

Kansas Fishes: example species account

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River Shiner, *Notropis blennius* (Girard 1856)

Kansas Species in Need of Conservation

Type locality: “Arkansas River, near Fort Smith,”
Arkansas.

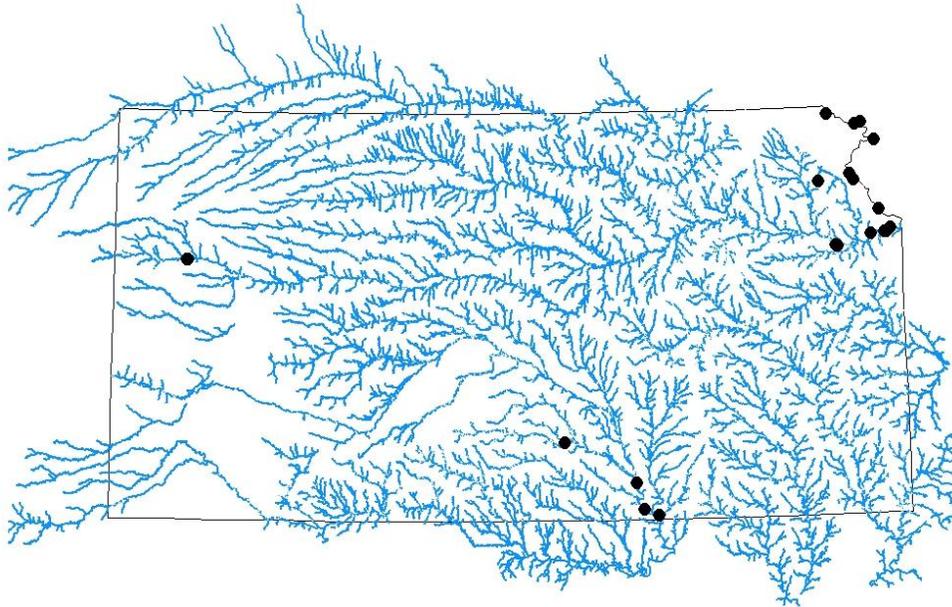
Synonyms:

Alburnops blennius Girard

Description: Mouth large, extending below eye; upper jaw longer than width of eye. Barbels absent; frenum absent. Intestine with a single S-shaped loop; peritoneum silvery with dark spots. Dorsal fin with 8 rays; black pigment restricted to margins of rays. Anal fin usually with 7 rays. Pharyngeal teeth 1,4–4,1

or 2,4–4,2. Dorsal-lateral scales not prominently outlined by black pigment. Adults about 76 mm (3 inches) total length.

Similar Species: The River Shiner is distinguished from the Sand Shiner (*Notropis stramineus*) and Mimic Shiner (*N. volucellus*) by its larger mouth, the general absence of dark pigment outlining the upper scales, and the presence of a second row of pharyngeal teeth. Additionally, the Mimic Shiner has 8 anal rays, and the exposed portions of the anterior scales of its lateral line are distinctly taller than wide.



Habitat: As an adult, the River Shiner primarily occurs along the main channel of larger rivers, but rarely in areas of strong current or pools.⁹ The species also inhabits lakes associated with rivers.¹ Isolated

records exist from smaller rivers in the upper Kansas River basin (Republican and Smoky Hill rivers).^{3,14} The River Shiner schools with other minnows, such as the Emerald Shiner (*Notropis atherinoides*), at

midwater, usually over substrates of sand and gravel.⁹ River Shiner young-of-the-year in the Ohio River inhabited backwaters from late July through early August and main-stem margins in November.²

In relatively clear rivers, the species moves from water deeper than 90 cm (35 inches) into shallower water only at night, although it will occupy shallow water that is turbid during the day.^{11,12} In water shallower than 105 cm (41 inches) in the Platte River, abundance of the River Shiner exhibited a seasonal pattern, peaking at 1200–1500 hours (afternoon) in spring and at 2400–0600 hours and 2100–0300 hours (night) during summer and autumn, respectively.¹⁵

Reproduction and Growth: The River Shiner spawns from June to August.^{1,3,5,7,9} Fecundity estimates for fish in the upper Mississippi River of Minnesota and Wisconsin were 953–2,002 eggs per female, with larger fish producing the most eggs.⁵ Mean diameter of the eggs was 0.89 mm (range 0.86–1.06 mm).⁵ Spawning occurs on bars of gravel or sand.¹²

In Wisconsin, fish at ages 0–4 were reported,¹ but only ages 0–2 were collected in Arkansas.⁷ Total lengths for five age classes in Wisconsin during September were 28–46 mm at age 0, 46–64 mm at age 1, 70–84 mm at age 2, 82–92 mm at age 3, and 89–108 mm at age 4.¹ In Arkansas, lengths were similar at ages 1 and 2.⁷

In Wisconsin, males were sexually mature at age 1, and females were sexually mature at age 2.¹ In Arkansas, where the oldest fish were reported to be age 2, the smallest sexually mature males and females were 35 mm standard length.⁷

In the Ohio River, River Shiner young-of-the-year had an overall growth rate of 0.29 mm per day from late July to early October.² However, the most rapid growth (0.63 mm per day) occurred early in this period, during late July and early August. This was the period of transition from a diet of aquatic invertebrates to filamentous green algae.²

Food and Feeding Habits: River Shiner adults are omnivorous, feeding on aquatic invertebrates, algae, decaying material, seeds, and other plant material in varying proportions during the year; however, no consistent seasonal pattern of items in the diet is

evident across the range of the species.^{1,7,13} For River Shiner adults in the Arkansas River in Arkansas, feeding was greatest from 1830 to 2130 hours (late evening) during June.⁷

River Shiner young-of-the-year in the Ohio River fed predominantly on aquatic invertebrates (copepods and midge larvae) in late July, but filamentous green algae became increasingly abundant in the diet in late August and early October, even though copepods and midge larvae continued to be available.²

Conservation Status: Only Kansas includes the River Shiner on its state list of protected species, as a species in need of conservation. The range of the species in Kansas declined after 1960 in the upper Kansas and Arkansas river basins.⁴ The species also was extirpated from the Vermillion River basin in South Dakota.⁶ Conversely, increases in relative abundance of the River Shiner occurred in the Missouri River in Missouri (upstream from the mouth of the Kansas River) and in South Dakota following construction of impoundments, which reduced stream turbidity and, perhaps, provided additional habitat within the reservoirs.^{6,10} Because numbers of the River Shiner might increase in association with reservoir habitat,¹⁰ bait-bucket introductions of the species into reservoirs on the western Great Plains, outside its native range, might threaten other species of stream fishes through competition for food.⁸

References: 1) Becker 1983; 2) Carter and Cavender 1982; 3) Cross 1967; 4) Eberle 2007; 5) Hatch and Elias 2002; 6) Hoagstrom et al. 2006; 7) Hudson and Buchanan 2001; 8) Patrikeev et al. 2005; 9) Pflieger 1997; 10) Pflieger and Grace 1987; 11) Robison and Buchanan 1988; 12) Trautman 1981; 13) Whitaker 1977; 14) Woodling 1985; 15) Yu and Peters 2003.

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