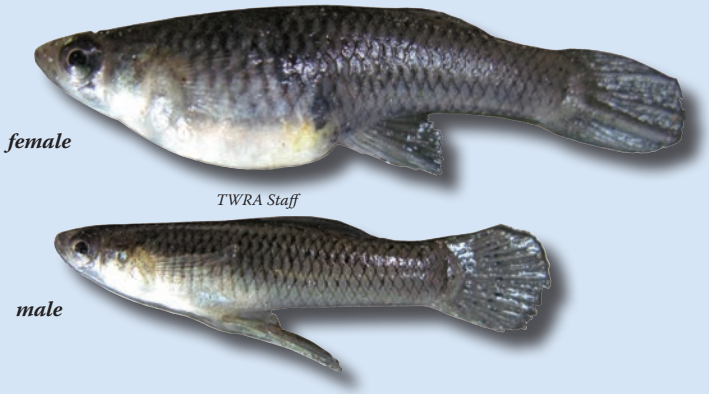
Snakeheads inhabit small to large streams, rivers, ponds, reservoirs, and lakes, and are often found in shallow areas where there is aquatic vegetation. Juvenile snakeheads eat zooplankton, insect larvae, small crustaceans, and small fish, whereas adults become voracious predators consuming fish, crustaceans, frogs, reptiles, small birds, and mammals. Many species can attain a size up to about 35 inches in length.

Snakeheads look similar to our native bowfin (page 39), except snakeheads have: 1) pelvic fins close to the gills, 2) an elongated anal fin and 3) no bony plate under the throat between the jaws. Both of these species have small teeth in the mouth.

All reports of snakeheads caught by anglers in Tennessee thus far have been bowfins, but TWRA encourages anyone who thinks they may have caught a snakehead to keep it and contact the TWRA Fisheries Division.

The predatory nature of snakeheads indicates that their introduction could negatively impact populations of native fishes through direct predation, competition for food resources, and alteration of food webs. If so, the impacts to recreational fishing could be substantially detrimental over time.

Western Mosquitofish *(Gambusia affinis)*
Eastern Mosquitofish *(Gambusia holbrooki)*
Other name: Gambusia



TWRA Staff

The western mosquitofish was probably native to the coastal plain from West Alabama northward to southern Illinois, and westward into East Mexico where the extent of its range is uncertain. It is native to mainly West Tennessee, but has expanded eastward by a combination of natural dispersal and undocumented introductions.

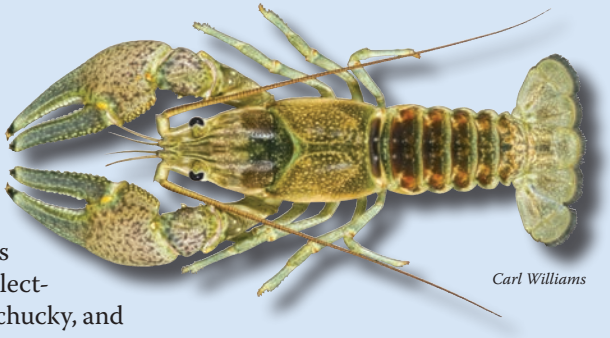
The eastern mosquitofish is native to the Atlantic and Gulf Coast Slope drainages as far west as East Alabama. Exact determination of the native range is difficult because these two species have been widely stocked by humans as a biological control for mosquitoes. They have been stocked in at least 36 states outside of their known native range.

Both species are very similar in appearance, and have an upturned mouth, allowing them to be an effective surface feeder. They feed on aquatic and terrestrial insects, microcrustaceans, snails, fish eggs, and larval fish, including their own young. Females reach lengths of 2.5 inches, while adult males are smaller and only attain a length of 1.5 inches.

Although mosquitofish prey on mosquito larvae and are widely introduced as mosquito control agents, review of the literature on mosquito control has not supported the view that mosquitofish are effective in reducing mosquito populations. Mosquitofish introductions can lead to algal blooms when they eat zooplankton grazers or cause an increase in mosquitoes if they eat invertebrate predators. Mosquitofish are also extremely aggressive and can affect native fishes through direct

competition and often attack, kill, or eat other fish. The biggest negative impact of mosquitofish is on the federally endangered Barrens topminnow *(Fundulus julisia)* in Tennessee due to their predation of topminnow eggs and larvae.

