

WHO YOU CALLIN’ “CHUBBY?” CHUBSUCKERS ARE TOO COOL TO CARE



Don Orth

Blacksburg, Virginia

The chubsuckers, *Erimyzon* spp., are chubby-looking, short, and stout suckers. Chubsuckers inhabit lowland habitats such as sluggish streams, backwaters, oxbows, and ponds. They are seldom caught by anglers because they have a small mouth. They are infrequently observed by fisheries biologists. All members of the genus are similar in body shape and have small oblique mouths with plicate lips and no lateral line. Adults are olive-brown above grading to a more golden color on the sides and have a white or silvery belly. Fins are olive-gray and may be yellow at times. The scales are darkly edged with pigments, which gives the fish a cross-hatched appearance on the sides. The genus name, *Erimyzon*, derives from the Greek word *eri* meaning “very much” or “a lot,” and *myzo* which means “to suck.”

The genus *Erimyzon* consists of four species: Eastern Creek Chubsucker *Erimyzon oblongus* (Figure 1), Western Creek Chubsucker *E. claviformis*, Lake Chubsucker *E. sucetta* (Figure 2), and the Sharpfin Chubsucker *E. tenuis* (Figure 3) (Hubbs 1930; Page et al. 2013). Older literature recognizes two disjunct subspecies of creek chubsuckers, one along the Atlantic slope drainages and one in the Mississippi and Gulf Slope drainages. However, today these are considered distinct species: Eastern Creek Chubsucker and Western Creek Chubsucker. The validity of two forms of Lake Chubsuckers (*Erimyzon sucetta kennerlii* and *E. s. sucetta*) proposed by Hubbs (1930) is not generally accepted.

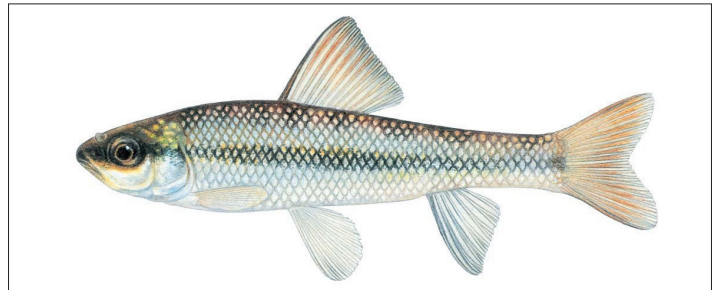
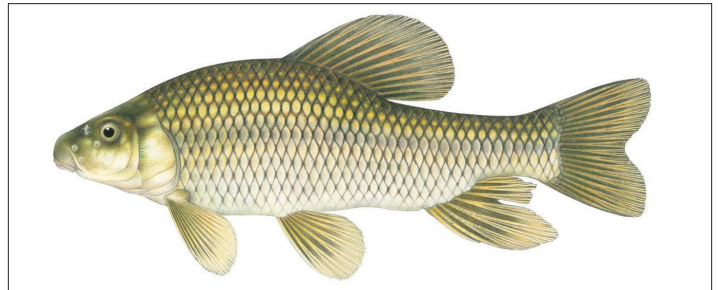


Figure 2. Lake Chubsucker (adult and juvenile).

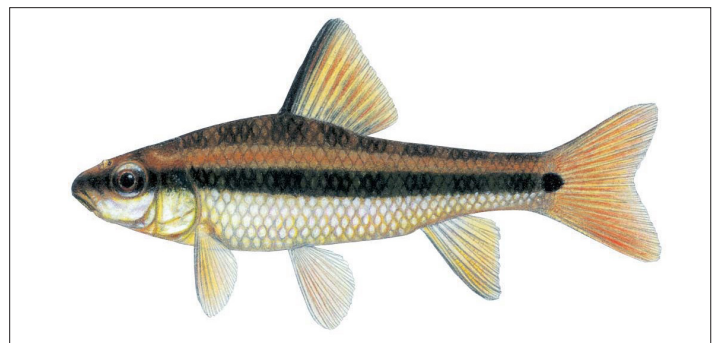
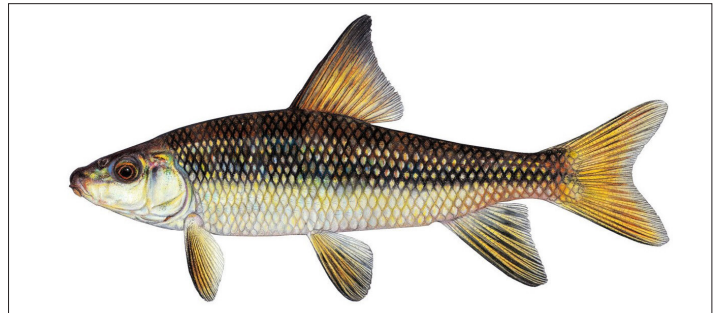


