Fish Species

of Thompson Creek at Southern 8ths

Redlip shiner ~ *Hydrophlox chiliticus*

WINTHROP UNIVERSITY

Made possible by Winthrop University Department of Biology
and the Carolina Wildlands Foundation

This book is the product of a collaborative and dedicated team effort. The Blair Lab in the Department of Biology at Winthrop University extends heartfelt thanks to Brad Turley and Pati Martin for generously providing access to the land and waters of Southern 8ths Farm, to David Harper and Laura Tedeschi for their valuable facilitation and design efforts, and Carolina Wildlands Foundation for funding support. Our shared mission, to inspire the next generation to learn about wildlife and engage in conservation, is deeply rooted in student involvement. Fieldwork offers students invaluable experiential learning, allowing them to gain real-world skills in ecological surveying, documentation, and data reporting. This compilation is both student-centered and student-driven, emerging from their active participation in water quality assessments, fish collection surveys, literature reviews, and scientific illustration. Now, it is their turn to share these experiences, and this book is part of that journey.

WINTHROP STUDENTS INVOLVED IN THIS BODY OF WORK:

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ACKNOWLEDGMENTS:

The Blair lab would also like to thank the helpful staff (Morgan Warner, Anna Privette, and Brianna Bergamini) at Southern 8ths for their assistance in field sampling. We also thank Preston Chrisman and SCDNR for sharing their equipment, and Bill Rogers for taxonomic advice. Books are not written in one day and require different sets of eyes and multiple edits, and we are thankful to all of those who helped contribute to the final version.

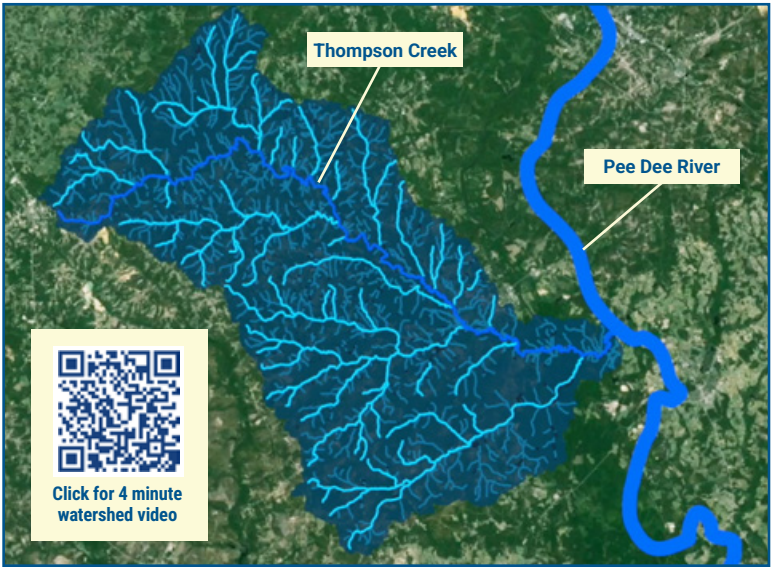
Fish Species of Thompson Creek at Southern 8ths. Chesterfield, SC.
Bowers, AG; Lawson, KC; Tedeschi, L.; Blair, SD; Carolina Wildlands Foundation.

Fish of Thompson Creek

This guide will get you familiar with some of the amazing small creatures that make the creek their home. They can be found in shallows, riffles and pools if you care to look closely. We hope this guide will bring an understanding to the importance of water health and quality to our region and community.

The Watershed

Bubbling to the surface near the outskirts of Pageland, Thompson Creek flows over 52 miles to the Pee Dee River in Cheraw which in turn flows on to the Atlantic. Crossing three distinct ecosystems, the rocky Piedmont, the Sand Hills and the Coastal Plain, Thompson Creek is more than just one waterway. Its feeder streams and branches draw from across approximately 205,000 acres. This watershed is a sanctuary for more than 134 species of birds, over 500 species of moths, 20 species of mammals, and at least 564 plant species, including those that extend beyond their common range. These natural features make the Thompson Creek watershed is a truly unique place.



Why Care About Tiny Fish?

Fish make up about half of the total 66,000 living vertebrate species and represent a large portion of biodiversity in aquatic ecosystems. Today the rate of decline in freshwater biodiversity is greater than that of terrestrial environments and will require intentional and immediate intervention to protect and conserve what remains. Fish can tell us so much about the health and condition of a body of water.

By monitoring fish populations and their health, we can assess water quality trends and detect early signs of pollution or habitat degradation. Regular surveys and bioassessments ensure that conservation efforts can be directed where they are needed most.

Sensitivity to Pollution

Different fish species have varying tolerances to abiotic environmental factors (oxygen, salinity, temperature, pH, turbidity) and pollutants. Certain species have a wide tolerance range, while others have a narrow tolerance range. Sensitive species like darters, and some minnows require clean, oxygen-rich water, while tolerant species such as catfish and carp can survive in more polluted environments. A decline in sensitive species often signals reduced water quality.

Diversity and Population Changes

A healthy river system supports a diverse fish community. If certain species disappear or invasive species dominate, it may indicate habitat degradation, pollution, altered water flow, or presence of an invasive species that is altering the native balance.

Oxygen and Nutrient Levels

Fish require adequate dissolved oxygen to survive. While some fish can tolerate lower oxygen levels than others, excessive bacteria and nutrient pollution (from agricultural runoff or sewage) can cause algae blooms, leading to oxygen depletion and fish kills. Monitoring fish health and population changes can reveal such imbalances.