Kentucky River Crayfish *(Faxonius juvenilis)*
Other name: rusty crayfish


Carl Williams

The Kentucky River crayfish is native to tributaries of the Ohio River in southwestern Ohio, northern Kentucky, and southeast Indiana. It has been spread primarily through bait bucket releases and in Tennessee, has been collected in the Clinch, Holston, Nolichucky, and Tellico rivers.

Kentucky River crayfish inhabit lakes, ponds, streams, and rivers, and utilize rocks, logs, or other debris for cover. They feed on a variety of aquatic plants and invertebrates, clams, fish eggs, and small fish, and can reach 4 inches long.

When introduced, negative impacts of this crayfish include destruction of aquatic vegetation, direct competition with native crayfishes, and predation on other aquatic species.

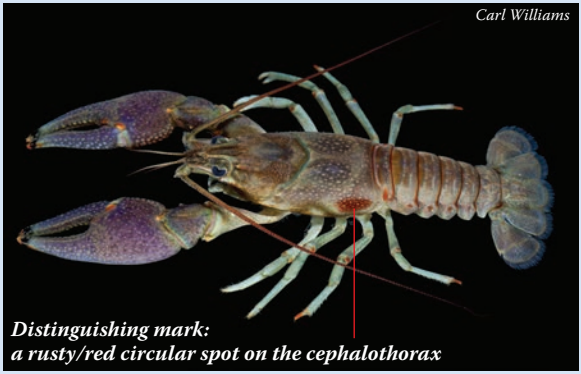
Marbled Crayfish *(Procambarus fallax f. virginalis)*
Other name: Marmorkrebs

Andre Karwath

The marbled crayfish is a parthenogenetic crayfish, a form consisting of only females which are capable of producing offspring with unfertilized eggs. The origin of this unusual form is not certain, but most biologists agree it was probably derived from captive populations of the slough crayfish *(Procambarus fallax).* A native species to Florida and southern Georgia, the slough crayfish is a popular species in the pet trade industry, through which it has been distributed to aquarium enthusiasts around the world. Although no wild populations of the marbled crayfish have been documented in the United States to date, it has become established in several other countries.

Because of its ability to establish a wild population from the release of a single specimen, wildlife managers consider it an extremely high risk invasive species with a potential of causing harm to native aquatic organisms.

Rusty Crayfish
(Faxonius rusticus)



The rusty crayfish is native to the Ohio River system in Kentucky, Ohio, and Indiana, and the Lake Erie drainage in Michigan and Ohio. Primarily through bait bucket releases, it has been introduced into at least 20 additional states including two sites in Tennessee; the German Creek embayment of Cherokee Reservoir (Grainger County), and Little Creek in the city of Bristol (Sullivan County).

Like most crayfish species, the rusty crayfish is omnivorous, feeding on a variety of food items, including aquatic plants and algae, small insects, crustaceans, and snails. Dead or dying fish and other forms of carrion are also consumed. The rusty crayfish can reach lengths up to 4 inches and typically has a life span from 2-3 years.

Because of its aggressive behavior and ability to adapt to a variety of aquatic habitats from small streams to large rivers, and even reservoirs, the rusty crayfish can quickly expand its range causing negative impacts to native aquatic organisms including our native crayfish and fish species.

Virile Crayfish *(Faxonius virilis)*
Other name: Northern crayfish

Carl Williams

The virile crayfish is native as far north as Hudson Bay. Southward, it occurs from New England to western Montana and through the Missouri, Mississippi and Ohio River basins to Oklahoma and northern Arkansas. It has been widely introduced outside its native range and, in Tennessee, this species has been introduced to the Nolichucky, French Broad, and Holston river systems, as well as a tributary to Watts Bar Reservoir. It is well established in Douglas Reservoir and its tributaries. Most introductions have probably been the result of bait bucket releases.

The virile crayfish is large, with adults ranging from 2-5 inches, and can be found in rivers, streams, and ponds with abundant cover such as rocks, logs, or deposits of organic debris.

Negative impacts include destruction of aquatic vegetation, direct competition with native crayfish, possible hybridization, and predation on other aquatic species.

Asian Clam *(Corbicula fluminea)*
Other name: corbicula

U.S. Geological Survey

The Asian clam is native to China, Korea and Russia. It was first collected in the U.S. in 1938 from the Columbia River in Washington State. It is now found in at least 38 states, including Tennessee, where it is found in almost every river and reservoir, with the exception of a few creeks and streams in the Blue Ridge and on the Cumberland Plateau.

