

Fishes Reported from Waters of the Hoosier National Forest

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Introduction

McComish and Brown (4) reviewed all available literature prior to 1980 on scientific fish collections in waters of the Hoosier National Forest area. A comprehensive species list was produced with appropriate life history notes and distribution maps for fishes. The review provides valuable insight to the species of fishes associated with waters of the Forest and will allow future comparative evaluation of the fish fauna with relative ease.

Study Area

The Hoosier National Forest is located in the Crawford and Norman uplands of nine southern Indiana counties. The southern forest area extends northward from the Ohio River through portions of Perry, Crawford, Orange, eastern Dubois, eastern Martin, and western Lawrence counties. A separate, smaller northern area includes northeastern Lawrence, northwestern Jackson, southwestern Brown, and southeastern Monroe counties. The northern area is bordered on the west by the Monroe Reservoir and on the north by Brown County State Park.

Streams associated with the Forest are part of the Mississippi system, draining into the Wabash River Basin in the northern and central areas and the Ohio River Basin in the southern area. Four major streams are included in the Wabash River Basin: Salt Creek, East Fork White River, Lost River, and Patoka River. The Ohio River drainage includes two major streams: Middle Fork Anderson River and Little Blue River.

A wide variety of stream habitats in the Forest allows for the considerable diversity of fishes reported. This stream variety ranges from small, clear headwaters to deep, mature, and turbid rivers. Collections are also reported from semi-lentic stream impoundments ranging from small to large reservoirs.

Collection Sites and Species at Sites

A total of 87 collection sites were identified both within and nearby the exterior boundaries of the Forest (1), including: 27 from the East Fork of the White River, 11 from the Lost River (including Springs Valley Lake), 11 from the Patoka River system (prior to the impoundment of Patoka Reservoir), 15 from the Middle Fork of the Anderson River (including Indian Lake, Lake Celina, Tipsaw Lake, and Saddle Lake), 14 from the Little Blue River (including English Reservoir), and one each from Ohio River embayments at Deer Creek and Oil Creek.

A total of 104 species were reported from these collection sites. The number of species from individual sites were as follows by system: 1 to 34 in Salt Creek (including Monroe Reservoir), 1 to 18 in the East Fork of the White River, 6 to 27 in the Lost River, 4 to 18 in the Patoka River, 8 to 21 in the Middle Fork Anderson River, 4 to 21 in the Little Blue River and 13 and 11 respectively, in Ohio River embayments at Deer Creek and Oil Creek. In terms of major stream systems, Salt Creek had the greatest number of species while the East Fork White collections yielded the fewest.

Fish Taxa

In addition to 104 species actually collected, 4 species not collected in stream surveys but known from waters of the Forest (clarified later) were included in the total list of 108 species (1). This total fish fauna list represents 48 genera in 21 families of 13 orders (Table 1). The five largest families with numbers of species included: Cyprinidae (minnows) - 29 species, Percidae (perches) - 16 species, Centrarchidae (sunfishes) - 14 species, Catostomidae (suckers) - 13 species, and Ictaluridae (catfishes) - 10 species. A total of 82 species, 76 percent of all 108 species, were represented in these five families. The remaining 26 species represented 16 families having 1 to 4 species.

Occurrence by Species

The fishes were grouped on the basis of frequency of occurrence at sites in the

TABLE 1. *Numbers of orders, families, genera, and species of fishes known from waters of the Hoosier National Forest area (4).*

Order/Family	Genus (Genera)	Species
Petromyzontiformes		
Petromyzontidae (lampreys)	2	4
Acipenseriformes		
Acipenseridae (sturgeons)	1	1
Semionotiformes		
Lepisosteidae (gars)	1	2
Amiiformes		
Amiidae (bowfins)	1	1
Anguilliformes		
Anguillidae (eels)	1	1
Clupeiformes		
Clupeidae (herrings)	2	3
Osteoglossiformes		
Hiodontidae (mooneyes)	1	1
Salmoniformes		
Esocidae (pikes)	1	3
Cypriniformes		
Cyprinidae (minnows)	11	29
Catostomidae (suckers)	7	13
Siluriformes		
Ictaluridae (catfishes)	3	10
Percopsiformes		
Amblyopsidae (cavefishes)	1	1
Aphredoderidae (pirate perches)	1	1
Percopsidae (trout-perches)	1	1
Atheriniformes		
Cyprinodontidae (killifishes)	1	1
Atherinidae (silversides)	1	1
Perciformes		
Cottidae (sculpins)	1	2
Percichthyidae (temperate basses)	1	2
Centrarchidae (sunfishes)	5	14
Percidae (perches)	4	16
Sciaenidae (drums)	1	1
Totals	48	108

Forest area (Table 2). Frequency categories included: very common (> 40 sites), common (11-40 sites), uncommon (2-10 sites), and rare (1 site).