Habitat Quality Indicators

Fish species are linked to specific habitats and resources (rocky bottoms, submerged vegetation, slow-moving pools). Changes in fish populations can signal sedimentation, erosion, or habitat destruction all of which influence overall water quality.

Presence of Endangered or Keystone Species

The Thompson Creek watershed is home to species which rely on high-quality water and stable habitats. Some of the fish documented in this guide retain a special conservation status, due to their overall small population in SC or because of the critical role they play within the ecosystem as keystone species. A decline in their numbers may suggest environmental stress or imbalance in predator-prey dynamics.

Impact of Industrial and Agricultural Activities

The watershed faces impacts from chemical fertilizers, farming, and urban development, which can introduce pollutants like heavy metals, pesticides, and sediment. Fish health and diversity help gauge the extent of these effects.

Researching the Creek Habitat

Carolina Wildlands Foundation is a member of Adopt-A-Stream and is working to monitor the health of Thompson Creek, not just to support tiny fish, but all life, from macroinvertebrates, reptiles, amphibians, birds and mammals - including us humans!

Water Quality

Fish communities are closely tied to the overall health of the creek. The quality of the water influences which species can survive and thrive. To better understand ecosystem health, we also monitor water quality parameters such as:

Temperature – affects dissolved oxygen and determines which species can live in the creek.

Dissolved Oxygen (DO) – fish and aquatic insects need oxygenated water to survive.

pH and Conductivity – indicate chemical balance and potential stressors.

Turbidity – measures how clear the water is, which affects feeding and habitat.

YSI ProSolo™ meter is used to measure temperature, dissolved oxygen, pH conductivity & salinity

Macroinvertebrates

Alongside fish, we look at macroinvertebrates (aquatic insects, snails, crayfish, and other small creatures). These organisms live in the streambed and respond quickly to changes in water quality, making them excellent indicators of stream health.

Sensitive species (such as the larvae of mayflies, stoneflies, and caddisflies) are only found in clean, well-oxygenated water.

Tolerant species (such as worms and midges) can survive in more polluted or low-oxygen conditions.

By examining fish, water quality, and macroinvertebrates together, we gain a clearer picture of the overall health of the creek. Each group tells part of the story: fish reflect long-term habitat quality, water chemistry shows present-day conditions, and macroinvertebrates provide an early warning system for ecological change.

Fish Research at Southern 8ths

Fish research involves proper planning, appropriate equipment, and necessary permitting. The Blair Lab at Winthrop University applies annually for research permits from the South Carolina Department of Natural Resources (SCDNR) and documents all findings in an annual report.

Research Equipment

- Seine nets
- Backpack electrofishing units
- Buckets
- Aerators
- Nets
- Water quality sensors

Water Sampling

Water quality is assessed prior to fish sampling at each site. A YSI ProSolo™ meter is used to measure water temperature, conductivity, dissolved oxygen, and salinity, while a Sper Scientific™ turbidity meter measures water clarity.

Nonlethal Fish Sampling

Nonlethal fishing involves either backpack electrofishing or the use of a seine net with the goal of not harming the study subjects.

Electrofishing delivers a pulse of direct current (DC) that temporarily stuns the fish, causing them to float to the surface where they are quickly netted before regaining mobility.

Seining is performed by positioning two people downstream holding the net. The net's bottom is weighted to rest on the creekbed, and the top held above water. Meanwhile, others stand upstream in a line and slowly walk downstream, shuffling their feet to drive fish toward the net. The net is then lifted to capture the fish.

In both methods, fish are transferred to an aerated holding container on shore for observation, photography, and identification. Once species are documented and counted, all fish are released unharmed back into the creek.

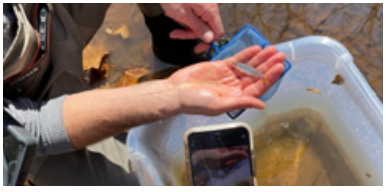
Fish surveys at Southern 8ths have been conducted on two primary sections of Thompson Creek, which differ in current flow, bank structure, and bottom substrate composition.

Seine netting

Backpack electrofishing unit

Collecting specimens in container

Scooping stunned fish with handheld nets



Documenting the "catch"

When handling fish it is important to do so in a manner that minimizes air exposure and keeps them wet. Always use wet hands when picking up and holding a fish to avoid accidentally removing the protective mucous layer on their skin. Keeping the fish submerged in water is the best way to avoid excess physiological stress, allowing oxygen to flow across their gills.

Fish Taxonomy & Organization

The way scientists classify fish has changed a lot over time. In the past, fish were grouped mainly by their appearance. Today, DNA research gives us a much clearer picture of how fish are related, which sometimes leads to names and groups being rearranged.

For example, fish commonly called “minnows” used to be placed in the same Cyprinid family as goldfish and carp (some carp relatives can grow to over 600 pounds, like the Giant barb of Southeast Asia!). Now, true minnows are recognized as their own family, called Leuciscidae. In 2022, scientists reshuffled part of the Leuciscidae family, the genus "Notropis" or shiners. A locally found fish, the Redlip shiner, used to be called *Notropis chiliticus* but is now known as *Hydrophlox chiliticus* based on new DNA evidence.

However, the complexity of fish taxonomy continues and is compounded by the use of common names. In this book, we present three species of darters, members of Percidae or the perch family. We also discuss a fish called the Pirate perch which is the lone member of its family, Aphredoderidae, but it is not a true perch.