This species is thought to have entered the U.S. as a food item used by Chinese immigrants. Current methods of introduction include bait bucket releases, introductions by people who buy them as a food item in markets, and by natural dispersion of their free-swimming larvae.

The Asian clam is a small, filter-feeding bivalve that rarely exceeds 1.5 inches in length, and occupies silt, sand, and gravel substrates in creeks, rivers, reservoirs, and ponds.

The greatest ecological impact of this species' introduction is competition for habitat and food with our native mussel species, many of which are threatened or endangered.

Channeled Apple Snail *(Pomacea canaliculata)*

U.S. Geological Survey

The channeled apple snail is widely distributed in South America, and has been introduced throughout Southeast Asia where it has become a major crop pest, particularly in rice fields. Introductions in the U.S. (through aquarium releases) have been detected in about eight states but not in Tennessee. However, they have been found in the neighboring states of Alabama and Georgia.

The channeled apple snail is a large globular snail that can reach lengths greater than 3.5 inches. This species is a voracious herbivore and will consume almost any plant. It is a major crop pest and poses a serious threat to many wetlands around the world through potential habitat modification and competition with native species.

Chinese Mystery Snail *(Cipangopaludina chinensis)*
Other names: Asian mystery snail, Chinese apple snail, Asian apple snail

U.S. Geological Survey

The Chinese mystery snail is native to Southeast Asia, Japan, and East Russia. This species has become widespread in scattered locations and is often found in ponds, streams, or lake margins where there is vegetation and a soft substrate.

This snail was first found in California Chinese markets in 1892. It is now established on the West and East coasts, the Great Lakes region, and some of the Gulf states. In Tennessee, it has been found in a lake in Nashville and a pond in Hawkins County.

Chinese mystery snails can reach 2.5 inches in length and feed on algae such as diatoms, phytoplankton, and detritus. This species can serve as a vector for various parasites and diseases which can infect humans and they compete with native snails for food and space.

New Zealand Mud Snail *(Potamopyrgus antipodarum)*

U.S. Geological Survey

The New Zealand mud snail is native to freshwater streams and lakes of New Zealand and was first discovered in the U.S. in the Snake River in Idaho in 1987. They are now established in about 10 western states, and their rapid range expansion is probably the result of snail hitchhikers attached to boots, waders, nets, and other equipment. This snail is a very small aquatic snail ranging from less than ¼ inch up to ½ inch in length. It feeds on diatoms and plant and animal detritus.

U.S. Geological Survey

In suitable habitats, this snail can reach high densities (greater than 100,000/m^2), and has been shown to drastically alter primary production in some streams in western states. Certain types of aquatic invertebrates (mayflies, stoneflies, and caddisflies) which are primary foods for trout, darters, and young fish, also appear to be declining in abundance in some western states. Introductions of this snail may also have implications to native snails through direct competition.

Zebra Mussel *(Dreissena polymorpha)*

David Roddy

Zebra mussels are native to the Black, Caspian and Azov seas, and were first discovered in North America in 1988 in the Great Lakes. The release of larval zebra mussels during the ballast water exchange of commercial cargo ships traveling from the Black Sea to the Great Lakes is thought to be the way it was introduced.

By 1992, zebra mussels were established in many rivers south of the Great Lakes including the Cumberland, Mississippi, and Tennessee rivers. Zebra mussels are small, reaching a maximum length of about 1.5 inches, and feed primarily on algae by filter-feeding.

While the harmful impacts of zebra mussels are many, they are notorious for colonizing and constricting water flow to hydro-electric and nuclear power plants, public water supply plants, and industrial facilities. Fishing gear and boats can become colonized and fouled if left in the water for long periods, while deterioration and corrosion of steel and concrete structures can also occur.

Zebra mussels also colonize on our native freshwater mussels, many of which are endangered. Once attached to native mussels, zebra mussels restrict valve operation, cause shell deformity, smother siphons, compete for food, and impair movement.

Didymo *(Didymosphenia geminata)*
Other names: rock snot

Tyler Baker

Didymo is a single-celled freshwater diatom that can be identified under a microscope by its bottle-like shape. It is very large in size, compared to other diatoms. Didymo cannot be observed by the naked eye until large colonial masses are formed.

