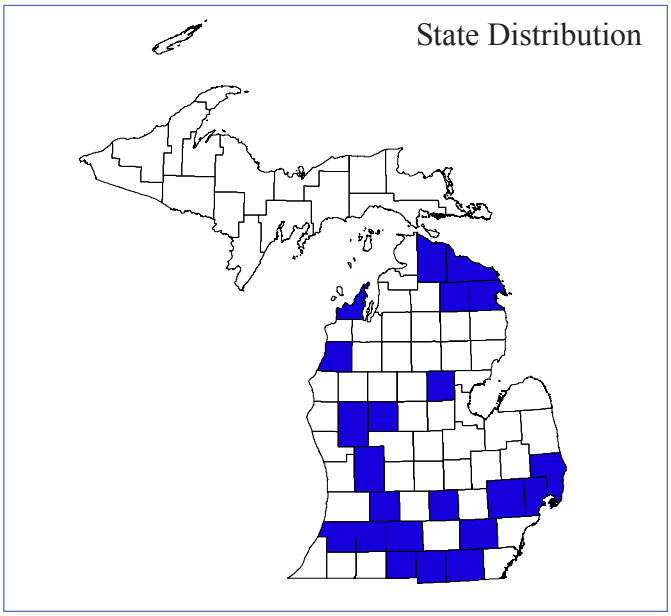
Notropis anogenus Forbes — Pugnose Shiner

Courtesy of Konrad Schmidt



Best Survey Period

Status: State Special Concern

Global and state rank: G3/S3

Family: Cyprinidae (minnows)

Total range: The pugnose shiner is found from the Lake Ontario drainage of eastern Ontario and western New York to southeastern North Dakota and central Illinois (now extirpated). It is mostly restricted to the Great Lakes and Mississippi River basins but also is found in the Red River drainage of Minnesota and South Dakota. The pugnose shiner is rare and seems to be declining over most of its range (Page and Burr 1991).

State distribution: Historically, the pugnose shiner was found in 18 watersheds within Michigan: Au Sable, Betsie-Platte, Black, Cheboygan, Clinton, Detriot, Grand, Kalamazoo, Manistee, Muskegon, Pere Marquette, Pine, Raisin, St. Clair, St. Joseph, Tittabawassee, Thornapple, and Thunderbay. Within the last 20 years they have only been found in the Black, Cheboygan, Kalamazoo, Pere Marquette, St. Clair, St. Joseph, and Thunderbay watersheds.

Recognition: The pugnose shiner is a small (38-56 mm) straw colored minnow with a distinctively tiny almost vertical upturned mouth (Scott and Crossman 1973, Smith 1979, Smith 1985, Trautman 1981). This species has a complete, slightly de-curved lateral line with 34-38 scales and a dark lateral band that extends from the caudal peduncle, through the eye and around the snout (Page and Burr 1991, Smith 1979, Smith 1985). They have 8 dorsal rays. In addition, the pugnose shiner has a black peritoneum (lining of body cavity) that can be seen through the body wall of preserved specimens (Smith 1985).

The pugnose shiner is similar looking to the pugnose minnow. The pugnose shiner has a dark peritoneum and 8 dorsal rays, whereas the pugnose minnow has a silvery-white peritoneum and nine dorsal rays (Page and Burr 1991).

Best survey time/phenology: The best sampling time is unknown. Often most fish species are best sampled in late summer during low flows. However, this species is associated with macrophytes and hence may be best sampled when macrophyte growth is low.

Habitat: The pugnose shiner inhabits clear vegetated lakes and vegetated pools and runs of low gradient streams and rivers (Page and Burr 1991). They appear to be extremely intolerant to turbidity (Trautman 1981).

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Biology: Very little is known about the pugnose shiner, except its habitat. It has been noted to spawn in June and July in Michigan (Smith 1985). The pugnose shiner's distinctive mouth suggests that they have a specialized mode of feeding yet little work has been done on this aspect. Becker (1983) reported that filamentous green alage, plant material, and cladocerans were found in the intestine of the pugnose shiner. He also found that they prefered *Chara* and *Spirogyra* over animal foods. The blackchin shiner has been shown to be a good indicator for pugnose shiner habitats (Carlson 1997).

Movements: Nothing is known about the movements of the pugnose shiner.

Conservation and management: The pugnose shiner is naturally rare throughout its range (Parker et al. 1987). This species is susceptible to turbidity and any practice that removes or decrease macrophyte abundance or changes sediment transport such as herbicides and shoreline or riparian modifications can impact this species. Their habitats tend to be difficult to sample effectively which may present an inadequate picture of their population status.

Research needs: There is a paucity of information on this species and hence studies on their life history are needed. Targeted sampling efforts are needed to determine the true status of the pugnose shiner in Michigan due to the difficulty in sampling their habitats. Studies to examine whether blackchin shiners are good indicators for pugnose shiner habitats in Michigan, could prove to be helpful for identifying new areas to survey for the pugnose shiner.

Selected references:

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