In this book, there are 17 freshwater fish species, organized by family:

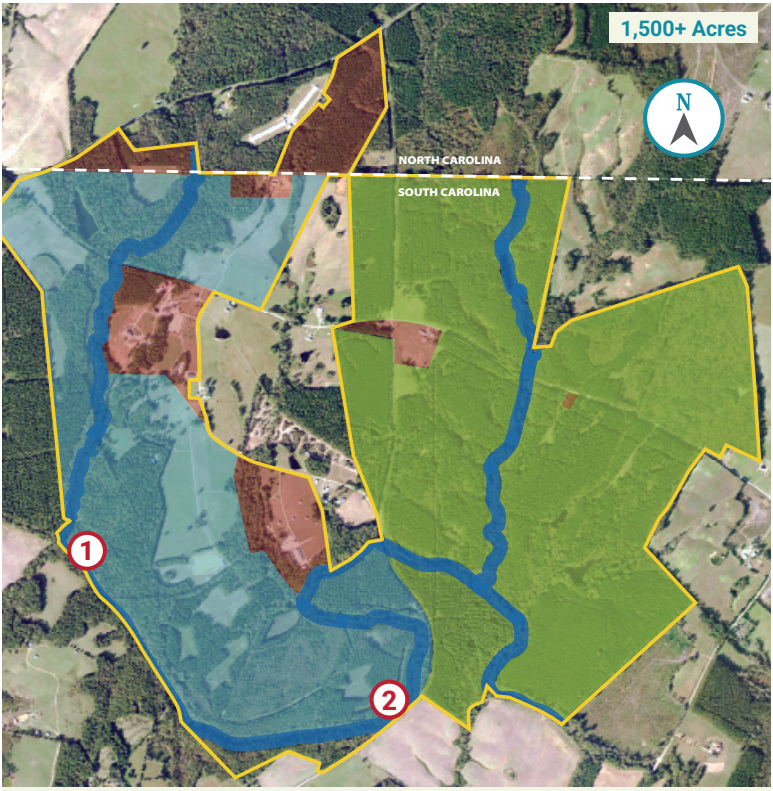
- 2 sunfishes (Centrarchidae)
- 2 catfishes (Ictaluridae)
- 1 sucker (Catostomidae)
- 7 minnows (Leuciscidae)
- 3 perches (Percidae)
- 1 pirate perch (Aphredoderidae)
- 1 live-bearer (Poeciliidae)

Fish in the same family share similar features, making it easier to see their relationships.

This is book is not intended to be a complete list of species found in Thompson Creek. For readers who want to learn about more local fish species and their descriptions and traits, we recommend *Freshwater Fishes of South Carolina* by Fred C. Rohde, Rudolf G. Arndt, Jeffrey W. Foltz, and Joseph M. Quattro.

Research Study Areas

① Kayak Put-In ② Swimming Hole



SOUTHERN 8THS BIOLOGICAL FIELD STATION

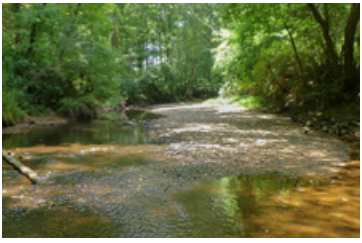
PIEDMONT PRESERVE
Set aside for wonder, arts & education for future generations. Includes equestrian tracks and historic sites.

WATER COURSE CONSERVATION
200' buffer around Thompson Creek & Talton & Muddy Branches protected from future development.

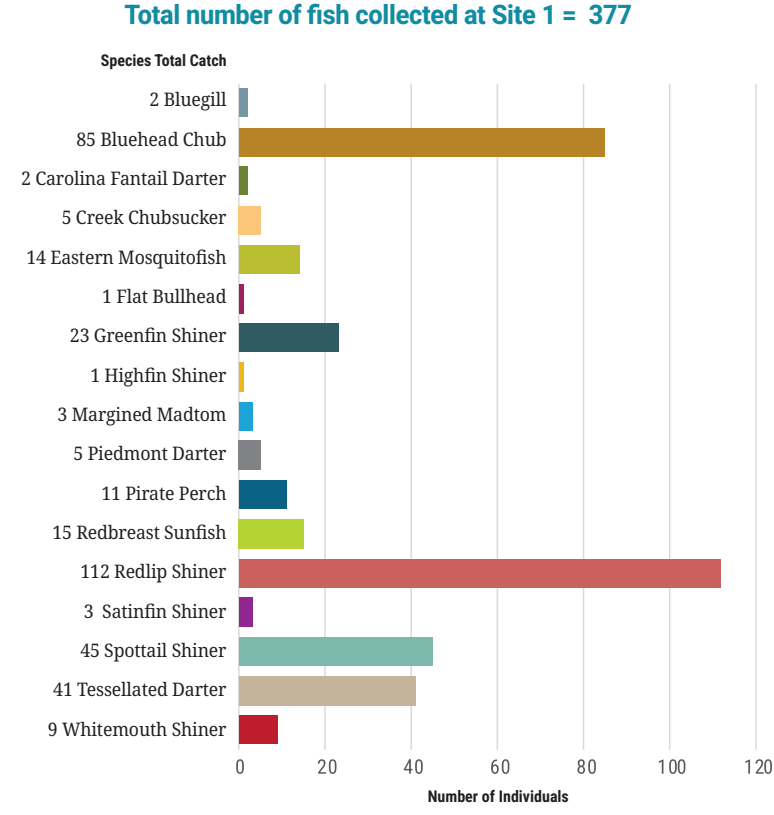
WILDLANDS
Woodlands & open areas preserved in perpetuity. Only accessible on private tours.

FAMILY HOLDING
Developed areas where most structures and living areas occur.

