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BRIEF NOTE

EASTERN SAND DARTER, *AMMOCRYPTA PELLUCIDA* AND OTHER  
FISHES FROM THE STREAMS OF THE WAYNE NATIONAL FOREST

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In compliance with the Endangered Species Act of 1973, the National Forest Service in 1977 initiated an exploratory survey of the distribution and habitat of the eastern sand darter, *Ammocrypta pellucida* (Putnam), in streams within the boundaries of Wayne National Forest in southeastern Ohio. The eastern sand darter is not on the federal endangered species list, but it is on the Ohio, Pennsylvania, and Michigan lists (Miller 1972).

The eastern sand darter ranges from Quebec and Vermont south and west through the lower Great Lakes and the Ohio River drainage to Kentucky, Illinois, and southeastern Michigan (Scott and Crossman 1973, Clay 1975). The sand darter was common on sandy bot-

tomms in Lake Erie and many moderate- to large-size streams in Ohio prior to 1900 (Jordan 1882, Henshall 1888, Meek 1888, McCormick 1890; 1892, Kirsch 1894, Osburn and Williamson 1898, Osburn 1901). Its abundance decreased continuously during the period 1925-1950 as the clean sandy areas of larger streams became silt-smothered (Trautman 1957). Since 1952 it has been collected only from Big Darby Creek, Salt Creek, the Muskingum River, the Grand River, and the west branch of the St. Joseph River (T. M. Cavender 1977; Ohio State University, Museum of Zoology collection records). The only record of the sand darter from Wayne National Forest was from Federal Creek, Athens County, prior to 1950, although it has been collected outside the Forest boundaries from streams which flow through the Forest (Ohio State University Museum of Zoology collection records). Fish collections

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from streams in the Wayne National Forest region have not been extensive, and a reference list of species collected during the sand darter survey is presented (table 1).

All streams with drainage areas greater than 25.9 km<sup>2</sup> were visually surveyed on foot or from roads. The fish collections (25 sites) were located in sandy areas of the following streams: Pine Creek (Lawrence and Scioto Co.), Symmes Creek (Lawrence Co.), Aaron Creek (Lawrence Co.), Sand Fork (Gallia Co.), Indian Guyan Creek (Gallia Co.), Raccoon Creek (Gallia and Vinton Co.), Hocking River (Hocking and Athens Co.), Federal Creek

(Athens Co.), Sunday Creek (Athens Co.), Monday Creek (Athens Co.), Little Muskingum River (Washington and Monroe Co.), Fifteenmile Creek (Washington Co.), Clear Fork (Monroe Co.), and Cranenest Fork (Monroe Co.). Fishes were collected by seining approximately one hour at each site during 27-29 September, 8-9 and 29-30 October, and 11 November 1977, using 4.57 m and 0.91 m nylon seines and an 8.23 m nylon bag seine, all with 32 mm mesh. Fishes were identified, enumerated, and either returned to the streams or retained and preserved as voucher specimens.

Thirty-six species of fishes were col-

TABLE 1  
List of fishes collected in streams of Wayne National Forest, Ohio, 1977.\*