Figure 3. Sharpfin Chubsucker (adult and juvenile). All illustrations by Joseph Tomelleri

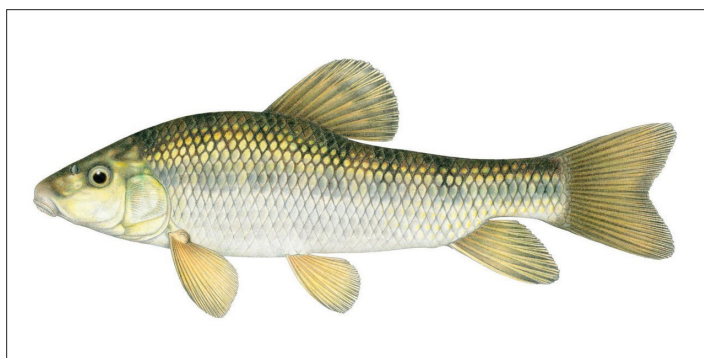


Figure 1. Eastern Creek Chubsucker

Don Orth is the Thomas H. Jones Professor of Fish and Wildlife Conservation at Virginia Tech University. He is a fellow and life member of the American Fisheries Society, an innovative and award-winning instructor, and scholar with expertise in in-stream and environmental flows, fish conservation and restoration ecology, and freshwater habitat conservation.



Figure 4. From top: Adult male Eastern Creek Chubsucker; note lengthened anterior tip on anal fin (photo by Jason Emmel). Juvenile Eastern Creek Chubsucker (photo by John F. Bunnell). Lake Chubsucker collected from stained water body in Georgia (photo by Brett Albanese).

The specific name of the Eastern Creek Chubsucker (*oblongus*) refers to the oblong body shape (Figure 4), because it is longer than the Lake Chubsucker (*sucetta*). The specific name of the Western Creek Chubsucker (*claviformis*) refers to the chub (=clavi) shape (=form). The Lake Chubsucker (*sucet* = sucker) was the “chubby” one (Figure 4) and was first described by the French naturalist, Bernard Germain de Lacépède in 1803. To distinguish between the Lake Chubsucker and the two creek chubsuckers, measure the maximum body depth, which goes into standard length 3.2 times or less in Lake Chubsucker and 3.3 times or more in creek chubsuckers.

Young Eastern Creek Chubsuckers are distinguished by a faint yellow stripe above black stripe that extends from the snout to



Figure 5. Three large tubercles on snout of breeding male Western Chubsucker (photo by Todd Crail).

the caudal fin base. During spawning the males are dark brown above and pink to yellow below with orange paired fins and yellow median fins. Breeding males also develop three large tubercles on each side of the snout (Figure 5).

The two species of creek chubsuckers are typically found in sluggish, vegetated small streams and riverine wetlands, hence the “creek” descriptor. The Eastern Creek Chubsucker occurs throughout many of the Atlantic slope drainages of the United States. Western Creek Chubsucker occurs in creeks of the Mississippi and Gulf drainages from east Texas to central Georgia and north as far as Michigan. The Lake Chubsucker occurs throughout the Great Lakes basin, south throughout the Mississippi valley, and along the Gulf and Atlantic slopes from Texas to the southeastern corner of Virginia (Figure 6). Lake Chubsuckers may be distinguished from creek chubsuckers by larger scales (34–39 lateral scales versus 39–43) and smaller body depth and smaller eye in creek chubsuckers.

The Sharpfin Chubsucker is restricted to the middle Gulf slope drainages (Figure 6) from east of the Mississippi River to and including the Blackwater River in the western panhandle of Florida (Gilbert and Wall 1985; Robins et al. 2018). The Sharpfin Chubsucker has a sharply pointed dorsal fin where the others have rounded dorsal fins.

