

Note

First records of Stonecat (*Noturus flavus*) in the Qu'Appelle River watershed, Saskatchewan

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Abstract

Stonecat (*Noturus flavus*) is a unique catfish species with a restricted distribution in western Canada; it is limited to a few rivers in the prairie provinces. In Saskatchewan, its presence has previously been recorded only from the Frenchman River watershed of the Upper Missouri basin. Here we present new records from the Qu'Appelle River in the Hudson Bay basin, ~150 river km upstream from its nearest known distribution at the confluence with the Assiniboine River.

Key words: Stonecat; *Noturus flavus*; catfish; Qu'Appelle River; Saskatchewan

Stonecat (*Noturus flavus*) is a catfish (Ictaluridae) occupying relatively warm, fast-flowing water in streams and rivers with rocky substrate and riffle habitats (Rohde 1980). It is considered a high-priority candidate for assessment then listing under the Canadian *Species at Risk Act* by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC 2025). Well known from the Mississippi and upper Missouri drainages, Stonecat was historically known to occur in the Milk River watershed of southern Alberta, in the upper Missouri drainage, and was first discovered in Saskatchewan by C.B. Anderson (Royer and Anderson 1977) in the Frenchman River, a Milk River tributary, located in the semiarid mixed grasslands ecoregion. It has since been recorded throughout the Milk River watershed in Canada (Macnaughton *et al.* 2020). In the neighbouring Hudson Bay drainage in Canada, this fish species has only been recorded as recently as the 1960s (Stewart and Lindsey 1970). McCulloch (1994) later reported that Stonecat had dispersed up the Assiniboine River beyond its confluence with the Qu'Appelle River. However, despite collections near the river's mouth, no Stonecat was found during surveys conducted further upstream in

the Qu'Appelle River in Saskatchewan.

Here we report collecting two Stonecat specimens in the Lower Qu'Appelle River, south of Esterhazy, Saskatchewan (50.52949°N, 101.9641°W), on 27 August 2024, ~150 river km upstream from the Assiniboine River confluence (Figure 1). Although no specimens were retained, photographs were taken.

To date, only Black Bullhead (*Ameiurus melas*) and Channel Catfish (*Ictalurus punctatus*) have been recorded from the Qu'Appelle River in Saskatchewan (Atton and Merkowsky 1983). The Lower Qu'Appelle River is part of the Aspen Parkland ecoregion; it is dominated by farmland, with interspersed remaining stands of riparian vegetation including grasses, shrubs, Trembling Aspen (*Populus tremuloides* Michaux), and Green Ash (*Fraxinus pennsylvanica* Marshall). The Qu'Appelle River in Saskatchewan is a heavily regulated system, with six dams along its course, four of which are located on the Lower Qu'Appelle (Phillips *et al.* 2023).

The fish were caught using a gill net (two 10-m long attached panels, mesh size 25 mm and 51 mm) as part of a study by the Water Security Agency on the at-risk Mapleleaf mussel (*Quadrula quadrula*; whose