Site 1 ~ Kayak Put-In



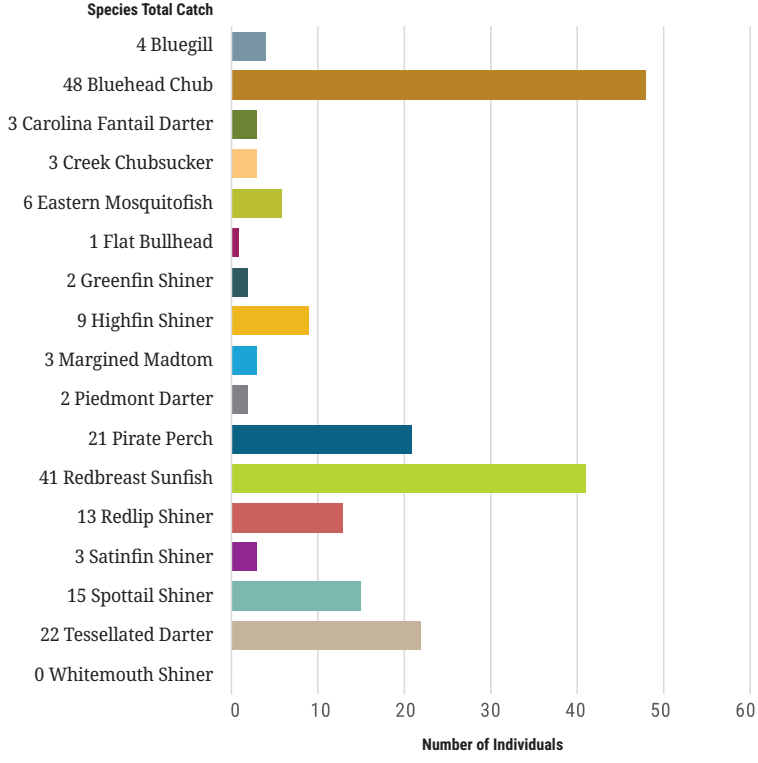
The Kayak Put-In site is characterized by riffles, pools, and runs with a shallow, moderate current flowing over a rocky and gravel bottom. Some areas contain sand, particularly at the tail ends and edges of pools.



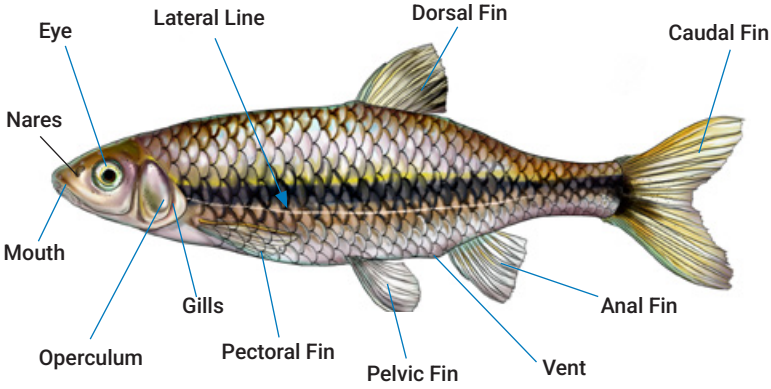
Site 2 ~ Swimming Hole

The Swimming Hole site also know as "Inspiration Rock" features moderately deeper water, slower flow, woody debris, and a sandy bottom.

Total number of fish collected at Site 2 = 192



Parts of a Fish



Eyes

Used to see short distances, fish can detect a wide range of light wavelengths, including UV, and some even sense polarized light. They use their vision to escape predators and find food.

Mouth

The mouth parts will vary in size and may contain teeth, depending on what the fish eats. A fish's mouth orientation is usually associated with its diet. A mouth pointing upward means the fish will usually eat food located above it, a mouth pointing downward will usually eat food located below it.

Nares

Similar to nostrils, except nares are used only for smelling, not for breathing. Olfactory sacs inside the nares are lined with special cells designed to bind chemical signals and odors.

Fins

Fins provide fish with balance, steering, and protection. Fish have single fins along the centerline: **dorsal fin** (spiny and soft); **anal fin**; and **tail or caudal fin.** They also have paired fins, the **pectoral** and the **pelvic fins**.
The tail fin helps propel fish forward. In most fish the pectoral fins provide

balance, are used for stopping and turning, and are occasionally used for swimming. The top fin or dorsal fin main function is stability and balance, but can offer protection in some species like the sunfish. The ventral fin and anal fin are located on the bottom or belly of fish and help with steering and balance.

Vent

The vent removes waste and extra water. It is also the outlet for eggs or milt (sperm) during spawning.

Scales

Most fish have scales that protect the fish from injury.
A mucus covering known as the slime layer covers the scales. Slime protects fish from bacteria and parasites in the water.

Lateral line

Located on the sides of fish, the lateral line is a sensory organ allowing fish to detect water flow and vibrations in the water column. This allows the fish to detect fixed objects and the approach of potential predators.

Barbels

They are the "whiskers" found on the head area of fish such as catfish and some minnow species. Barbels are thought to be a chemosensory or taste organ to help track down food and detect toxins.

Gills

Located on either side of fish, gills are the multifunctional structures that allows fish to breathe in water, maintain internal salt/water balance, and help regulate internal blood pH. Water flows in through their mouth and over their gills where oxygen is extracted and passed into the bloodstream in a counter current exchange pattern much like a radiator. Gills are covered by a flexible bony plate called the operculum. It opens and closes to allow water to pass over the gills.

