

DISTRIBUTION AND STATUS OF THE ROSYSIDE DACE, *CLINOSTOMUS FUNDULOIDES*, GIRARD, (CYPRINIDAE) IN SOUTHERN OHIO¹

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ABSTRACT. Surveys to determine the current status and distribution of the rosyside dace in southern Ohio were conducted between 1980 and 1982. Results of these surveys indicate that the rosyside dace is more common than previously believed in this area. Populations were recorded from 40 streams in Pike, Adams, Scioto and Jackson counties. The largest populations were found in headwater tributaries of the Little Scioto River system, and Sunfish Creek and Scioto Brush Creek watersheds. Isolated populations were found in several of the smaller tributary streams of the Scioto and Ohio rivers. Factors limiting populations of this species in southern Ohio streams appear to be primarily related to increased water turbidities resulting from: (1) intensive agriculture of row crops; (2) indiscriminate timbering of watersheds, and (3) highway construction projects. Other factors affecting habitat quality are terracing to create home sites and the bulldozing of gravel from stream beds.

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INTRODUCTION

The rosyside dace (*Clinostomus funduloides*), a species of headwater streams, is generally distributed in the upland Atlantic slope drainages from Chesapeake Bay south to the upper Savannah River in Georgia. West of the Appalachian divide, populations are distributed in the headwaters of Ohio River tributary streams in southern Ohio, West Virginia and eastern Kentucky, and in the Tennessee and Cumberland River drainages in Kentucky, Tennessee, and Alabama (Lee et al. 1980). For an elaboration of subspecies distribution see Deubler (1955). The first Ohio records of *C. funduloides* were collected from Churn Creek, a tributary of the South Fork of Scioto Brush Creek in Adams County by M. B. Trautman in 1929 (OSUM #11062). Between 1929 and 1945, additional populations of *C. funduloides* were found in headwater streams of the Sunfish Creek watershed in western Pike Co. and the Scioto Brush Creek watershed in adjacent northeastern Adams Co. Isolated popu-

lations were also found in other tributaries of the South Fork of Scioto Brush Creek in southeastern Adams Co. and in the Little Scioto River in western Jackson Co. (table 1) (Trautman 1981).

There have been few reports of *C. funduloides* from southern Ohio streams in recent years. There are only five collections in the Ohio State University Museum of Zoology (OSUM) after 1945; a 1963 collection from the Left Fork of Sunfish Creek in Pike Co. and four collections between 1953 and 1964 from Chenoweth Fork of Sunfish Creek, also in Pike Co. (table 1). Two individuals, Dr. Andrew White of John Carroll University and P. J. Pfister of the Kincaid Fish Hatchery in Pike Co., reported collecting *C. funduloides* from the Sunfish Creek watershed in the 1970s (pers. comm.). Trautman (1981) reported on the possible extirpation of several populations and the discovery of a new one in a tributary of the Ohio River (apparently Upper Twin Creek) in Scioto Co. Smith et al. (1973) considered this species to be endangered in Ohio due to its restricted range in Ohio and the reported decline of many of the known populations due to in-

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TABLE 1
Known populations of the rosyside dace (Clinostomus funduloides) prior to 1980.

Stream	County	Date last collected	Source of Information
Scioto River tributaries			
Sunfish Creek			
L. Fk. Sunfish Creek	Pike	1963	OSUM
Chenoweth Fork	Pike	1964	OSUM
Rt. Fk. Morgan's Fork	Pike	1939	OSUM
L. Fk. Morgan's Fork	Pike	1976	A. White
Morgan's Fork	Pike	1939	OSUM
Lapparell Creek	Pike	1939	OSUM
Scioto Brush Creek	Adams	1930	OSUM
S. Fk. Scioto Brush Creek	Adams	<1950	Trautman (1981)
Churn Creek	Adams	1945	OSUM
Ohio River tributaries			
Little Scioto River	Jackson	1930	OSUM
Upper Twin Creek	Scioto	>1954	Trautman (1981)

creased stream turbidities and resultant habitat destruction. In 1976, based on the available information, *C. funduloides* was listed as a state endangered species (ODNR 1976).

