

Biological Scientific Writing ([BIOL 825](#))

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Editing Exercise #3

Working on your own, save this file and **use Adobe Acrobat** to edit this text for grammar and conciseness as necessary based on what we covered in class.

The Topeka shiner, *Notropis topeka* (Girard) has been infrequently collected in western Kansas. It was reported from nine sites in the Smoky Hill and Republican river basins (Cross 1967), however, it was considered to have been extirpated from all but 2 sites in Willow Creek in Wallace County and Cherry Creek in Cheyenne County (Cross 1967). It is known to inhabit quiet pools in small, clear, upland streams which have sand, gravel or rubble substrates (Pflieger 1997). Minckley and Cross (1959) report the range of *N. topeka* is small compared to other plains fishes. It has disappeared from much its range making it a species of concern in several states and it was listed as an endangered species on December 15, 1998 by the U.S. Fish and Wildlife Service (63 FR 69008-69021).

Native stream fish community surveys conducted in 2005 throughout the Smoky Hill River basin in northwestern Kansas have revealed a new locality for *N. topeka*. Two specimens were found using a backpack electrofishing unit on May 18, 2005, in Ladder Creek, Scott County, Kansas downstream from Lake Scott State Park. *N. topeka* has never previously been recorded from the Ladder Creek drainage. This locality also is important since Big Springs along Ladder Creek within the state park also harbors the only known population of Scott riffle beetle (*Optioservus phaeus*), an endangered species in Kansas (Kansas Administrative Regulations 115-15-1). They have never been found in great numbers in northwestern Kansas.

N. topeka comprised less than one percent of the fish community sampled, which also included *Hybognathus bankinsoni*, *Catostomus commersoni*, *Notropis stramineus*, *Cyprinella lutrensis*, *Semotilus atromaculatus*, *Pimephales promelas* and *Etheostoma spectabile*.

No detailed descriptions of stream conditions or habitat types under which *N. topeka* were collected in northwestern Kansas have ever been documented previously. From the state park to its confluence with the Smoky Hill River, Ladder Creek only extends for approximately 25 km. Near the stream's lower end where our specimens were collected, discharge was measured at 0.1 cms with an average velocity of 0.2 m/s. Average width and depth was 3.2 m and 0.2 m respectively. Physicochemical parameters measured were dissolved oxygen at 8.3 mg/L, temperature - 18°C, and conductivity - 175 µmhos/cm. Ladder Creek is a typical lowgradient High Plains stream which is bordered entirely by grasslands used for pasture, and sparse stands of willows. Substrate was composed primarily of sand and detritus. Riffle areas with exposed gravel were rare and pools ranging in depth from 0.25 - 1.0 m were covered with a heavy layer of detritus. Other instream habitat varied from thick patches of *Elodea* sp. and filamentous algae to exposed willow roots and overhanging vegetation.

The disappearance of this species throughout its range has been attributed to a decline in water quality caused by agricultural practices (Eddy and Underhill 1976, Lee et al. 1980, Pflieger 1975). The occurrence of *N. topeka* in the Ladder Creek system on the High Plains region of northwestern Kansas provides hope that other populations can be found in this large area where aquatic faunal distributions are poorly documented.