Large colonies of didymo cover the bottom of rivers appearing like a felt carpet, tufted masses, or even a white strand of toilet paper. Colonies of didymo are white to brown and not slippery to the touch, but rather feel more like wet wool. Didymo is native to North America, but only recently has it taken on characteristics of an invasive species. Many of these blooms are located at popular trout fisheries, suggesting that anglers are a likely vector for the spread of this diatom.

In Tennessee, the known distribution of didymo is the Clinch River below Norris Dam, South Holston River below South Holston Dam, Watauga River below Wilbur Dam, Holston River below Cherokee Dam, and Obey River below Dale Hollow Dam.

Ongoing research seeks to identify effective control methods, biological effects, and environmental factors contributing to blooms.

Anglers do not like didymo because it will foul their fishing tackle and possibly reduce the number of fish available to catch, although this has not been documented in Tennessee waters. Blooms also degrade the aesthetics of rivers.

Eurasian watermilfoil *(Myrophyllum spicatum)*
Other name: milfoil

Chris Evans

Eurasian watermilfoil is a submersed, bottom-rooted perennial, generally with multiple stems that arise from the root crown. Stems are branched with the leaves typically in whorls of four, each "feather-like," ¾-1½ inches long with 12-24 finely dissected segments on each side of a central axis. Male and female flowers are on an emergent spike that extends a few inches above the surface of the water.

Although Eurasian watermilfoil forms viable seeds, its primary method of spread is by fragmentation. Fragments may be formed by mechanical breakage associated

with boat traffic, flow and wave action and by auto fragmentation that occurs after flowering and also near the end of the growing season. It begins its growth earlier in the growing season than most other species of submersed macrophytes and branches near the surface to form a dense canopy that prevents light penetration and functions to exclude other species of submersed plants.

Chris Evans

In Tennessee, this species is established primarily in reservoirs of the Tennessee River system at depths up to 12 feet. It adversely impacts boating and various types of water-based recreation, restricts access to ramps and other facilities, and reduces the aesthetic value in areas of developed shoreline.

The native range of Eurasian watermilfoil includes Europe, Asia, and North Africa. It was introduced into the United States in the early 1940s. This species is now widespread in the eastern United States, ranging westward from the New England states to Minnesota and southward to Florida and Texas. There are also populations in Arizona, California, Oregon and Washington. In Tennessee, Eurasian watermilfoil occurs in Kentucky, Nickajack, Chickamauga, Watts Bar, Fort Loudoun, Tellico, and Melton Hill reservoirs.

Eurasian watermilfoil primarily spreads from waterbody to waterbody by fragments on boat trailers and propellers of motors. Once established within a waterbody or drainage, watermilfoil can rapidly spread by fragments that are dispersed by flow and wave action.

Hydrilla *(Hydrilla verticillata)*

Hydrilla is a submersed, rhizomatous, bottom-rooted perennial with branching stems. Small, pea-like tubers .25-.50 inches long form at the ends of spreading rhizomes in bottom sediments. Leaves along lower stems are opposite or in whorls of 3 with the number of leaves in whorls typically increasing to 5-7 along the upper portion of stems. Leaves have toothed margins and small spines along the mid vein on the underside. Two forms of hydrilla are found in Tennessee: a dioecious form that has male and female flowers on separate plants and a monoecious form that has male and female flowers on the same plant.

David Roddy

Hydrilla spreads primarily by fragmentation and can survive drawdowns and

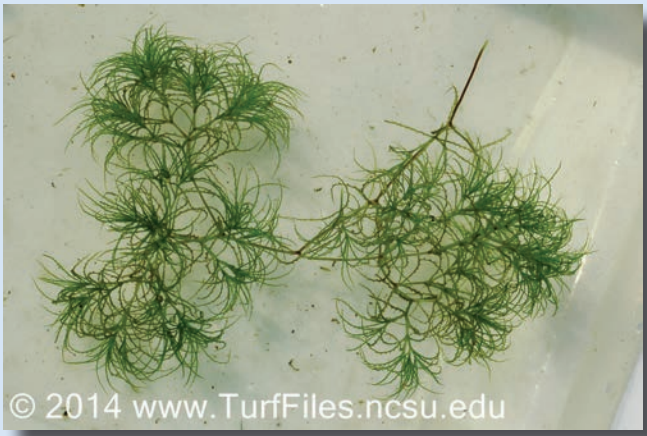
other adverse conditions as a tuber. Stems of hydrilla branch near the water surface and form a dense canopy that can "shade out" other species of submersed plants. Because hydrilla has a lower light requirement than most other species of submersed plants, it grows at greater depths and has been observed to reach the surface in 15 feet of water. Hydrilla has replaced Eurasian watermilfoil in many areas and continues to expand into habitat formerly colonized by Eurasian watermilfoil.