METHODS AND MATERIALS

Between 1980 and 1982, surveys were conducted by the authors in an effort to determine the current status of *C. funduloides* in southern Ohio. Initial survey work centered on those streams where *C. funduloides* was known to have occurred in the past. Surveys were then expanded to include other tributary streams in those same drainage systems and further expanded to adjacent watersheds in an effort to locate previously unknown populations of the rosyside dace.

Collections were made using either a 1.2 × 1.8-m seine with a .3-cm mesh, a 1.2 × 2.4-m seine with .3-cm mesh or a 4.8-m bag seine with a .6-cm mesh depending upon stream widths and depths. Voucher specimens were retained from all locations representing new populations or reconfirming historic populations; all other specimens collected at a site were released. Specimens were fixed in 10% formalin and deposited at the Ohio State University Museum of Zoology (OSUM) where they were transferred to 70% ethanol.

RESULTS AND DISCUSSION

Results of these surveys as listed in table 2 and fig. 1 indicate that the rosyside dace is more common than previously believed in southern Ohio streams and should be downgraded from its current endangered status in Ohio to a threatened or special concern category. These popu-

lations warrant periodical monitoring since they can be adversely affected by changes in land use practices. Individuals were collected from 40 streams in Pike, Adams, Scioto and Jackson counties. Healthy populations were located in headwater streams of the Little Scioto River system in Jackson, Pike and Scioto counties; the Scioto Brush Creek watershed in Scioto and Adams counties; and the Sunfish Creek watershed in Pike Co. Other populations were also found in Camp Creek, a Scioto River tributary in Pike Co. and in several Ohio River tributary streams (Pond Run, Long Lick Run, and Upper and Lower Twin creeks) in Adams and Scioto counties. Results of surveys in watersheds adjacent to those where *C. funduloides* was found were negative. These include Ohio River tributaries such as: Eagle and Big Three-Mile creeks in Brown Co.; Ohio Brush Creek in Adams Co.; Turkey Creek in Scioto Co.; and Symmes Creek and Pine Creek in Scioto and Lawrence counties, as well as some of the smaller tributary streams in Brown (Fishing Gut Creek), Adams (Russel Fork Island, Isaacs, and Little Three-Mile creeks), Scioto (Stoney, Carey's and Slab runs), and Lawrence (Storms Creek) counties. Surveys in other Scioto River tributary streams in Scioto (Pond Creek), Pike (Big Beaver and Bear creeks), and Ross (Crooked and Stoney

