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INTRODUCTION

Morganfork Creek is a small tributary of the Homochitto River, which drains a substantial portion of southwestern Mississippi (ca. 3108 km^2, Newcome and Thomson, 1970). Ichthyological surveys of the Homochitto River drainage indicate a relatively diverse fish assemblage comprising approximately 105 species (Cook, 1959; Baker, 1984; Ebert et al., 1985). Cook (1959) and Baker (1984) provided information concerning species distributions within portions of the main channel of the Homochitto River. Ebert et al. (1985) incorporated records of fishes collected from tributaries to compile a more comprehensive list of species within the drainage. However, no quantitative data on fish assemblages within the drainage have been published. The purpose of this paper is to provide a species list and a brief description of fish assemblage composition within a section of Morganfork Creek; results are based on collections made over a six-year period (1989-1995).

STUDY SITE AND METHODS

Morganfork Creek, a third-order stream, originates in southern Jefferson County, Mississippi, flows southward into Franklin County, and eventually drains into Middlefork Creek, near Meadville. I sampled fishes from a ca. 600 m section of stream 6.5 km north of Hwy 84 near Kirby. Habitat within the site was comprised of both erosional (riffle and run) and depositional (glide/transitional and pool) areas, although deep pools were uncommon. High flow events often resulted in the formation of large sand/gravel dunes and shifting of instream habitat. However, relative abundances of habitat types was generally consistent throughout the study period (M. Farr, *pers. obs.*). Possible sources of instream cover consisted of woody debris, root wads, undercut banks, and associated debris piles. Similar to many other streams within the drainage (Hartfield, 1993), Morganfork Creek has a wide channel (ca. 40 m) of sand and gravel, but wetted width at normal flow ranged from ca. 3-8 m. At normal flow, stream depth typically ranged from ca. 0.05-1.2 m.

Twenty-three collections of fishes were made from April 1989-October 1991 and August 1994-March 1995. All collections were made during normal flow periods (at least four days following the most recent rain event). All specimens were collected with a 3 m x 4.8 mm mesh seine, preserved in 10% formaldehyde, and later stored in 50% isopropyl alcohol. Voucher specimens for each species were deposited in the ichthyological collection at Northeast Louisiana University.

RESULTS AND DISCUSSION

A total of 8203 specimens representing 45 species in nine families was collected from Morganfork Creek (Table 1). Number of species present in individual collections ranged from 6-32. Erosional habitats and more depositional glide habitats were abundant, but pools were usually limited in number and size. Thus, species generally associated with pool habitats (sunfishes, poeciliids, atherinids) were collected less frequently than species typically associated with areas of higher flow (cyprinids and percids) (Tables 1 & 2).

Cyprinids were the most numerically dominant group in the assemblage (Table 2). Representatives of 14 cyprinid species comprised 82.9% of all specimens collected. Although ten species of darters were collected, they represented only 3.3% of all sampled individuals. Conversely, only three species of topminnows were collected, but they comprised 11.3% of all fishes collected. All other groups comprised only 2.5% of sampled fishes.

Overall relative abundances of species indicated that *Cyprinella camura*, the bluntface shiner, was the most common species (42.90%) in the Morganfork Creek assemblage (Table 1). *Cyprinella venusta* (blacktail shiner 14.66%), *Notropis longirostris* (longnose shiner 14.26%), and *Fundulus catenatus* (northern studfish 10.82%) were the only other species with relative abundances greater than 3.0%. Bluntface shiners were commonly collected in erosional habitats, whereas blacktail shiners, longnose shiners, and northern studfish were more generally distributed among habitat types. Warren et al. (1994) indicated that these same four species, along with *Hybognathus nuchalis* (Mississippi silvery minnow), were the most abundant taxa at low-order sites in the Buffalo River, another tributary of the Mississippi River that drains a portion of southwestern Mississippi.

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Table 1. Species, number of specimens (No.), overall relative abundance (ORA), and percent occurrence in all samples (PO) of fishes collected from Morganfork Creek.