Because hydrilla can form dense surface mats, has a very high biomass, and produces large numbers of fragments, it can harm the aesthetics of waterways and negatively impact boating and other types of water-based recreation. It can affect water quality and clog screens at water intakes.

In Tennessee, it grows in reservoirs, rivers, springs, ponds, canals and small lakes. It is well-established in Chickamauga, Nickajack, Pickwick, and Kentucky reservoirs and in some watershed lakes near Reelfoot Lake.

The primary method for the spread of hydrilla from one waterbody to another is by fragments on boat trailers and propellers of motors. Once established within a waterbody, hydrilla can rapidly spread by fragments that are dispersed by flow and wave action. Hydrilla can also be spread as an aquarium plant or as a contaminant growing with other aquatic species that are sold as ornamentals for water gardens.

Spiny-leaf naiad *(Najas minor)*
Other name: brittle naiad



Spiny-leaf naiad is a submersed, bottom-rooted annual, with a bushy appearance as a result of profuse branching from the upper portion of the stem. The leaves are opposite to subopposite, stiff and recurved in the late growing season, 0.25-1.5 inches long and about a 0.25 of an inch in width. Leaf margins have 7-15 conspicuous teeth per side and an expanded sheath at the base of each leaf. Male flowers and female flowers are on the same plant, the fruit that is produced is greenish and slightly curved. The seeds, one per fruit, also are slightly curved, 0.75-1.25 inches long with rectangular areolae in longitudinal rows.

Spiny-leaf naiad is an annual species that regrows from seed and is most common in reservoirs and ponds. Because the spiny-leaf naiad regrows from seed, it is adapted to colonization of drawdown zones of reservoirs that are dewatered during the winter months. The seed tolerates drying and freezing conditions that often eliminate perennial species that regrow from underground vegetative parts.

Because spiny-leaf naiad grows in shallow water areas in dense colonies, it can adversely impact water quality and various types of water-based recreation and access to ramps and other facilities in areas of developed shoreline. During the late summer months, spiny-leaf naiad undergoes a natural "breakup" and stems with leaves float to the surface to form dense, free-floating mats that frequently become covered with algae and produce a smelly odor.

This species was introduced into the United States by shipping or possibly as an aquarium introduction. It is widespread in the eastern United States from Illinois to New York, south to Florida and west to Arkansas. Spiny-leaf is widely distributed in Tennessee. All of the main stem TVA reservoirs along the Tennessee River have, or in the past, have had populations of this species.

Once established in a waterbody, spiny-leaf can spread by seed that remains attached in the leaf axils of floating fragments. Seed in the substrate may also be carried and moved to other areas by flow and wave action or by waterfowl feeding on them. As is the case with most submersed plants, fragments on boat trailers and propellers of motors are another means of spread.

Fish As Pets

Many people enjoy having fish and other aquatic life in aquariums, backyard ponds or water gardens. Part of the responsibility for having these "artificial environments" is to know that some fish and aquatic plants require specialized conditions and many can outgrow the size of the aquarium or water garden. Whatever the situation, whether the family gets tired of the fish or they outgrow the available space, it is important to never release these fish into the natural environment.

It is important to never dump any aquatic plants or water from the aquarium or water garden into or near any body of water or storm drain. While many of these organisms will die, some will be able to survive. Those that survive have the potential to create negative impacts on our natural environment and native species. Because of these potential impacts, it is illegal for anyone to stock or release any plant or animal into the public waters of the state.

For more information about prevention, impacts, and disposal of unwanted aquatic life, visit **www.habitattitude.net.**

Some of the more common fish species that are sold as pets and that have been caught by anglers in Tennessee are discussed below.

Oscar: *(Astronotus ocellatus)*

Howard Jelks

A native of South America, the oscar is a fish species in the aquarium trade that has been caught or reported in Tennessee and in at least 19 other states or U.S. territories. Although established in Florida since the late 1950s as a result of a fish farm release, they have recently been reported by anglers in Tennessee. It is believed their presence is the result of illegal releases/stockings by aquarium owners. Wild caught oscars are normally dark in color with one or more orange-ringed spots (or ocelli) near the tail fin and/or the dorsal fin.