Bluegill

(Lepomis macrochirus)

CENTRARCHIDAE

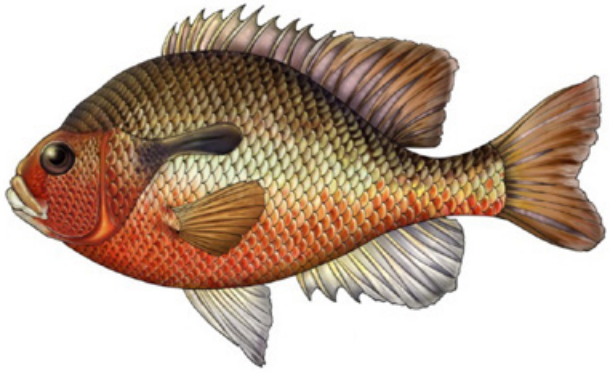
Size: 5–10 inches

Diet: Mature & immature insects, small invertebrates, crayfish, mollusks (mussels) & other fishes

Range: Native to the eastern half of the U.S. from the Great Lakes and the Mississippi Valley eastward and from southeastern Canada to northeastern Mexico. Stocking programs have expanded their range across most of the US. Found throughout SC, often stocked with Largemouth Bass in lakes/ponds for recreational fishing.

Biology: Bluegill are members of the Centrarchidae family or sunfishes. They are colonial nesters with 100 or more different bluegill nests in one area. This provides extra protection for the eggs and fry from predators. Spawning occurs May to August. Bluegill males, as with all sunfish, guard their nest, eggs and fry. Deep bodies and protruding spiny dorsal fins make adult sunfish difficult to consume by other fish, except for the largest of predators.

Habitat: Variety of water bodies including pools of creeks and rivers, swamps, oxbow lakes, ponds, vegetated shores of impoundments, man-made lakes, ponds and retention basins. They prefer sluggish or slow-moving water.



Redbreast Sunfish

(Lepomis auritus)

CENTRARCHIDAE

Size: 2–9 inches

Diet: Bottom-dwelling insect larvae, snails, clams, shrimp, crayfish, and small fish

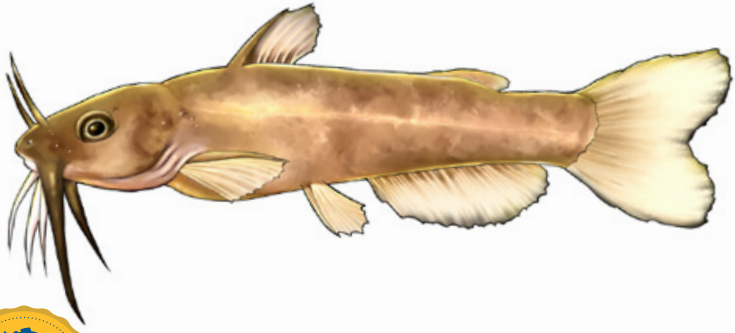
Range: Native to Atlantic and Gulf drainages running from New Brunswick down to central Florida and in Apalachicola and Choctawhatchee drainages throughout Georgia and Florida. It is found throughout SC.

Biology: A member of the sunfish family, this species is often caught by anglers in creeks and rivers. Spawning occurs May to July. Males make nests by fanning tails and fins over in coarse sand or gravel to create a depression. Spawning occurs May to July. Males and females are easily distinguishable by vibrant coloration on the underside belly of adult males.

Habitat: Found in a upper reaches of reservoirs, and prefers pools and backwaters of creeks and rivers with sandy bottoms, often collected near logs and woody debris.

FUN FACT

Some sunfish males will sneak into nests of other males to deposit their sperm to produce their offspring versus those of the nest builder and caretaker.



SOUTH CAROLINA
Species of Greatest Conservation Need
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Flat Bullhead

(Ameiurus platycephalus)

ICTALURIDA

Size: 7–11.4 inches

Diet: Insects, small fish, snails

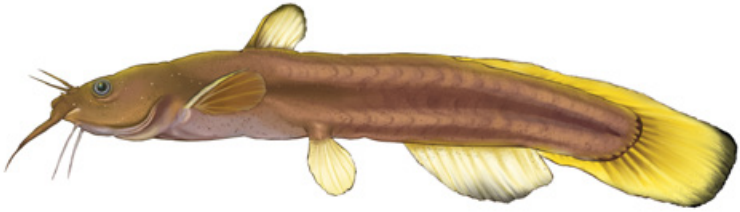
Range: Piedmont and Coastal Plain of the Atlantic Slope from the southern Virginia to Georgia. In SC, found most abundantly above the Fall Line, but populations exist in most drainages from the Mountains to the Piedmont.

Biology: Populations have dwindled in some areas with introduction of predatory Blue and Flathead Catfish. Spawns June to July, commonly mistaken for other bullhead species, such as the Snail Bullhead. Listed as moderate priority in SC Species of Greatest Conservation Need .

Habitat: Slow areas of rivers and creeks, bottoms with soft substrate, found also in lakes and ponds.

FUN FACT

Use care handing bullheads! They have venom in their dorsal and pectoral spines that can cause a painful stinging sensation.



Margined Madtom

(Noturus insignis)

ICTALURIDA

Size: 2.2–7.0 inches

Diet: Aquatic insects larvae, aquatic invertebrates, small fish

Range: Found on the Atlantic Slope, New York to Georgia. In SC, populations are found across entire state.

Biology: One of the smaller members of the Ictaluridae (catfish) family, this species is highly active at night. Spawning occurs in May and June, with nests built beneath flat rocks on the stream floor. Like other catfishes, the Madtoms have pectoral spines containing a painful venom used as an anti-predator defense, thus handle with caution.

Habitat: Prefers stream habitats, rocky to sandy bottoms.

Eastern Creek Chubsucker

(Erimyzon oblongus)

ICTALURIDA

Size: Up to 14 inches

Diet: Microcrustaceans, organic detritus, algae, small clams, insect larvae

Range: Eastern United States (excluding southern Georgia and peninsular Florida), lowlands of Mississippi. Throughout SC excluding upper Piedmont and Blue Ridge.