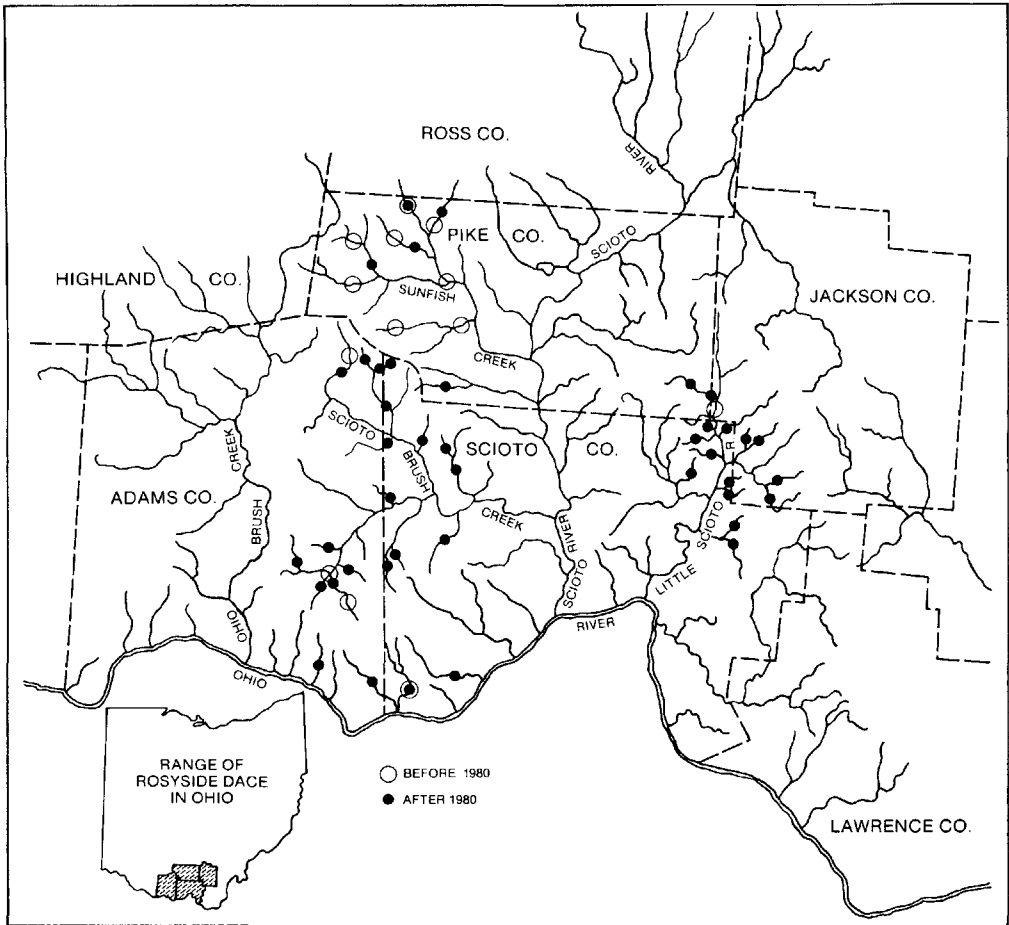


FIGURE 1. Collection localities of *C. funduloides* in Ohio streams. Open circles represent collections made prior to 1980. Black dots represent collections made after 1980.

counties also produced negative results.

During this survey, *C. funduloides* was almost always taken only in those stream sections where the water was perfectly clear and the bottoms free from silty materials. In several instances, however, (Scioto Brush, Skull, and Frederick creeks), individuals were seined from stream sections having murky waters with silt deposits on the bottom. All populations were found at mean elevation between 151 and 250 m above sea level. Stream bottoms consisted of clean gravel, boulders, and bedrock composed of limestone, dolomite, sandstone, and shale. Rosysides preferred the deeper pools when present, where they

could be observed schooling at mid-level depths. Where pools were lacking, they could also be found in the deeper waters of riffles and runs but generally in smaller numbers (on the order of 0-10 individuals per seine haul). The greatest numbers (see table 2) were found in those tributary streams having a permanent flow and/or well-developed pools. Lesser numbers were generally found in the larger streams which were more subject to increased turbidity, such as Scioto Brush Creek, and in those streams which tended to become intermittent during the year and lack good pool development.

Common associates of *C. funduloides* in these streams were most often the black-

TABLE 2
Collection localities of the rosyide dace (Clinostomus funduloides) in Southern Ohio, 1980-1982.

Stream	Location	No. recorded	Date	Status*
Scioto River Tributaries				
Sunfish Creek	Benton Twp., Pike Co.	6+	1 Oct. '80	R
Rt. Fk. of Morgans Fork	Benton Twp., Pike Co.	100+	1 Oct. '80	A
L. Fk. of Morgans Fork	Benton Twp., Pike Co.	5	1 Oct. '80	R
Morgans Fork above Pike Lake	Mifflin Twp., Pike Co.	3	18 Oct. '80	R
Kincaid Creek				
Camp Creek	Camp Creek Twp., Pike Co.	5	23 Aug. '82	R
L. Fk. of Camp Creek				
Scioto Brush Creek				
Fen Hollow (McCullough Creek)	Union Twp., Scioto Co.	10+	1 July '81	C
McCullough Creek	Union Twp., Scioto Co.	45+	23 Aug. '82	A
Bear Creek	Union Twp., Scioto Co.	2	23 Aug. '82	R
Dry Run at Youngs	Rarden & Brush Creek Twp., Scioto Co.	6+	1 July '81	C
Rarden Creek	Rarden Twp., Scioto Co.	25+	1 July '81	C
Bull Run of Rarden Creek	Franklin Twp., Adams Co. Rarden Twp., Scioto Co.	20+	1 July '81	C
Straight Fork of Rarden Creek	Franklin Twp., Adams Co.	10+	1 July '81	C
Dunlap Creek	Rarden Twp., Scioto Co.	10+	30 Aug. '82	C
Scioto Brush Creek	Franklin Twp., Adams Co.	1	28 Oct. '80	R
Rocky Fork Creek	Franklin Twp., Adams Co.	3	23 Aug. '82	R
Spruce Run	Brush Creek Twp., Scioto Co.	6	23 Aug. '82	U
Beech Fork	Brush Creek Twp., Scioto Co.	10	23 Aug. '82	C
Cassel Run	Jefferson Twp., Adams Co.	9	1 July '81	C
Winterstein Run	Jefferson Twp., Adams Co.	2	30 Aug. '82	R
Churn Creek	Jefferson Twp., Adams Co.	2	1 July '81	R
Blue Creek	Brush Creek Twp., Adams Co.	20+	31 Aug. '82	C
Randall Run	Brush Creek Twp., Adams Co.	20+	30 Aug. '82	C
Ohio River Tributaries				
Pond Run	Nile Twp., Scioto Co.	4	29 Oct. '80	R
Upper Twin Creek	Nile Twp., Scioto Co.	15+	29 Oct. '80	U-C
Lower Twin Creek	Green Twp., Adams Co.	15+	29 Oct. '80	U-C
Long Lick Run	Green Twp., Adams Co.	10+	29 Oct. '80	U
Little Scioto River				
Frederick Creek	Bloom Twp., Scioto Co.	1	18 Aug. '82	R

