

# The Western Sand Darter (*Ammocrypta clara*) in Pool 26 of the Mississippi River in Missouri and Illinois

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## ABSTRACT

Two new localities from Pool 26 of the Mississippi River are reported for the western sand darter (*Ammocrypta clara*) for Missouri and Illinois. One locality is at River Mile 219.4, Perry Island, St. Charles County, Missouri; the other is at River Mile 235.0-236.0, Hat Island, Calhoun County, Illinois. Specimens were collected at the first locality in one year (1992) out of five years (1989-1993) of sampling and at the second in two years (1989, 1992) out of five. The specimens of this species accounted for 0.4% of all fish collected in 1989, and 0.07% of all fish collected in 1992. All collecting sites had a sand substrate with significant current.

## INTRODUCTION

The western sand darter (*Ammocrypta clara* Jordan and Meek, 1885) is listed as endangered in Illinois (Herkert, 1993). Smith (1979) reported it from several Illinois counties and noted that it formerly occurred sparingly over the entire state except for the Wabash-Ohio drainage. He noted that the species had decreased in abundance due to habitat loss (Smith, 1979). He provided only eight relatively recent records for the species (Smith, 1979: p. 272). Herkert (1993) listed eight counties in Illinois where the species has been found since 1980. The species is uncommon in Missouri (Pflieger, 1975) but not listed as endangered or threatened.

The present distribution of *A. clara* in the Mississippi River are based on pre-1980 records. Dimmick (1988) reported on specimens from below the confluence of the Missouri and Mississippi rivers. Smith (1979) and Pflieger (1975) mapped scattered records along the Mississippi River upriver of the confluence with the Missouri River. For Pool 26 of the Mississippi River, Herkert (1993) listed Calhoun County but did not note specific localities, and the species was not reported from the county by Smith (1979). Because the distribution of this species is poorly known for Pool 26, we report localities where we collected the species between 1989 and 1994.

## MATERIALS AND METHODS

We collected specimens by trawling, night electrofishing, and seining using Long Term Resource Monitoring Program (LTRMP) methods (Gutreuter et al., in press). Seines (3-mm "Ace" netting) were 10.7 m long and 1.8 m high with a 0.9-m square bag located at the center of the net. Trawls were two seam, 4.8 m wide and 4.5 m long, slingshot balloon trawls. The body of the trawl is made of #9 nylon with 18-m diameter stretch mesh. The bag contains a 1.8-m liner consisting of 3-mm diameter mesh. At each collecting site, water temperature and depth, current velocity, and conductivity were measured using LTRMP methods (Gutreuter et al., in press). For each specimen, we measured total length to the nearest 1 mm. Except for voucher specimens deposited in the collections of the Illinois Natural History Survey (INHS 33870-33876 and 60798), we released all other fish caught at the collecting sites.

## RESULTS

In 1989, we collected 55 specimens (Table 1). Except for one fish trawled at the north end of Hat Island, Calhoun County, Illinois (NE1/4 sec. 17, T13S, R2W), at Mississippi River mile (MRM) 236.0, we seined all others in Hat Island side channel, Calhoun County, Illinois (NW1/4, sec. 21, T13S, R2W) at MRM 235.0. In 1992, we caught 25 specimens (Table 1). One each of these was collected by trawling off Hat Island, Calhoun County, Illinois (NW1/4 sec. 21, T13S, R2W), at MRM 235.0 and off Perry Island, St. Charles County, Missouri (NE1/4 sec. 4, T48N, R5E) at MRM 219.4. Night electrofishing at the latter location also yielded a single specimen. We collected the remaining 22 by seining. One came from the Perry Island location in Missouri, 18 from the southern end of Hat Island, Calhoun County, Illinois (NW1/4, sec. 21, T13S, R2W), and 3 from the Hat Island side channel location. None were collected in 1990, 1991, 1993, or 1994.

## DISCUSSION

Although specimens have been collected in two of the six years (1989-1994) of LTRMP sampling, the species was not commonly encountered. For instance, in 1989, we collected 13,853 specimens of 47 other species, and in 1992, we caught 36,435 specimens of 66 other species. *Ammocrypta clara* thus accounted for 0.4% of all fish in 1989 and 0.07% of all fish in 1992.

In part, the rarity of the species in our collections reflects the difficulty of collecting it. The species is known to be nocturnal and presumably it buries itself in the sand during day-light hours (Smith, 1979). The fact that LTRMP sampling has produced no specimen since 1992 may reflect a decline in this species' abundance in Pool 26. However, collections in 1989 and 1992 occurred during years with relatively low water levels. Thus, we were able to sample areas not accessible by seining at normal pool levels. Therefore, the species, which is uncommon under any circumstances, could easily have been missed in the other years.

Furthermore, suitable sand habitats (Dimmick, 1988) are mostly limited to the portion of Pool 26 upriver of the mouth of the Illinois River (MRM 217). Our sampling confirms

habitat descriptions published by several authors (e.g., Pflieger, 1975; Smith, 1979; Dimmick, 1988; Page and Burr, 1991). At each site, the substrate is sand with significant current velocity (Table 1). Except for three specimens, all came from main channel border sites. We found the species at shallow (0.5 m) as well as deep (8 + m) water sites. Because seining produced the bulk of the specimens (57 of 61) and is effective only in shallow water, our sampling likely underestimates the extent to which the species occurs in Pool 26.

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Table 1. Specimens of the western sand darter (*Ammocrypta clara*) collected from Mississippi River Pool 26.

Location MRM	date	water temp °C	water depth m	conductivity µmhos/cm	current velocity m/sec	n	Habitat type
235.0	8/14/89	25.6	0.5	354	0.05	54	side channel
236.0	9/20/89	19.7	8.48	369	0.31	1	channel
235.0	7/22/92	25.2	4.0	454	0.83	1	channel
219.4	8/12/92	25.0	0.5	390	0.22	1	channel border
235.5	8/12/92	28.0	0.4	407	0.11	3	side channel
219.4	8/31/92	24.0	0.4	447	0.14	1	channel border
219.4	9/29/92	18.0	4.3	426	0.85	1	channel
235.0	10/05/92	20.5	0.5	402	0.08	18	channel border