Microhabitat selection and ecological niches of three cyprinid species in east Texas streams

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Abstract

We investigated the microhabitat selection and the morphological trait space occupied by three Cyprinid (Cyprinidae family) species: Blacktail shiner (Cyprinella venusta), Blackspot shiner (Notropis atrocaudalis), and Sabine shiner (Notropis sabinae) in two streams, Banita and La Nana creeks, within the La Nana watershed in east Texas. Since Blackspot and Sabine shiners are species of conservation concern in the state of Texas, we explored whether their ecological niche overlapped with the Blacktail shiner, which is a generalist and abundant species in this system. Our surveys were based on describing habitat conditions, species occurrence by habitat types (riffle, pool, and run), and morphological trait space occupied by these species. Our results suggest Blacktail shiner dominated in all habitats surveyed. Blackspot and Sabine shiner were less abundant and appear restricted to habitats with shallow and running water (e.g., riffles). The three shiners do not overlap significantly in morphological trait space. Future research will explore the trophic niche of these species.