

Dr. Seuss had it right. His famous children's poem One Fish Two Fish Red Fish Blue Fish taught us life lessons about diversity and wonder and that no matter our size, shape, or color, all things are important. This certainly is true of the small, nongame fishes of Missouri, which can also be "black fish, blue fish, old fish, new fish."

About 225 fish species can be found in Missouri. They range in size from giant sturgeons, Paddlefish, and catfishes, which may grow to more than 100 pounds in weight, to tiny species, some barely over an inch long (and given appropriately descriptive names like Banded Pygmy Sunfish and Least Darter).

Most of Missouri's fishes are rather small and inconspicuous, and they go unnoticed by the casual observer. This is unfortunate, because these are some of the most interesting examples of our fish fauna.

Some Families Have it All

Darters are arguably some of the most colorful and strikingly beautiful of Missouri's fishes. They are the smaller members of the perch family, Percidae, which includes the more familiar and sought-after Walleye, Sauger, and Yellow Perch. Among the darters, one group in particular is both showy and of great interest to taxonomists (those who study the classification of organisms) and ecologists (those who study the relationship of the organism to its environment); this group is known as the Orangethroat Darter complex or species-group.

We call this group a "complex" because the populations are

closely related, often looking quite similar to one another. Only through careful examination of individual characteristics (color, pigment patterns, scale counts, body proportions, etc.) and observation of habits (habitat selection, reproductive behavior, etc.) can scientists separate them into bona fide species.

Orangethroat Darter and closely related relatives make up a few of the more than 40 darter species known to Missouri. Accurately identifying many of these darters requires some time, patience, and familiarity with fish taxonomic keys. But as the common name of this species group implies, they all have bright orange gill membranes (the approximate "throat" region) and in some populations the orange color may extend onto the head.

In general, members of this group live in riffles in headwater streams where they are sometimes the only or the most abundant darter. They can be found in medium-sized streams too, usually near riffles or in shallow, gravelly shoals and may occur near populations of Rainbow Darters (*Etheostoma caeruleum*). These two species groups look similar, possessing a kaleidoscope of colors and bluish bars laced with shades of oranges and reds. The easiest time to tell them apart is in the spring when in breeding colors.

Rainbow Darter males have red on the membranes of the anal fin while Orangethroat Darters and their relatives typically have solid blue anal fin membranes. When these species occur in the same stream, Rainbow Darters are usually more abundant in the larger reaches and in deeper, swift currents, usually over riffles.

Some people call many sunfishes “perch,” but only one sunfish (family Centrarchidae) has a common name that includes the word perch — the Sacramento Perch, which is native to the western United States. The perch family differs from the sunfishes in having only one or two anal fin spines, while sunfishes and other closely related families have three or more anal fin spines. Freshwater Drum (family Sciaenidae) also has two anal fin spines, but the first spine (the one positioned forward or toward the head of the fish) is very short. In perches, if two spines are present, they are similar in length.

Orangethroat Name Game

The Orangethroat Darter was formally described in the scientific literature from the Osage River, Missouri, in 1854. The scientific name of the nominal species is *E. spectabile spectabile*. As other populations of “Orangethroat” Darters were later discovered they may have been described as a different species, but the prevailing naming convention and the lack of formal taxonomic descriptions ultimately required that these populations all be named *E. s. spectabile*. This was the status quo until the 1960s, when a researcher formally recognized five subspecies, three of which were known from Missouri (see front and back cover). One of those has been described as a separate species, the Current Darter (*E. uniporum*). Later, the Orangethroat Darter from the Black River system was named Brook Darter (*E. burri*). At present, one other Orangethroat Darter is being recognized as a different species. It is known from the White River system and is being called the Ozark Darter, although


a formal description has not yet been published. Judging from the images on the front cover, it is certain that other Orangethroat Darter populations will eventually be raised to the species level.

Small Size, Big Role

So why should we care about darters, in general, and specifically the Orangethroat Darters? Darters are a wonderfully diverse group of fish. They have evolved and radiated into a myriad of aquatic habitats that includes lakes and streams, wetlands and swamps, and even in big, deep, and muddy rivers. They occupy specific habitats within these larger macro-habitats, and as part of the larger functioning of the ecosystem, they utilize resources and in return they are used as resources themselves (i.e., they may be used as food for other aquatic and semi-aquatic animals).

The Orangethroat Darters, in particular, have managed to spread across and exist in Missouri for a long enough time to show so much diversity and color. While many populations are common, they all live in clear and typically headwater streams, thus they are excellent indicators of healthy, clean waters. Their reduction in numbers or loss from a headwater would be a strong indication that something is wrong in a particular stream.

Moreover, Orangethroat Darters are very attractive and easy to keep in a home aquarium. They take to a variety of standard fish foods that can be purchased at pet stores (although I like to feed them frozen bloodworms). They often “perch” on rocks and logs and display their showy colors. Kids love them (so do adults!). Probably Dr. Seuss would have loved them, too, as his poems suggested that trying new things is fun and meeting new creatures is fun, too!

Yes. Some are red. And some are blue. Some are old. And some are new. Where do they come from? I can’t say. But I bet they have come a long, long way. 