Oscars commonly grow to 9-14 inches in length with a weight over 2 pounds, and feed on fish, crayfish, worms, and insect larvae. Although the impact of oscars on native species is unknown at this time, the hope is they will not survive once water temperatures drop below their lethal limit of approximately 53 F.

Pacu: *(Myleus and Colossoma spp.)*

Dustin Myles

Pacu, a common aquarium species that is closely related to (and looks like) the piranha, is occasionally caught by anglers in Tennessee. As in most cases in Tennessee, their presence is a result of illegal releases by aquarium owners. A native of South America, the pacu can easily outgrow their aquarium space since they can reach two feet or more in length. For this reason, they are not recommended for most aquarium owners.

Pacu mainly eat seeds, nuts and vegetation in the wild, and being a tropical fish, it is believed they will die when exposed to cold water temperatures (unless they inhabit a thermal refuge such as a steam plant). However, if released during the summer, pacu may survive temporarily and may compete with native species for habitat or introduce exotic parasites or diseases into the environment.

In addition to attaining a larger size, pacu have square, human-like teeth, sometimes in a double row, with a slight underbite, whereas piranha have pointed, sharp teeth with a heavy underbite. Most piranhas normally attain a length up to 10-12 inches, although some species may grow larger. To add to the confusion, one of the common aquarium species of pacu is the red-bellied pacu, while a common aquarium species of piranha is the red-bellied piranha.

Redtail Catfish: *(Phractocephalus hemioliopterus)*

Brian James

As with the previous two species, the redtail catfish is a native of South America. In 2010, a couple of specimens were reported to have been caught from the Cumberland River and may be the result of either a release from an aquarium or escapement from backyard ponds during the Nashville flood in May 2010.

The impacts of the redtail catfish on native fish species is unknown, although they are very predacious and will eat anything they can get in their mouth. This tropical fish should not survive Tennessee winters. However, steam plants could provide thermal refuges. Because they get very large (up to 2-3 feet or more, and over 50 pounds) and will eat about any fish smaller than themselves, redtail catfish are not suitable for most aquarium owners.

Again, instead of illegally releasing fish or other aquatic animals or plants into public waters of the state, aquarium owners should review the information at **www.habitattitude.net** for advice on disposing of unwanted aquarium species.

Don't dump that fish!

Help keep aquarium fish where they belong.

Illustration © Department of Primary Industries and Regional Development, Western Australia

Aquatic Animals Prohibited In Tennessee

It is unlawful to possess or transport live specimens of the following animals in Tennessee:

Blueback Herring: *(Alosa aestivalis)*.....49
Swamp Eels: *(all members of the Family Synbranchidae)*.....49
Bighead Carp: *(Hypophthalmichthys nobilis)*.....51
Silver Carp: *(Hypophthalmichthys molitrix)*.....51
Black Carp: *(Mylopharyngodon piceus)*.....52
Round Goby: *(Neogobius melanostomus)*.....55
Rudd: *(Scardinius erythrophthalmus)*.....56
Ruffe: *(Gymnocephalus cernuus)*..... 56
Snakehead: *(all members of the Family Channidae)*.....57
Marbled Crayfish (Marmorkreb): *(Procambarus fallax f. virginalis)*..... 59
New Zealand Mud Snail: *(Potamopyrgus antipodarum)* 63
Zebra Mussel: *(Dreissena polymorpha)* 63

Live Bait Regulations

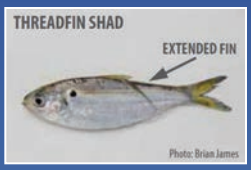
Tennessee has live bait regulations pertaining to which species can be used for bait, and how they can be harvested, sold and transported. For the current live bait regulations pick up a copy of the *Tennessee Fishing Guide* wherever fishing licenses are sold or log on to the TWRA website at www.tnwildlife.org to review it.

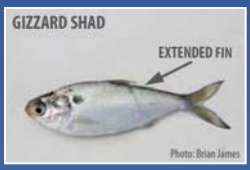
Under no circumstance shall live fish, crayfish, or salamanders be intentionally released into Tennessee waters away from the waters from which they were harvested.

DO NOT USE LIVE ASIAN CARP FOR BAIT

Bighead and silver carp are illegal to possess alive. Shad are legal bait fish.

The easiest way to tell them apart is to look at the dorsal (top) fin. Both shad have a long, thread-like fin that extends toward the tail. Asian carp do not have this thread-like fin.





