

**THE STURGEON CHUB AND THE BROOK SILVERSIDE IN THE PLATTE RIVER OF NEBRASKA** — Decreased flow rates and habitat alterations in the Nebraska Platte River system have resulted from reservoir construction and irrigation practices (Sidle et al., 1990, *Prairie Nat.* 21:91-104). Native fish distributions can be affected by such disturbances (Lee et al., 1980, *Atlas of North American freshwater fishes*, North Carolina Biological Survey, Raleigh; Matthews and Heins, 1987, *Community and evolutionary ecology of North American stream fishes*, University of Oklahoma Press, Norman) as well as by non-native fish introductions (Lynch, 1991, *Proc. Nebr. Acad. Sci.*, 101 Annual Meeting, Lincoln, NE, p. 29). Reported here is evidence of persistence of the native sturgeon chub (*Macrhybopsis gelida*) and introduction and dispersal of the non-native brook silverside (*Labidesthes sicculus*) in the Platte River of Nebraska.

The sturgeon chub inhabits open channel streams and rivers with swift, turbid water and sand or fine gravel bottoms (Pflieger 1975, *The fishes of Missouri*, Missouri Department of Conservation, Jefferson City) in the Missouri River, its western tributaries, and Mississippi River south to Louisiana. It is rare or extirpated from many portions of its range, and the primary causes of declines are impoundment, wing dikes, and revetments resulting in deep, uniform, and narrow channels with decreased turbidity (Lee et al., 1980, op. cit.; Matthews and Heins, 1987, op. cit.). Baily and Allum (1962, *Fishes of South Dakota*, Misc. Publ. Mus. Zool. Univ. Mich. No. 19) summarized the distribution records in Nebraska prior to the 1950s. It was known from scattered localities in the eastern Niobrara River, the Missouri River, and the Platte River west to Grand Island, NE. Other records include the eastern Elkhorn River, the Loup River, and the Republican River west to Indianola, Red Willow County.

More recently, Stasiak (1990, Population status of sicklefin chub [*Ilybopsis meeki*] and sturgeon chub [*Ilybopsis gelida*] in the Missouri River of Nebraska in 1989; Final report on contract OWF-05-132-00101 to the U.S. Army Corps of Engineers, Omaha Office) concluded that the sturgeon chub is rare in the Missouri River along Nebraska. Bliss and Schainost (1973, *Middle Platte Basin Stream Survey*, Nebraska Game and Parks Commission, Lincoln) and T. I. Madsen (1985, *The status and distribution of the uncommon fishes of Nebraska*, M.S. Thesis, University of Nebraska-Omaha), and S. J. Weldon (1992, *Population status and characteristics of *Macrhybopsis gelida*, *Platygobio gracilis* and *Rhinichthys cataractae* in the Missouri River Basin*, M.S. Thesis, South Dakota State University, Brookings) failed to collect *M. gelida* in their surveys of Nebraska waters that included the Platte River system. In 1987, a single adult (University of Nebraska State Museum 3656) was collected at Fremont, Dodge County during extensive sampling of the lower Platte River (Peters et al., 1987, *Platte River suitability criteria: habitat utilization, preference and suitability index criteria for fish and aquatic invertebrates in the Lower Platte River*, Nebraska Game and Parks Commission, Lincoln). On 10 September, 1991, three adult specimens (UNSM 506) were collected in the Platte River at Gretna, Sarpy County, NE, by R. Stasiak (University of Nebraska-Omaha). Independently, I collected a single adult male *M. gelida* (SL = 64.0 mm, UNSM 15602) at that site on 17 September. Conditions at this site were

swift, turbid waters (about 0.5 - 1.0 m deep) with a sand/gravel substrate. These data indicate that *M. gelida* resides in the eastern portion of the Platte River where deep flowing, turbid water still exists. The lack of locality records in recent years in central and western Nebraska suggests an extensive range reduction as was concluded by (Weldon, 1992, op. cit.) for the Missouri River Basin in general.

The brook silverside (*Labidesthes sicculus*) occurs in clear warm streams, lakes and reservoirs with little current (Lee et al., 1980, op. cit.; Pflieger, 1975, op. cit.) and ranges from the Mississippi and southern Great Lakes Basins, the Gulf Coastal Plain, and the Atlantic Slope north to South Carolina (Lee, 1980, op. cit.). Introduced accidentally in Nebraska at the Sutherland cooling pond in July of 1979 (M. Madsen, Nebraska Game and Parks Commission, pers. commun. to J. Lynch, University of Nebraska-Lincoln), it was detected in Lake Maloney, Johnson Lake, and Elwood and Jeffrey reservoirs in Dawson, Gosper, and Lincoln counties between 1982 and 1987. Additional introductions included Sandy Channel State Recreation Area, Phelps County, Branched Oak and Pawnee Lakes (Lancaster County) and East Twin Lake, Seward County (S. Schainost, Nebraska Game and Parks Commission, Lincoln, pers. commun. to J. Lynch, University of Nebraska-Lincoln). *Labidesthes* had dispersed to the South Platte (UNSM 3293) and North Platte Rivers (UNSM 3291) just east of North Platte, Lincoln County, by 1987 and 1988, respectively, and to the Platte River at Maxwell, Lincoln County (UNSM 3292), by 1987 (all collected by J. Lynch, University of Nebraska-Lincoln). It was subsequently collected by J. Lynch (JDL 89-146) in the Platte River south of Central City, Hamilton County, in 1989. O'Shea et al. (1990, *Prairie Nat.* 22:145-154) found *L. sicculus* in the Platte River at Elm Creek, Buffalo County, NE. Despite extensive seining efforts in the North Platte River west of North Platte since its introduction, no specimens were collected, indicating limited upstream dispersal capabilities (J. Lynch, pers. commun.). Additional records in eastern Nebraska include Lancaster County (UNSM 3314) in 1983 and Sarpy County (UNSM 01498) in 1985, both collected by R. Hrabik (Missouri Department of Conservation, Cape Girardeau, MO), probably dispersed from Conestoga Lake (J. Lynch, pers. commun.). I collected three adult-size *L. sicculus* ( $x = 51$  mm SL; UNSM 5603) in the Platte River at Gretna, Sarpy County in September, 1991. My yearly seining (1988 -1989) in Salt Creek, Lancaster County, has failed to detect this species, suggesting that dispersal from Lancaster County localities has been limited. Because upstream dispersal of *L. sicculus* seems unlikely, the record at Gretna is probably the result of dispersal from western localities. These data indicate extensive downstream dispersal and rapid range expansion of *L. sicculus* in Nebraska. The impact this species will have on native species remains to be determined but there are no native Nebraska fishes that occupy a still, surface water habitat.

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