Biology: Known to be very territorial, males have been observed butting heads during spawning season (March to May) to establish territory. Males develop large breeding tubercles on front of head, and court females to an area who then spread thousands of eggs. As a member of the sucker family, these fish display a downward facing mouth, aiding in their characteristic bottom-feeding habits.

Habitat: Prefers clear, creeks, and small rivers with sand and gravel bottoms, often in areas with heavy plant matter.

Bluehead Chub

(Nocomis leptocephalus)

LEUCISCIDAE

Size: Up to 10 inches

Diet: Diverse diet including plant material, insects, crustaceans.

Range: Native range is in Atlantic and Gulf Slope drainages starting in Shenandoah River, Virginia and running to Pearl River, Mississippi. Usually found above the Fall Line in SC, but widespread throughout Piedmont and Blue Ridge. Also found in lower tributaries of the Mississippi River and upper New River drainage in West Virginia, Virginia, and North Carolina.

Biology: During spawning season (May to June), males develop prominent tubercles on their heads. Nests are made in gravel or sandy substrate and are used multiple times throughout the season, including by other species which will spawn over Bluehead Chub nests. This species serves as a host for several freshwater mussels, including the endangered Carolina Heelsplitter, whose larvae temporarily attach to its gills.

Habitat: Prefers clear creeks and small rivers with gravel, rock or sandy substrate.

FUN FACT

During spawning male Bluehead Chub grow spikes on their heads giving them their common name of "hornyheads"!

Greenfin Shiner

(Cyprinella chloristia)

LEUCISCIDAE

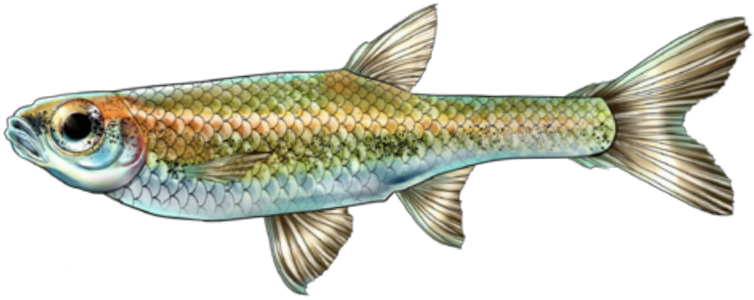
Size: 1.7–3.5 inches

Diet: Insects

Range: Santee River drainage in North Carolina and South Carolina and Pee Dee River drainage in SC. Occurs mostly above the Fall Line.

Biology: The greenfin shiner belongs to the Leuciscidae or minnow family. This member of the *Cyprinella* genus, displays crevice spawning behavior. The female deposits eggs in a crevice among underwater rocks and logs while males guard the area.

Habitat: Rock and sandy bottoms of runs in small clear rivers and large creeks.



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Highfin Shiner

(Hudsonius altipinnis)

LEUCISCIDAE

Size: 1.4–2.5 inches

Diet: Insects, microcrustaceans, algae

Range: Roanoke River drainage in Virginia to Savannah River drainage in SC, found throughout lower Piedmont.

Biology: This species is very understudied, and commonly misidentified with other *Hudsonius* species with which it likely hybridizes in some locations. Belonging in the family Leuciscidae, this shiner species is listed as listed as moderate priority in SC Species of Greatest Conservation Need.

Habitat: Found in small to mid-sized clear creeks with moderate current, prefers pools and runs with sandy or rocky bottom.

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Redlip Shiner

(Hydrophlox chiliticus)

LEUCISCIDAE

Size: 1.9–2.8 inches

Diet: Insects, larvae zooplankton, protozoans and diatoms

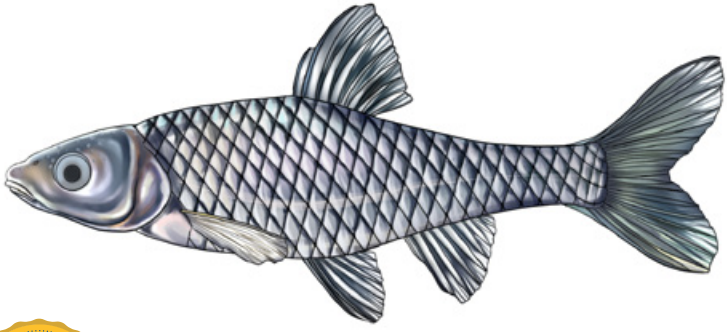
Range: Native along the Dan and Pee Dee River drainages running from Virginia down to North and South Carolina (southernmost portion of its range).
The SC population is found only within Chesterfield County, Thompson Creek being one of its main strongholds.

Biology: This special member of the Leuciscidae family is listed as a species of moderate conservation priority in SC due to its limited population range. Bright red lips clearly delineate this species from other minnows. Spawns May to June, utilizes nests of Bluehead Chub *(Nocomis leptocephalus*). Often found in groups of 12 or more.

Habitat: Prefers middle of the water column of sandy or gravel bottomed clear-water creeks.

FUN FACT:

Thompson Creek and tributaries are one of the only locations the Redlip Shiner is found in South Carolina!