Tennessee Angler Recognition Program & First Fish

Anglers have a way to be acknowledged for their fishing accomplishments in the Volunteer State. The Tennessee Angler Recognition Program (TARP) is designed to acknowledge anglers who catch any of the current twenty-five species of fish that meet or exceed minimum trophy lengths, to encourage catch-and-release of trophy-size fish, and to provide the TWRA with information documenting large fish caught throughout the state.

TARP should not be confused with the State Record Fish Program which recognizes anglers who catch a new state record fish (largest by weight for that species in the state). Instead, TARP recognizes anglers who catch trophy-size fish that are not necessarily state records.

The First Fish Program recognizes and presents anyone catching their first fish in Tennessee a certificate for free.

For further information about TARP, specific qualifications, qualifying species, an application form, along with information about the State Record Fish Program and the First Fish Award, consult the *Tennessee Fishing Guide*, the TWRA website, or call 615-781-6575.

Further Reading

For individuals interested in a more comprehensive list of fish and aquatic nuisance species, along with more detailed information concerning their description, life history, habitat requirements and distribution, the following publications and websites are recommended. These sources were used in-part for information in this guide.

Etnier, David A. and W.C. Starnes. 1993. The Fishes of Tennessee.
The University of Tennessee Press, Knoxville. 681 pp.
or view at: http://trace.tennessee.edu/utk_utpress/2/

Pflieger, William L. 1975. The Fishes of Missouri.
Missouri Department of Conservation, Jefferson City. 343 pp.

Mettee, M.F., P.E. O'Neil, and J.M. Pierson. 1996.
Fishes of Alabama and the Mobile Basin. State of Alabama. 820 pp.

Page, Lawrence M. and Brooks M. Burr. 1991.
A Field Guide to Freshwater Fishes of North America, North of Mexico.
New York: Houghton Mifflin Co.

Walls, Jerry G. 2009. Crayfishes Of Lousiana.
Louisiana State University Press. 240pp.

http://www.tn.gov/assets/entities/twra/fish/attachments/ANS_Management_Plan.pdf

http://www.invasivespeciesinfo.gov/aquatics/main.shtml

http://www.twra4streams.homestead.com

http://stopaquatichitchhikers.org

http://explorer.natureserve.org

www.fws.gov/fisheries/ans

http://www.fishbase.org

http://www.invasive.org

http://www.asiancarp.us

http://www.aquatics.org

http://www.tnfish.org

http://nas.er.usgs.gov

Tennessee Wildlife Resources Agency

All office Hours: 8:00 a.m. – 4:30 p.m.
Monday – Friday (local time)
Website: www.tnwildlife.org

Central Office – Nashville
Ellington Agricultural Center
5107 Edmondson Pike, Nashville, TN 37211
Nashville, TN 37204 615-781-6500
Boating Education/Safety 615-781-6566
Boat Registration.....615-781-6522
Director's Office.....615-781-6552
Fisheries Division 615-781-6575
Information & Education 615-781-6502
Law Enforcement 615-781-6580
License Division 615-253-5189
Wildlife & Forestry Division 615-781-6610
Telecommunications Device for the Deaf.....615-781-6691

West Tennessee – Region I
200 Lowell Thomas Drive
Jackson, TN 38301 731-423-5725
Toll Free.....1-800-372-3928

Middle Tennessee – Region II
Ellington Agricultural Center
P.O. Box 41489
Nashville, TN 37204 615-781-6622
Toll Free.....1-800-624-7406

Cumberland Plateau – Region III
464 Industrial Blvd
Crossville, TN 38555 931-484-9571
Toll Free.....1-833-402-4698

East Tennessee – Region IV
3030 Wildlife Way
Morristown, TN 37814 423-587-7037
Toll Free.....1-800-332-0900

YOU MAY BE MOVING MORE THAN YOUR BOAT!

YOU CAN HELP STOP THE SPREAD OF AQUATIC HITCHHIKERS!

☑ INSPECT

Remove all visible plants, animals, fish, and mud from your boat, trailer, and other equipment.

☑ DRAIN

Drain water from bilge, live wells, and other areas that may collect water.

☑ DRY

Dry your boat, trailer, and all equipment completely. Drying times vary depending on weather conditions (minimum of 5 days).

PROTECT TENNESSEE WATERS!

WWW.TNWILDLIFE.ORG