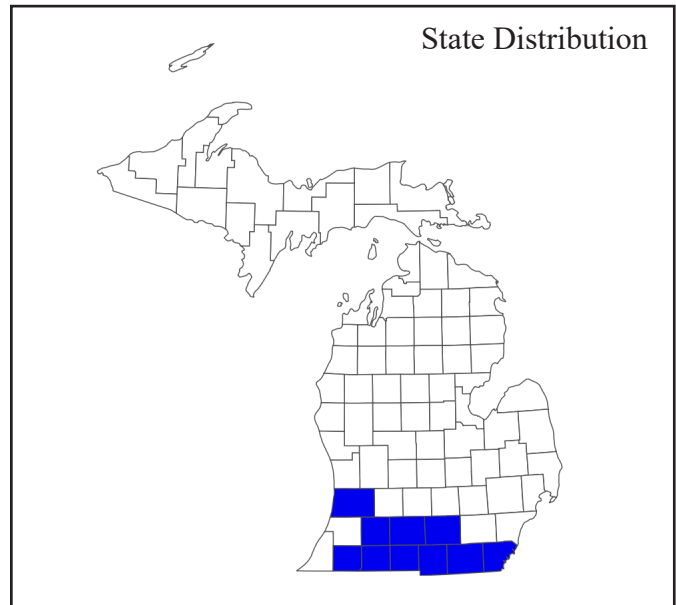
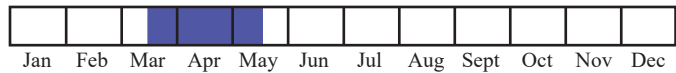




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Best Survey Period



Status: State Endangered

Global and State Rank: G5 (Secure) / S1 (Critically Imperiled)

Family: Catostomidae (Suckers)

Synonyms: *Erimyzon oblongus claviformis* Girard, *Moxostoma claviformis* Girard

Other Common Names: Creek chubsucker

Total Range: Historically, the western creek chubsucker's range included the Great Lakes (Michigan, Huron, and Erie) and Mississippi River Basins north to southern Michigan and southern Wisconsin, and south to the Gulf Slope drainages from the Apalachicola River Basin in Georgia to the San Jacinto River in eastern Texas (Page and Burr 2011). Currently the species is extirpated (SX) in Wisconsin, critically imperiled (S1) in Michigan, imperiled (S2) in Texas, vulnerable (S3) in Ohio, and apparently secure (S4) or secure (S5) in the other states within its range in the Mississippi River Basin (Nature-Serve 2026).

State Distribution: Western creek chubsucker has been documented in the far southern portion of Michigan in the St. Joseph River Watershed (Lake Michigan Basin), Kalamazoo River Watershed, Bean Creek (Maumee

River Watershed), Ottawa River (Lake Erie Basin), and headwaters of the River Raisin (Lake Erie Basin). The furthest north it has been recorded in the state is in the downstream reaches of the Kalamazoo River in Allegan County (MNFI 2026). Most records of western creek chubsucker are over 40 years old, with the last confirmed individual observed in 2005 in the St. Joseph River Watershed (Daly and Johnson 2018, MNFI 2026).

Recognition: Similar to other species of sucker (Catostomidae), western creek chubsucker has large fleshy lips on the underside of its head, teeth present in the throat but not in the mouth, cycloid scales on the body, no scales on the head or spines in fins, and no adipose fin. Like other species in the genus *Erimyzon*, it also has no lateral line, no black spots at scale bases, and the tip of the upper lip is separated from the snout by a groove. Breeding males have three tubercles on each side of the snout and a hooked anal fin (Trautman 1981).

Maximum length of western creek chubsucker is 18 cm (7.1 inches); however adult breeding males can be as small as 6.1 cm (2.4 inches). Their color is olive-bronze with bronze or golden-yellow overcast, and the dark edges along its scales give the western creek chubsucker a cross-hatched appearance. The sides are lighter and more golden colored than their dorsal area, and the ventral surface is yellow to white. On small young there are 5-8 relatively dark saddle bands on the back and



a blotch below each band on the sides. These are less distinct on older individuals and are usually merged into a dark band along the side. The number of dorsal rays is usually 9-10 but can be 8-11. The number of lateral scale rows is usually 39-41 but can be 37-43 (Trautman 1981, Page and Burr 2011). Bailey et al. (2004) reported that the number of dorsal rays is usually 10 and the number of lateral scales is 39 or more.