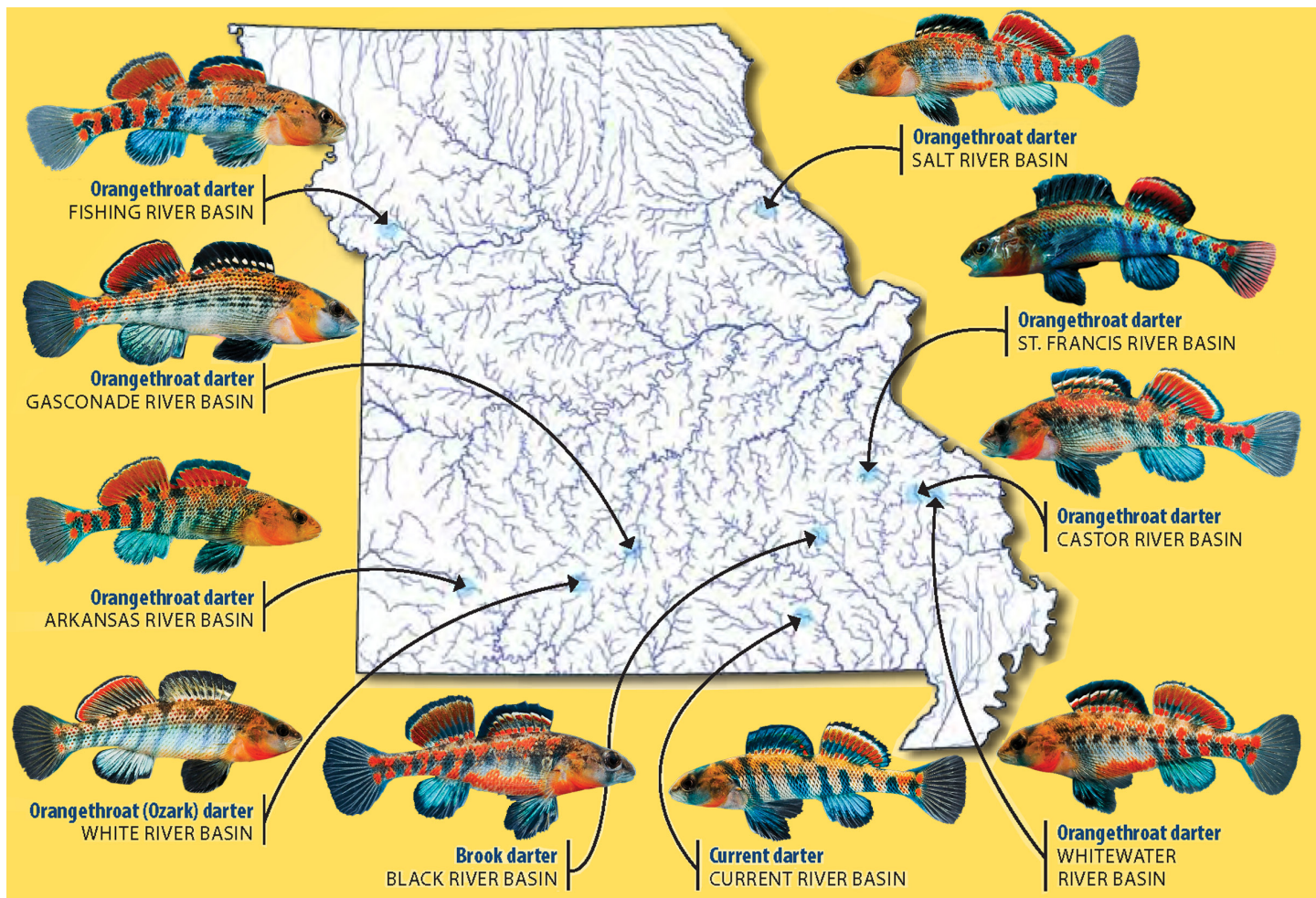
Bob Hrabik is an author of the *Fishes of Nebraska* which will be released in 2014. He is currently writing the *Fishes of Missouri*.

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Welcome New Members

Alex Arwood	Evansville, IN
Michael Austin	Marietta, OH
Arthur Bakker	Detroit Lake, MN
Barry Bixler	Marietta, PA
Kristi Butler	Forest Hill, LA
Phillip Cox	Silver City, NC
Eric Crouch	Ames, IA
Gabriel Finch	Portland, OR
Paul Giltner	Cincinnati, OH
David Gonzales	Keizer, OR
Dave Kellam	Exeter, NH
Chris King	Columbia, SC
Karen Koenig	Kerrville, TX

Serge Latour	Carrabelle, FL
Michele Lyczak	Justice, IL
Eric Malone	Cobleskill, NY
Mike Mickey	Clemmons, NC
Tom Moran	Oakton, VA
Jennifer Nevis	Glen Ellyn, IL
Matt Nicholson	Shinnston, WV
Herb Pape	Warrenton, MO
Joe Pepe	Crimora, VA
Crystal Riggs	San Diego, CA
Greg Ware	Watkinsville, GA
Mike Whitfield	Harrison, TN



Nuptial Male Orangethroat Darters from Several Missouri River Basins - images provided by Lance Merry