Creek chubsuckers may be important pioneer fishes, among the first to ascend small creeks newly flowing in the springtime. Creek chubsuckers spawn in spring (March through May) over

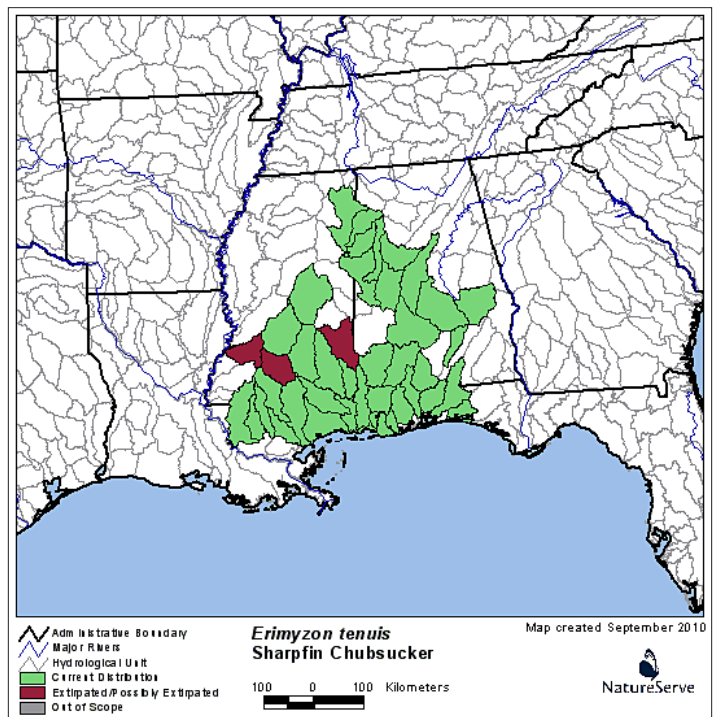
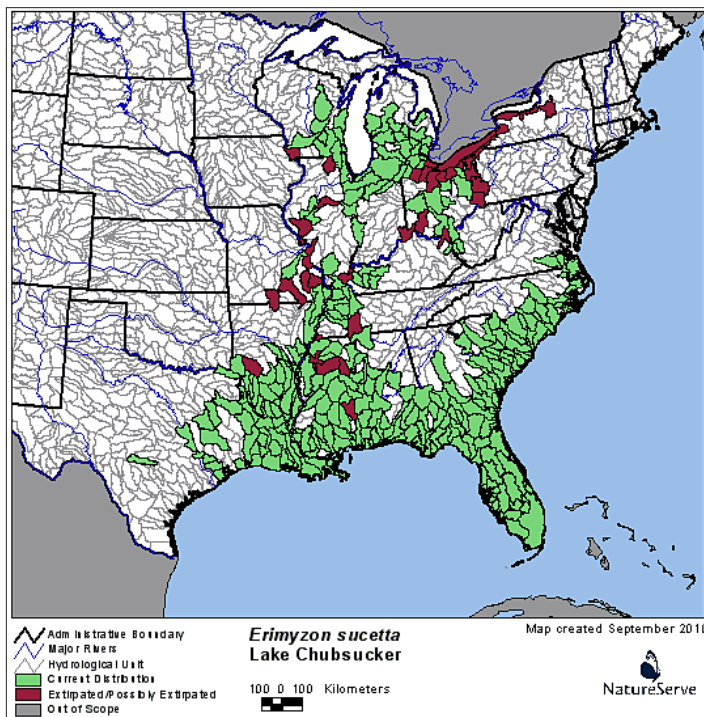


Figure 6. Lake and Sharpfin Chubsucker distribution.

sand and gravel. The very large tubercles on the snout are formidable-looking weapons, and one can only speculate about the nature of agonistic encounters among breeding male creek chubsuckers. Larry Page and Carole Johnston (1990) described males defending territories by head butting. After males establish breeding territories, they court females and lead them to the territory. The female digs in the gravel with her snout presumably to indicate spawning readiness.

Few studies have focused on the roles that chubsuckers play in the aquatic ecosystem. Diet of the two creek chubsuckers consists of small crustaceans, aquatic insects, and algae. Food of Lake Chubsuckers consists of algae, cladocerans, ostracods, and chironomid larvae (Shireman et al. 1978; Eberts et al. 1998). Some other observations provide hints to the role of chubsuckers. During breeding, the scattering of thousands of eggs by each spawning female (Wagner and Cooper 1963) attracts many egg predators. The mortality is likely very high and, therefore, the creek chubsuckers with their high fecundity likely feed many carnivorous animals. The Eastern Creek Chubsucker is often associated with warm-water, sluggish streams that also support Brown Bullhead *Ameiurus nebulosus*, Pumpkinseed *Lepomis gibbosus*, Yellow Perch *Perca flavescens*, and either the Chain Pickerel *Esox niger* or the Redfin Pickerel *E. americanus*. It is likely the Eastern Creek Chubsuckers are a frequently-encountered prey item in the diet of the black bass *Micropterus* spp. and pickerels *Esox* spp. Along with Golden Shiner *Notemigonus crysoleucas* and Fathead Minnow *Pimephales promelas*, chubsuckers are highly acceptable baits for fishermen. In fact, many lure makers have patterned artificial lures to resemble the chubsuckers (Figure 7).