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Similar species include Eastern creek chubsucker (*Erimyzon oblongus*), which has more dorsal fin rays (11-14, usually 12) and 41-43 scale rows. The length of Eastern creek chubsucker is usually less than 3.4 times the depth of the body, while the length of western creek chubsucker is usually more than 3.4 times the depth. Identifications between *E. claviformis* and *E. oblongus* should be carefully considered, as they were treated as the same species until recently (Bailey et al. 2004); however, eastern creek chubsucker is not known to occur in Michigan. Within the state, lake chubsucker (*Erimyzon sucetta*) is the fish most likely to be confused with western chubsucker. Lake chubsucker has more dorsal rays (11-12, rarely 10-13) and fewer scales in the lateral series (35-37, rarely 33-40) than western creek chubsucker. Species of sucker outside of the genus *Erimyzon* have a lateral line and a dorsal fin with a distal edge that is straight in contrast to *Erimyzon* spp., which have a rounded or convex distal edge (Trautman 1981, Hubbs et al. 2004).

Best Survey Time: The best time of year to survey for western creek chubsucker in Michigan and its northern range is in the early spring during spawning runs after

the ice has melted. Gill net, trap, or fyke net surveys are best done from mid-March to mid-May. Electrofishing for juveniles is best conducted in early spring (mid-March to mid-May) or fall (mid-September to mid-October) (Schneider et al. 2000).

Habitat: Western creek chubsuckers use different habitats depending on the time of year. In the spring, they inhabit small, clear streams with moderate to high gradients where they spawn. After spawning, typically in the summer, they migrate downstream into larger streams where they remain through the fall and winter (Latta 2005). The largest populations of western creek chubsucker in Ohio occur in streams with sand and gravel substrates. They cannot survive in water that is extremely turbid with clayey silt (Trautman 1981). In Michigan, western creek chubsucker has been documented almost exclusively in small streams; however an occurrence record from 1982 reported the fish in the lower mainstem of the Kalamazoo River (MNFI 2026).

Biology: Western creek chubsuckers migrate upstream each spring to their spawning habitat and back downstream in early summer to larger streams (Breder and Rosen 1966, Whitehurst 1981, Becker 1983). A description of the spawning behavior of western creek chubsucker in small waterways in Illinois is given by Page and Johnston (1990):

“Males defended territories over beds of gravel or near pits that had been constructed by central stoneroller (*Campostoma anomalum*) or creek chub (*Semotilus atromaculatus*). Females were located upstream in quiet water and drifted downstream tail first into the territory of a male. After a female entered a male’s territory, she dug in the gravel with her snout, an action which appeared to signal the male that she was ready to spawn.”

Most spawns in the 1990 study occurred over pits constructed by other fish species, but some took place over gravel runs. Observations of spawning were made in small streams in the Wabash River drainage (Illinois) approximately 1 meter (3.28 feet) wide, with a water depth of 20 cm (7.9 inches) to 50 cm (19.7 inches). Current speed averaged 0.25 m/s (0.82 feet/s) and water temperature ranged from 15 to 24°C (59 to 75.2°F) (Page and Johnston 1990). In general, chubsuckers are considered highly fecund, laying thousands of eggs per female and therefore providing an important food source for many egg predators (Orth 2020). The lifespan of fe-



males is six to seven years, and males live for five years (Wagner and Cooper 1963).

Western creek chubsuckers have several characteristics that are different from most other sucker species (Cattostomidae) and likely represent the derived condition within this family. They are relatively small in size with no pronounced sexual dimorphism, they pair spawn, and males are strongly territorial with large head tubercles. In other sucker species, females are larger than males, which may give the advantage of increased fecundity in larger females and greater mobility in smaller males. As other sucker species tend to have larger females and other highly territorial fishes (e.g., darters and minnows) have larger males, the lack of sexual dimorphism in western creek chubsuckers is unique (Page and Johnston 1990).

