



Status: State special concern

Global and state rank: G5/S2S3

Family: Ictaluridae (Bullhead Catfish)

Total range: The brindled madtom occurs in the lower Great Lakes drainage in Michigan, Ontario, and New York. It also occurs in Illinois and Indiana, east to the Ohio River basin and west to the Mississippi River basin (Scott 1973). Brindled madtoms have been collected in the western portions of Tennessee and in Oklahoma and southeastern Kansas. The species remains imperiled (S2) or vulnerable (S3) throughout the north and western portions of its range while in the south it is generally secure (S4/S5) (NatureServe).

State distribution: The brindled madtom is only found in the southeast corner of Michigan in the Lake Erie Basin (Bailey et al. 2004). Historically, the brindled madtom occurred in the Tiffin, Huron, Saline, and Raisin Rivers and Davis, Mill, and Portage Creeks. Within the last 20 years, brindled madtom have been found in the Huron, Raisin, Belle, and Pine Rivers and Stoney Creek. The species was also found in several lakes in the early 1900's, specifically, Portage, Base Line, Bass, Union, and Orchard Lakes. However, no surveys of the brindled madtom within these lakes have

occurred within the last 20 years. Additionally, Lake St. Clair currently has viable populations of brindled madtom.

Recognition: The brindled madtom has four dark conspicuous saddle marks on its back, giving its name (Bailey et al. 2004). The species rarely grows larger than 50-76 mm in length (Scott 1973). This fish is stocky but then becomes strongly laterally compressed behind the anal fin (Scott 1973). They have one pair of long flattened barbels close to the eye and a moderately subterminal mouth (Scott 1973). The adipose fin is connected to the caudal fin and the last saddle band reaches the edge of this fin (Bailey et al. 2004). The dorsal fin is well ahead of the midpoint of the body and has a black tip (Bailey et al. 2004, Scott 1973). This species is most often confused with the northern madtom in Michigan (Taylor 1969, Trautman 1981).

Best survey time/phenology: The brindled madtom is likely best surveyed during the summer and early fall months when water flows and turbidity are low in riverine systems. Sampling in lakes may be more flexible. Because this species is nocturnal, night surveys may be the most successful (Scott 1973, Trautman 1981).



Habitat: The habitat of the brindled madtom varies throughout its range according to the latitudinal location of populations. In the Midwest, it is typically found in slow-moving rivers with soft substrates and scattered emergent vegetation (Trautman 1981). Within streams, individuals primarily inhabit pools below riffles in weedy areas (Smith 1985). They often hide under stones, organic material, and woody debris (Trautman 1981). In lakes, they are found over soft bottoms with an 'abundance of leaves and twigs' (Scott 1973).

Biology: Little is known about the life history of the brindled madtom. Taylor (1969) studied the species in Michigan and indicated that it spawns from July to early August in water temperatures around 25°C. Nests are guarded by the males, which consist of a cluster of 34-46 large, amber eggs (Taylor 1969). Spawning occurs in areas with silty substrates and emergent vegetation. Like other madtoms, this species prefers to feed at night on aquatic insects, other drifting invertebrates, and plants (Scott 1973). Little is known about the predators of the brindled madtom; however predation may not be high due to the species secretive and nocturnal nature.

Conservation/management: The dwindling populations of the brindled madtom suggest that this species has very specific ecological requirements and is sensitive to habitat disturbance and degradation. Trautman (1981) suggests that increased turbidity and stream flow alteration has led to the decline of the species in Ohio. Brindled madtoms are intolerant to toxic pollutants and siltation (Parker 1987). Siltation decreases the quality of habitat for both eggs and adults by reducing the amount of oxygen in the water. Increased siltation may also limit the ability of brindled madtoms to feed. Thus, it is important to maintain broad riparian buffers. Additionally, the brindled madtom competes for spawning habitat and cover with the round goby, an introduced species. Areas where both brindled madtom and round goby occur should be especially considered when preserving the species and its habitat. Because little is known of the specific habitat and biology of the brindled madtom, it is important to preserve the natural state of the rivers where the species occurs.

Research Needs: Population assessments are needed. Due to the brindled madtoms nocturnal nature and penchant for hiding, effective survey and assessment techniques need to be determined. Updated and additional surveys are needed for lakes, since present lake population data for brindled madtoms is historical. Specific habitat requirements as well as tolerance levels to threats should be further studied for the brindled madtom.

Selected references:

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