Because of their round cylindrical bodies, soft fins, and modest size, the Lake Chubsucker has interested biologists for its potential as prey in lakes and ponds that are intensely managed for sport fishing (Bennett and Childers 1966; Shireman et al. 1978). Lake Chubsuckers school unguarded in nearshore areas for sev-

eral weeks after hatching, making them easy prey for Largemouth Bass *Micropterus salmoides*. However, Lake Chubsuckers did not improve growth of Largemouth Bass, which fed mostly on sunfish species (Winter 1984; Eberts et al. 1998). In lab experiments, Largemouth Bass struck at Lake Chubsuckers more often than at Bluegills *Lepomis macrochirus* and consumed them far more often (Eberts et al. 1998). Go figure.

Unanswered questions remain. The lateral line is a system of sense organs used to detect movement and vibrations in the surrounding water: very useful adaptation. The loss of the lateral line in members of *Erimyzon* is a derived trait but raises the question: “Why lose a lateral line organ?” No one has ever investigated that evolutionary question. The gnarly tubercles seem to communicate to other males “back off or risk getting head butted!” However, the extended anal fin in male creek chubsuckers and the lesser sexual dimorphism in Sharpfin Chubsucker (Hubbs 1930) have never been explored.

The unfortunate reality is that there are few studies that examine the status of populations of any of the chubsucker species throughout their ranges. Lake Chubsucker is extirpated from Pennsylvania and imperiled throughout much of its native range. It has been extirpated from Iowa’s interior waters, but a single specimen was collected by Iowa DNR in 2012 from the Missis-

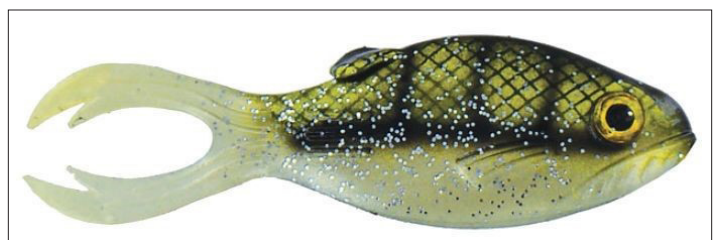


Figure 7. Fishing lure made to mimic a chubsucker, sold by bigbitebaits.com

issippi River near Guttenberg in northeastern Iowa. Because of the destruction of much of the permanent wetlands on which this species relies, it is one of the rarest sucker species found in Ohio where it is a threatened species (Baker et al. 2015). Milton Trautman, author of *The Fishes of Ohio* (1981), described the detrimental effect of heavy erosion on Western Creek Chubsucker. He wrote that “upon several occasions I found many dead chubsuckers in a stream section whose water contained much clayey silt. This silt had been washed into the stream from recently cultivated cornfields during a brief summer shower. The sticky silt had packed about the gills of the chubsuckers, suffocating them.” In addition, Western Creek Chubsuckers are presumed extirpated from Wisconsin and are critically imperiled in Michigan.

Investigations by Bill Hopkins and associates discovered that exposure to coal ash reduced growth and swimming speed and induced severe fin erosion in juvenile Lake Chubsuckers (Hopkins et al. 2000, 2002, 2003). Dynamics of chubsucker populations are particularly sensitive to perturbations that affect survival of immature stages (Young and Koops 2011). Sharpfin Chubsuckers quickly repopulated short segments that were defaunated (Gunning and Berra 1969) and their populations are secure. However, the chubsuckers are among the least investigated suckers in the eastern US.

There are no “Save the Chubsucker” associations. So, keep a look out for these “chubby” suckers and see what they might be telling you. The gnarly male breeding tubercles, lack of lateral line, horizontal juvenile stripe, uncertain diet, geographic variation, and intermediate trophic position are all fascinating issues that deserve further attention by fish scientists and enthusiasts alike.

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