The western creek chubsucker preys on invertebrates including copepods, cladocerans, and chironomid larvae (Goldstein and Simon 1999). Their diet also includes organic detritus (including plant fragments), algae, diatoms, midge larvae (Diptera), and small bivalves (Flemer and Woolcott 1966, Gatz 1979, Sheldon and Meffe 1993). No native freshwater mussel species (Unionidae) are reported to utilize western creek chubsucker as a host, although eastern creek chubsucker has been documented as a host for three unionid mussel species that occur in Michigan (elktoe, *Alasmidonta marginata*; creek heelsplitter, *Lasmigona compressa*; and flutedshell, *Lasmigona costata*), all three of which are species of Special Concern in the state (Freshwater Mussel Host Database 2026). While not a host for freshwater mussels, western creek chubsucker in Oklahoma and Arkansas are hosts for multiple parasites, including protists, cnidarians, flatworms, cestodes, nematodes, and spiny-headed worms (McAllister et al. 2021).

Conservation/Management: The outlook for western creek chubsucker in Michigan is uncertain. Out of 12 occurrences for western creek chubsucker in Michigan, half were documented before 1980, three in 1982 from the Kalamazoo River Watershed, one in 1995 from the Bean Creek Watershed, and two in 2005 from the St. Joseph River Watershed (Lake Michigan Basin) (Daly and Johnson 2018, MNFI 2026). The individual from the Bean Creek Watershed was the only one found over the course of 48 sites surveyed from 1993 through 1996 targeting western creek chubsucker in Michigan (Latta 1994, 2005).

Headwater streams in areas of high agricultural use can often be impacted by increased silt runoff. This species is particularly sensitive to high turbidity from clayey silt (Trautman 1981). At the same time, it is reliant on small headwater stream habitats, especially for spawning when it moves further upstream. Replacing natural land cover with impervious surfaces and intensive agriculture increases the flashiness of streams. In addition, precipitation and streamflow in Michigan have been increasing since 1901, and more intense rain events are expected due to climate change (Manzano and Barkdoll 2022). Higher maximum flows increase erosion and transport of sediments across the land into streams. Due to its low tolerance of turbidity and siltation, erosion and siltation lead to loss of western creek chubsucker habitat. Creek chubsuckers have been found dead of suffocation, silt packed in their gills, after spring showers increased run-off from nearby agricultural fields (Trautman 1981). Populations of silverjaw minnow (*Notropis buccata*), and other species which have a similar aversion to siltation, have been observed to decline over several years with an increase of silt into formerly silt-free habitats (Trautman 1981). Maintaining naturally vegetated buffers in riparian zones can help minimize erosion, siltation, and turbidity.

Dams and impoundments in Michigan's watersheds are barriers to fish passage, preventing gene flow, migration to new habitats, and dispersal to avoid impacts and stressors. In addition, dams convert flowing stream habitats to still water impoundments and alter sediment transport in stream and river systems, namely increasing silt deposition in the impoundment upstream of the dam and starving the streambed of sediments downstream. In addition, water temperature and flow regimes are often also highly altered. Together, these changes alter habitat in ways that can make it unsuitable for silt intolerant fish species like western creek chubsucker (Mammoliti 2002). Removal of obsolete dams and impoundments can have long term benefits to western creek chubsucker and other Michigan fish species.

Research Needs: Targeted surveys to locate viable populations of this rare species in Michigan are needed. Relatively recent occurrences in the Maumee River Watershed in Indiana and Ohio can be used to focus survey efforts in watersheds where they are most likely to be found. Opportunities to improve stream connectivity and remove barriers to fish migration in watersheds with western creek chubsucker should be investigated. This



may allow Maumee River Watershed populations in Indiana and Ohio to reestablish populations in the upper reaches of the watersheds reaching north into Michigan.

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