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Satinfin Shiner

Cyprinella analostana

LEUCISCIDAE

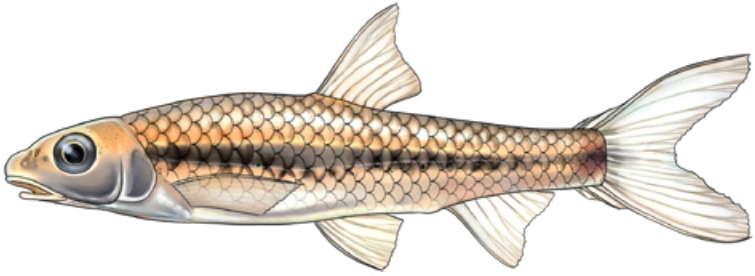
Size: 1.8–4.3 inches

Diet: Microcrustaceans, insects, and algae

Range: Throughout Atlantic slope from Lake Ontario and Hudson River drainages south to North Carolina. Population in SC restricted to the Pee Dee River in the Coastal plain, with Thompson Creek holding the most viable populations.

Biology: Spawning occurs spring to summer, with males producing sounds associated with courting behavior. Females deposit eggs in crevices of rocks or logs. Listed as moderate priority in SC Species of Greatest Conservation Need.

Habitat: Tolerant of a range of waters, from large turbid waters of the Pee Dee, to smaller clear tributary streams, preferring those with sand or gravel substrates.



Spottail Shiner

(Hudsonius hudsonius)

LEUCISCIDAE

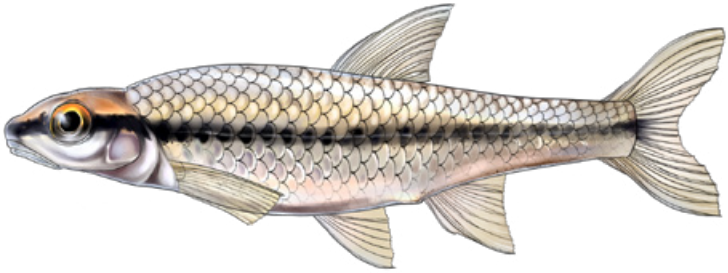
Size: 2.6–5.8 inches

Diet: aquatic insect larvae, plant and algal matter, small fishes, terrestrial insects and microcrustaceans

Range: Found throughout the Great Lakes and upper reaches of Mississippi River basin north into Canada, and along the Atlantic Slope from Quebec to Georgia. In SC, found throughout state including the Pee Dee and but primarily across the Piedmont up into the Blue Ridge.

Biology: Spawning likely occurs mid to late spring, in which groups of shiners spawn together, depositing eggs in sand or gravel. Introduced outside its native range as a food source for stocked sport fish, and sometimes sold as bait.

Habitat: Tolerates a variety of waters from small rocky creeks and streams to larger sandy bottom rivers, also found in lakes/reservoirs where introduced.



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Whitemouth Shiner

(Miniellus alborus)

LEUCISCIDAE

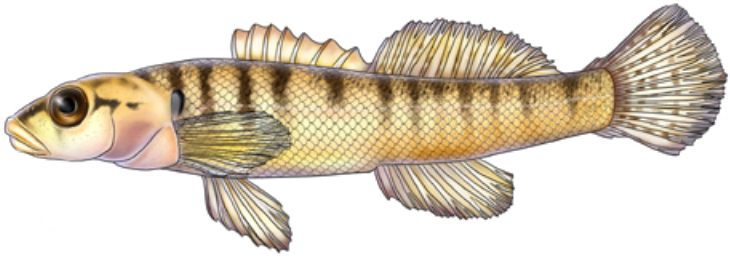
Size: 3–6 inches

Diet: microcrustaceans, mites, diatoms, and plant material

Range: Atlantic Slope river drainages within the Piedmont of Virginia and the Carolinas including Roanoke-Chowan, Cape Fear, Santee, and Pee Dee. In SC, restricted to upper reaches of Pee Dee with main populations in Thompson Creek.

Biology: Spawning likely occurs June to July, with males displaying aggressive behavior amongst each other to establish territory. This member of the Leuciscidae family is listed as moderate priority in SC Species of Greatest Conservation Need.

Habitat: Prefers small to mid-sized creeks and small rivers, clear to turbid water with gravel and sand substrates.



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Carolina Fantail Darter

(Etheostoma brevispinum)

PERCIDAE

Size: 1.3–3.3 inches

Diet: Aquatic insects and larvae

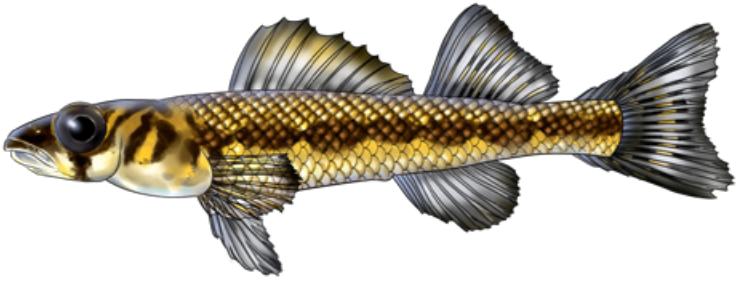
Range: This subspecies of *Etheostoma* is restricted to the Savannah, Santee and Pee Dee River drainages in NC, northern SC and southern Virginia.

Biology: The Carolina Fantail Darter is closely related to the Fantail Darter *(Etheostoma flabellare)*, and shares many characteristics with other darters, but is distinguishable by seven or fewer dark distinct bars on upper side. Inconsistent data can make it difficult to define separate unique populations. Spawning likely occurs in spring with female depositing eggs in excavated nests beneath rocks, defended by male.

Habitat: Found in the bottom of creeks and small rivers with medium to fast currents, and prefer rock and gravel substrates.

FUN FACT

Darter species crawl along the bottom of streams using their pectoral fins.