Skull Creek	Bloom Twp, Scioto Co.	2	18 Aug. '82	R
Yankee Run	Madison Twp, Scioto Co.	20+	18 Aug. '82	C
Blue Ash Run	Madison Twp, Scioto Co.	10+	18 Aug. '82	U-C
Bear Run	Madison Twp, Scioto Co.	7	18 Aug. '82	U
Jackson Furnace Creek	Hamilton Twp, Jackson Co.	16	26 Aug. '82	C
Holland Fork	Hamilton Twp, Jackson Co.	30+	24 Sept. '81	C
Bucklick Creek	Hamilton Twp, Jackson Co.	15+	4 Sept. '81	C
Little Bucklick Creek	Hamilton Twp, Jackson Co.	6	4 Sept. '81	U
Buckhorn Creek	Madison Twp, Scioto Co.	100+	4 Sept. '81	A
Sugarcamp Creek	Madison Twp, Scioto Co.	1	30 June '81	R
Millstone Run	Madison Twp, Scioto Co.	20+	4 Sept. '81	C
Glade Run	Madison Twp, Scioto Co.	10+	30 June '81	C
McDowell Creek	Scioto Twp, Jackson Co. Marion Twp, Pike Co.	50+	30 June '81	A

*A = Abundant, C = Common, U = Uncommon, R = Rare

nose dace (*Rhinichthys atratulus*), red belly dace (*Chrosomus erythrogaster*), creek chub (*Semotilus atromaculatus*), and the stone-roller (*Campostoma anomalum*). Darters such as the fantail darter (*Etheostoma flabellare*), johnny darter (*Etheostoma nigrum*), orangethroat darter (*Etheostoma spectabile*), rainbow darter (*Etheostoma caeruleum*), and the blackside darter (*Percina maculata*) were taken in adjacent riffle areas or in the pools themselves. A noteworthy observation was the failure to collect the bigeye shiner (*Notropis boops*), another Ohio endangered species, during these surveys. Trautman (1981) described the bigeye shiner as a close associate of the rosyside dace in these clear headwater streams. There are records of the bigeye shiner in the OSU Museum of Zoology as recently as 1964 from several of the streams sampled in this survey. In spite of attempts by the authors to collect them none were taken, and it is our conclusion that the bigeye shiner is either very rare or absent from those streams sampled.

A primary factor limiting populations of the rosyside dace in southern Ohio streams appears to be one of increased water turbidities. From our observations, it was found that this species seems to be intolerant of turbid waters and silty bottoms. With the exceptions noted earlier, *C. funduloides* was always taken in those stream sections having clear water and clean stream bottoms. Practices which tend to increase siltation rates in southern Ohio streams, such as the farming of adjacent bottomlands, the logging and clearing of adjacent hillsides, and highway construction, are all potential hazards to rosyside dace populations. The development of narrow stream terraces for home sites has also adversely affected stream habitats in some cases through canopy removal and increased runoff associated with these sites. Another factor affecting habitat quality is the bulldozing of gravel in sections of some streams which eliminates the pool habitats preferred by this species, and frequently resulted in that section of the stream drying up during periods of low rainfall. If

these factors affecting habitat availability can be regulated, then the rosieside dace will remain a viable constituent of Ohio's fauna.

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