Family Species	No.	ORA	PO
Clupeidae			
Dorosoma cepedianum	2	0.02	4.3
Cyprinidae			
Cyprinella camura	3511	42.90	100.0
Cyprinella lutrensis	108	1.32	60.9
Cyprinella venusta	1200	14.66	100.0
Hybognathus nuchalis	217	2.65	43.5
Hybopsis wincheli	12	0.15	17.4
Luxilus chrysocephalus	243	2.97	73.9
Lythrurus fumeus	1	0.01	4.3
Lythrurus umbratilis	17	0.21	17.4
Nocomis leptocephalus	187	2.28	73.9
Notemigonus crysoleucas	3	0.04	4.3
Notropis longirostris	1185	14.45	100.0
Pimephales notatus	81	0.99	56.5
Pimephales vigilax	35	0.43	34.8
Semotilus atromaculatus	4	0.05	13.0
Catostomidae			
Erimyzon oblongus	5	0.06	8.7
Hypentelium nigricans	13	0.16	26.1
Moxostoma poecilurum	2	0.02	8.7
Ictaluridae			
Ameiurus natalis	6	0.07	8.7
Ictalurus punctatus	2	0.02	4.3
Noturus hildebrandi	2	0.02	8.7
Noturus miurus	12	0.15	21.7
Noturus nocturnus	2	0.02	8.7
Noturus phaeus	1	0.01	4.3
Cyprinodontidae			
Fundulus catenatus	886	10.82	100.0
Fundulus notatus	23	0.28	30.4
Fundulus olivaceus	15	0.18	26.1
Poeciliidae			
Gambusia affinis	14	0.17	13.0
Atherinidae			
Labidesthes sicculus	24	0.29	30.4
Centrarchidae			
Lepomis cyanellus	2	0.02	8.7
Lepomis macrochirus	71	0.87	52.2
Lepomis megalotis	39	0.48	39.1
Lepomis microlophus	1	0.01	4.3
Micropterus punctulatus	4	0.05	13.0
Micropterus salmoides	5	0.06	8.7
Percidae			
Ammocrypta beani	1	0.01	4.3
Etheostoma asprigene	1	0.01	4.3
Etheostoma caeruleum	93	1.14	69.6
Etheostoma chlorosomum	1	0.01	4.3
Etheostoma lynceum	13	0.16	30.4
Etheostoma parvipinne	5	0.06	4.3
Etheostoma swaini	5	0.06	4.3
Etheostoma whipplei	50	0.61	52.2
Percina sciera	52	0.64	47.8
Percina vigil	47	0.57	30.4

Table 2. Number of species (No. spp.), number of individuals (No. ind.), and overall relative abundance (ORA) of common families collected from Morganfork Creek.

	No. spp.	No. ind.	ORA
Cyprinids	14	6804	82.9
Topminnows	3	924	11.3
Darters	10	268	3.3
Sunfishes	6	122	1.5
Catfishes	6	25	0.3
Suckers	3	20	0.2
Others	3	40	0.5
Total	45	8203	

Bluntface shiners, blacktail shiners, longnose shiners, and northern studfish were the only taxa present in all 23 Morganfork Creek collections (100 percent occurrence; Table 1). Among the other taxa, percent occurrence exceeded 30% for 15 species and 40% for nine species. Despite the relatively large number of species collected from Morganfork Creek, 11 species were collected only once, and seven species were only present in two collections. These results are probably reflective of temporal variability in both collection effort and the distributional patterns of less common species.

The most common sucker in Morganfork Creek was *Hypentelium nigricans* (northern hogsucker 0.16%) (Table 1). Although most northern hogsuckers were collected in erosional habitats, a large school of approximately 30-40 individuals was observed during summer 1993 foraging for over an hour along the bottom of a shallow pool. *Noturus miurus* (brindled madtom 0.15%) was the most abundant madtom; like other

madtom species, it was usually associated with submerged banks and debris piles. *Lepomis macrochirus* (bluegill 0.87%) and *L. megalotis* (longear sunfish 0.48%) were primarily collected in pools or eddies behind submerged debris. *Etheostoma caeruleum* (rainbow darter 1.14%), *E. whipplei* (redfin darter 0.61%), *Percina sciera* (dusky darter 0.64%), and *P. vigil* (saddleback darter 0.57%) were the most common percids. All four species were collected in erosional habitats, but only rainbow darters were consistently taken over open gravel. Other percids were often associated with small debris piles.

Morganfork Creek has a rich fish assemblage, although many species were only collected once or twice from 1989-1994. Other authors have addressed the complex distributional patterns of fishes in major drainages of southwestern Mississippi and the Florida Parishes of Louisiana (e.g. Guillory and Conner, 1973; Suttkus and Clemmer, 1977; Guillory, 1978; Bart and Cashner, 1980; Conner and Suttkus, 1986). Suttkus and Clemmer (1977) and Hartfield (1993) discussed the potential negative effects of habitat degredation within regional tributaries of the Mississippi River. There are many potential sources of stream degredation within the Homochitto River drainage (e.g. timber harvesting, agricultural practices, gravel mining, road construction, recreational and residential development, drilling and maintenance of oil wells, etc.). For this reason, more quantitative descriptions of local fish assemblages are needed. Data from such studies might prove valuable if evaluating or monitoring distributions of ecologically sensitive species becomes necessary in the future.

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