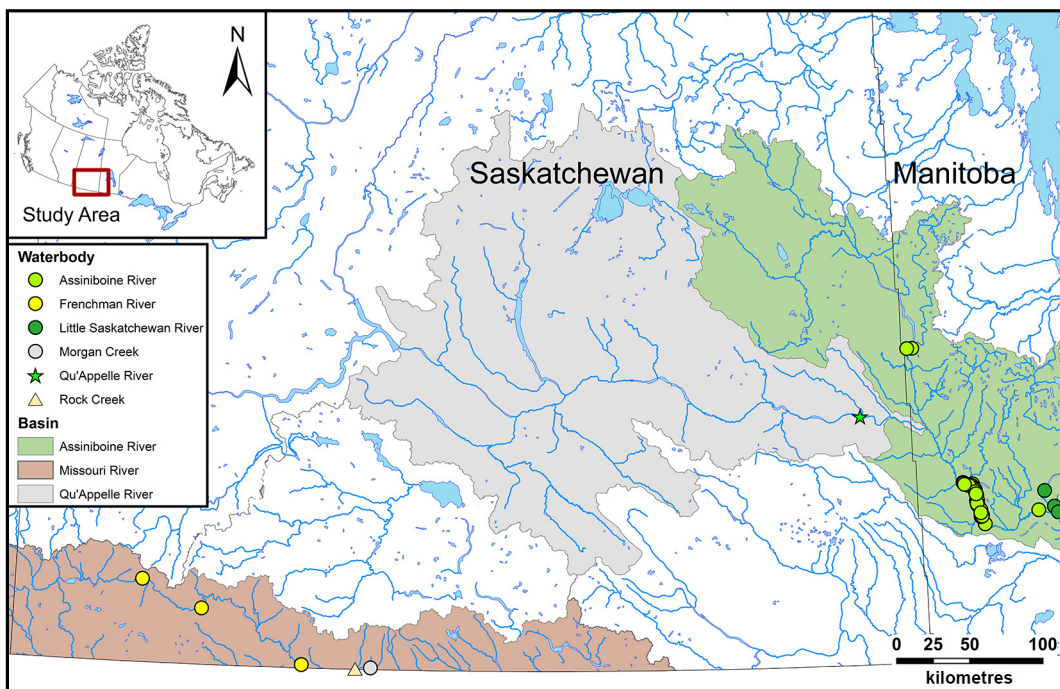


FIGURE 1. Location of a new record for Stonecat (*Noturus flavus*) in the Qu'Appelle River, Saskatchewan (star), and previous records from the Missouri and Assiniboine watersheds (Royer and Anderson 1977; McCulloch 1994; Macnaughton *et al.* 2020; Fisheries and Oceans Canada unpubl. data).

Saskatchewan–Nelson Rivers population is Threatened [SARA Public Registry 2025a]) and Lake Sturgeon (*Acipenser fulvescens*; whose Saskatchewan–Nelson Rivers population is assessed as Endangered but not listed [SARA Public Registry 2025b]) in the Lower Qu'Appelle River. The two Stonecat collected in 2024 measured 15.5 cm in length, 41 g and 21.5 cm, 90 g. More detailed records and photographs have been submitted to the Saskatchewan Conservation Data Centre and uploaded to iNaturalist (<https://inaturalist.ca/observations/238650244> and <https://inaturalist.ca/observations/238650160>). Similar-sized Stonecat captured from Ohio streams and lakes ranged from 6 to 9 years of age (Scott and Crossman 1973). The habitat in this reach of the Qu'Appelle River is dominated by a long cobble/gravel run and high freshwater mussel densities (see detailed description of “Reach 7” in WSA 2022). The mean width of the reach is 25.4 m, and although the depth varies greatly it did not exceed ~1 m when we made our collection.

At the time of sample collection, Stonecat was not believed to be present in the Qu'Appelle River system and were mistakenly recorded as Black Bullhead. On further examination, the fish were correctly identified as Stonecat. Like all ictalurid species, Stonecat exhibits an adipose fin, lack of obvious scales

(naked skin), a subterminal mouth, eight sensory barbels used to detect food in murky, dark waters, and a rounded anterior body, which becomes laterally compressed posterior to the dorsal and pelvic fins (Scott and Crossman 1973). The dorsal and pectoral fins are each equipped with a distinct serrate spine. A distinct adnate adipose fin (low ridge) extension of the caudal fin distinguishes Stonecat from most other catfishes (Stewart and Watkinson 2004). A premaxillary tooth patch with lateral extensions separates it from other species of its genus (Etnier and Starnes 1993). Stonecat is only one of two species found in Saskatchewan with an adnate adipose fin (the other is Tadpole Madtom [*Noturus gyrinus*]). In addition, this species is distinguished by a relatively short, wide head with small, dorsally located eyes and a short, deep caudal peduncle terminating in a truncate, rounded-to-square caudal fin. Stonecat can exhibit distinct colouration: strong tan to grey countershading dorsally with a yellow to white ventral surface and a pale margin outlining the caudal fin (Scott and Crossman 1973).

Five species and three genera of ictalurids occur in Saskatchewan (Black Bullhead, Brown Bullhead [*Ameiurus nebulosus*], Channel Catfish, Tadpole Madtom, and Stonecat). Stonecat and Tadpole Madtom belong to the genus *Noturus* and are the only two

catfish species in Saskatchewan that feature an adnate adipose fin. They are also among only three freshwater fish species in Canada capable of inflicting a painful venomous wound through their dorsal and pectoral spines (Scott and Crossman 1973).

The Qu'Appelle River basin is a highly managed ecosystem that provides a significant source of water, agricultural land, and recreational fishery for Saskatchewan (Phillips *et al.* 2023). The occurrence of this species in the Lower Qu'Appelle River adds to the unique biodiversity composition of this waterbody, wherein uncommon species of fish, freshwater mussels, amphibians, and reptiles are found but not well represented elsewhere in the province (WSA 2022). These new records emphasize the critical need for ongoing and contemporary ecological monitoring and observation, particularly in highly regulated waterways, to advance scientific understanding and inform effective management strategies. Additional monitoring throughout the Qu'Appelle River watershed may reveal expansion of this species' range further upstream in the Saskatchewan River watershed.

Author Contributions

Writing — Original Draft: I.D.P.; Writing — Review & Editing: K.S.P., G.F., L.E., and I.D.P.; Conceptualization: I.D.P.; Investigation: K.S.P., G.F., and L.E.; Study Design: K.S.P. and I.D.P.

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