SOUTH CAROLINA
Species of Greatest Conservation Need
LISTED 2023

Piedmont Darter

(Percina crassa)

PERCIDAE

Size: 2.7–3.5 inches

Diet: Insect larvae

Range: From Southwestern Virginia, across NC, and north central SC. Extends below the Fall Line within the Pee Dee and Santee River drainages.

Biology: This species is a member of the Percidae or Perch family (the second most diverse group of fish, aside from the minnows) which includes the larger Yellow Perch and Walleye game fish species. Spawning likely occurs May to June, but this specific species is widely under-studied.

Habitat: Prefers clear moderate currents of riffles in small to mid-sized creeks and rivers with rocky or gravel bottoms.

Tessellated Darter

(Etheostoma olmstedi)

PERCIDAE

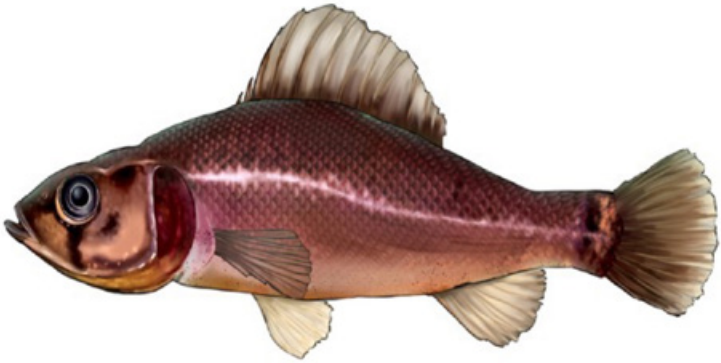
Size: 2.4 inches

Diet: Crustaceans and small insects

Range: Found along the Eastern US and southern Canada; starting in the St. Lawrence River down through Georgia and St. Johns River drainages in Florida. In SC, they are concentrated in central part of state on either side of Fall Line, rarely found in southeastern and northwestern parts of the state.

Biology: This species is a member of the Percidae or Perch family. Spawning occurs March to June, males prepare a nest under a flat rock or log, then the male will attract a female to the nest who deposits eggs on the underside of the nest cover. Males will guard the nest and eggs. Adults have also been observed to bury themselves in the sand.

Habitat: Prefers pools and slow runs in creeks with sandy or gravel bottoms, but can be found in a variety of water bodies, and some low salinity estuaries.



Pirate Perch

(Aphredoderus sayanus)

APHREDODERIDAE

Size: 2.5–5.7 inches

Diet: Crustaceans, fish eggs, juvenile fish, insects, invertebrates, and larvae.

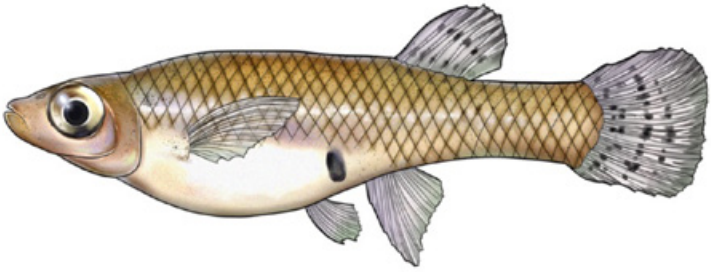
Range: They are native to the central Mississippi River valley and the Atlantic and Gulf Slopes. In SC, they are found throughout the Coastal plain and into the Piedmont but absent from the area between Saluda and Broad rivers and the Blue Ridge.

Biology: The Pirate Perch is the only member of its family, Aphredoderidae. Eggs are commonly deposited in burrows or cavities in woody debris or root masses along the banks. They use a form of chemical camouflage that prevents other species from sensing them as a threat, which may give them an advantage as predators.

Habitat: Found in many different bodies of water from swamps, ponds, undercut banks of creeks and small rivers near submerged tree roots.

FUN FACT:

The anus of these fish is located in their throat. They excrete digestive waste and reproductive cells from their mouth.



Eastern Mosquitofish

(Gambusia holbrooki)

POECILIIDAE

Size: 0.8–2.6 inches

Diet: Small aquatic insects, larvae

Range: Atlantic Slope from New Jersey to Florida, throughout Piedmont and Coastal Plain in SC, absent in the Blue Ridge, however it now has a wider distribution due to its introduction as a form of natural mosquito control, commonly stocked in farm ponds.

Biology: This species is very robust and withstands various environmental conditions, with a high tolerance for low oxygen and higher temperatures than other fish. Does not lay eggs, rather is a live bearer, similar to that of guppies, with a month-long gestation period in the warmer months producing 1-300 young with each brood.

Habitat: Found in a variety of aquatic environments, prefers vegetated bank areas of lakes, ponds, ditches and slow-moving creeks and rivers.

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Southern 8ths

Fish ... do many of us think much about them? Of course, we say, "Holy *Mackerel*", we question when someone is *"Floundering"*, and we often do things "Just for the *Halibut"*. But fish are much more than a few cute sayings. Did you know that there are over 1,000 different species of fish in the lower 48, and over 25,000 different species worldwide?

Thompson Creek's beauty has always impressed us. Its rocky walls, unusual flora and water capacity are extraordinary. But we hadn't thought much about what lives in the creek. Our neighbors tell us big tales of the fish they caught as kids – bass, brim and catfish. But it wasn't until Sal Blair, and his Winthrop University students, asked to study the fish in our creek that we were soon repeatedly asking, "Who knew?"

There's a lot of different fish species living in our little country creek – some smaller than your finger, some the size of your hand and maybe even longer than your forearm. We hope this book allows you to share our amazement about what lives below the surface, and you get to share our sense of wonder.

Pati & Brad

Jackson Road West, Chesterfield, South Carolina