	P**	Sy	A	SF	IG	R	H	Fe	Su	M	LM	Fi	CF	Cr
<i>Dorosoma cepedianum</i>	—	—	—	—	—	—	—	X	—	—	X	—	—	—
<i>Esox americanus vermiculatus</i>	X	—	—	—	—	—	—	—	—	—	—	—	—	—
<i>Esox niger</i>	—	—	—	—	—	—	—	—	X	—	—	—	—	—
<i>Catostomus commersoni</i>	X	—	X	X	—	X	X	X	—	—	—	—	X	X
<i>Hypentelium nigricans</i>	X	X	X	X	X	—	X	X	—	—	X	—	—	—
<i>Minytrema melanops</i>	—	X	—	—	—	—	—	X	—	—	X	—	—	—
<i>Moxostoma erythrurum</i>	X	X	X	X	X	—	X	X	—	—	X	—	X	X
<i>Camptostoma anomalum</i>	—	X	X	X	—	—	X	X	—	—	X	X	X	X
<i>Ericymba buccata</i>	X	—	X	X	X	X	X	X	—	—	X	X	X	X
<i>Notropis atherinoides</i>	X	—	—	—	—	—	X	X	—	—	X	—	—	—
<i>Notropis chrysocephalus</i>	X	X	X	X	X	X	X	X	—	—	X	X	X	X
<i>Notropis photogenis</i>	—	—	—	—	—	—	—	—	—	—	X	—	X	X
<i>Notropis spilopterus</i>	—	—	—	—	—	—	X	X	—	—	—	—	—	—
<i>Notropis stramineus</i>	—	—	X	—	X	—	X	X	—	—	X	—	X	X
<i>Notropis umbratilis</i>	—	X	X	X	X	—	—	—	—	—	—	—	—	—
<i>Phenacobius mirabilis</i>	—	—	—	—	—	—	—	X	—	—	—	—	—	—
<i>Pimephales notatus</i>	X	X	X	X	X	X	X	X	—	—	X	X	X	X
<i>Semotilus atromaculatus</i>	X	X	X	X	—	X	X	X	—	—	—	X	X	X
<i>Ictalurus natalis</i>	—	—	X	—	—	—	—	—	—	—	—	—	—	—
<i>Noturus miurus</i>	X	X	—	—	—	—	—	X	—	—	X	—	—	—
<i>Percopsis omiscomaycus</i>	—	X	X	—	—	—	—	X	—	—	—	—	—	—
<i>Labidesthes sicculus</i>	—	—	—	—	—	—	—	X	—	—	—	—	—	—
<i>Ambloplites rupestris</i>	—	—	—	—	—	—	—	—	—	—	X	—	—	—
<i>Lepomis cyanellus</i>	X	—	—	—	—	—	X	—	—	—	X	—	—	—
<i>Lepomis macrochirus</i>	X	X	—	X	—	—	X	—	—	—	—	—	—	—
<i>Lepomis megalotis</i>	—	—	X	—	X	—	—	—	—	—	—	—	—	—
<i>Micropterus dolomieu</i>	—	—	—	—	—	—	—	—	—	—	X	—	—	—
<i>Micropterus punctulatus</i>	—	X	—	—	—	—	—	X	—	—	X	—	—	—
<i>Ammocrypta pellucida</i>	—	—	—	—	—	—	—	X	—	—	—	—	—	—
<i>Etheostoma blennioides</i>	X	—	—	X	—	—	X	X	—	—	X	—	—	—
<i>Etheostoma caeruleum</i>	—	—	—	—	—	—	X	—	—	—	X	X	X	X
<i>Etheostoma flabellare</i>	—	—	—	—	—	—	—	—	—	—	X	—	—	—
<i>Etheostoma nigrum</i>	X	X	X	X	—	—	X	X	—	—	X	X	—	X
<i>Etheostoma zonale</i>	—	—	—	—	—	—	X	X	—	—	X	—	—	—
<i>Percina caprodes</i>	X	X	—	—	—	—	—	X	—	—	X	X	—	X
<i>Percina maculata</i>	—	X	X	X	X	—	—	—	—	—	X	—	—	—

\*Identification and sequence of species according to Bailey *et al* (1970).

\*\*Collection Sites. P=Pine Creek, Sy=Symmes Creek, A=Aaron Creek, SF=Sand Fork, IG=Indian Guyan Creek, R=Raccoon Creek, H=Hocking River, Fe=Federal Creek, Su=Sunday Creek, M=Monday Creek, LM=L. Muskingum River, Fi=Fifteenmile Creek, CF=Clear Fork, Cr=Cranenest Fork.

lected from the 25 sites (see Table 1). This should be considered only a partial list because of selectivity in the choice of habitats sampled and in the collecting gear used. Five sand darters were collected on 29 October 1977 from a pool in lower Federal Creek in Athens County, Rome Township, Section 16 (Ohio Geol. Survey, Stewart Quadrangle, 1961). These had total lengths of 49, 58, 60, 64, and 64 mm and were active, hardy, and evidently healthy.

The Federal Creek basin consisted primarily of pastureland and forest, with some strip mining activity in its extreme northern area and only a few small towns. The pool in which the sand darters were found was located 2.2 km upstream from the mouth of Federal Creek, which empties into the Hocking River. The pool was most easily approached from a gravel road running parallel to the creek and was located precisely 30.5 m downstream of telephone pole number 791-4. The water was very clear, so that the sandy bottom was visible everywhere, and the water temperature on the day of collection was 11.5 °C. Sand darters were found in areas of the pool where the water was almost static and the sand 100-500 cm deep over the shale bedrock. They did not occur where there was a noticeable flow of water or on bottom areas where the sand was not deep, or was mixed with gravel and shale particles. In the latter type of habitat the brindled madtom (*Noturus miurus*) was common.

Although all major streams in Wayne National Forest had areas of sandy bottom, only Federal Creek, Symmes Creek, Pine Creek, and the Hocking River below Athens had extensive sandy areas relatively free of silt and uncontaminated by acid mine drainage. In the Little Muskingum River drainage, higher stream gradients largely precluded the deposition of extensive beds of sand. Pine Creek, Symmes Creek and Indian Guyan Creek were generally free of silt north of the latitude of Dean State Forest, but probing with a long pole in the lower, more southern reaches of these streams revealed extensive sandy areas underneath a deep layer of silt. Although the sand darter was found only in Federal Creek, the relatively clear waters and sandy

bottoms of Symmes Creek, Pine Creek, and the Hocking River below Athens have favorable habitats for the species. The preservation of the sand darter and the integrity of the clean sandy-bottom streams it requires depends primarily on basin-wide control of siltation and acid mine drainage.

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