Five species were very common and generally distributed among collection sites: *Lepomis megalotis* (longear sunfish) - 68 sites, *Lepomis macrochirus* (bluegill) - 53 sites, *Micropterus salmoides* (largemouth bass) - 50 sites, *Pimephales notatus* (bluntnose minnow) - 45 sites, and *Lepomis cyanellus* (green sunfish) - 44 sites.

There were 38 common species. Major representatives (>20 sites) of this group included: *Campostoma anomalum* (stoneroller) - 34 sites, *Notropis cornutus* (common shiner) - 32 sites, *Lepomis gulosus* (warmouth) - 31 sites, *Catostomus com-*

TABLE 2. Fishes reported (4) from Hoosier National Forest waters, number of collection sites, and frequency category (with sites in parentheses).

Family/Scientific Name	Common Name	Total Sites	Frequency Category/(No. Sites)			
			Very Common (> 40)	Common (11-40)	Uncommon (2-10)	Rare (1)
Petromyzontidae						
<i>Ichthyomyzon bdellium</i>	Ohio lamprey	1				X
<i>Ichthyomyzon castaneus</i>	Chestnut lamprey	3			X	
<i>Ichthyomyzon unicuspis</i>	Silver lamprey	2			X	
<i>Lampetra aepyptera</i>	Least brook lamprey	1				X
Acipenseridae						
<i>Scaphirhynchus platyrhynchus</i>	Shovelnose sturgeon	1				X
Lepisosteidae						
<i>Lepisosteus osseus</i>	Longnose gar	4			X	
<i>Lepisosteus platostomus</i>	Shortnose gar	2			X	
Amiidae						
<i>Amia calva</i>	Bowfin	3			X	
Anguillidae						
<i>Anguilla rostrata</i>	American eel	1			X	
Clupeidae						
<i>Alosa chrysochloris</i>	Skipjack herring	9			X	
<i>Dorosoma cepedianum</i>	Gizzard shad	24		X		
<i>Dorosoma petenense</i>	Threadfin shad	1				X
Hiodontidae						
<i>Hiodon tergisus</i>	Mooneye	1				X
Esocidae¹						
<i>Esox americanus vermiculatus</i>	Grass pickerel	27		X		
<i>Esox lucius</i>	Northern pike	2				X
Cyprinidae						
<i>Cyprinus carpio</i>	Carp	24		X		
<i>Phoxinus erythrogaster</i>	Southern redbelly dace	9			X	
<i>Hybopsis amblops</i>	Bigeye chub	1				X
<i>Hybopsis storeriana</i>	Silver chub	1				X
<i>Hybopsis x-punctata</i>	Gravel chub	1				X
<i>Nocomis biguttatus</i>	Hornyhead chub	2			X	
<i>Semotilus atromaculatus</i>	Creek chub	28		X		
<i>Ericymba bucatia</i>	Silverjaw minnow	12		X		
<i>Phenacobius mirabilis</i>	Suckermouth minnow	2			X	

TABLE 2. *Continued*

Family/Scientific Name	Common Name	Total Sites	Frequency Category/(No. Sites)			
			Very Common (> 40)	Common (11-40)	Uncommon (2-10)	Rare (1)
<i>Pimephales notatus</i>	Bluntnose minnow	45	X			
<i>Pimephales promelas</i>	Fathead minnow	9			X	
<i>Pimephales vigilax</i>	Bullhead minnow	9			X	
<i>Notemigonus crysoleucas</i>	Golden shiner	16		X		
<i>Notropis amnis</i>	Pallid shiner	1				X
<i>Notropis ardens</i>	Rosefin shiner	3			X	
<i>Notropis atherinoides</i>	Emerald shiner	15		X		
<i>Notropis boops</i>	Bigeye shiner	16		X		
<i>Notropis chalybaeus</i>	Ironcolor shiner	1				X
<i>Notropis chrysocephalus</i>	Striped shiner	13		X		
<i>Notropis cornutus</i>	Common shiner	32		X		
<i>Notropis emiliae</i>	Pugnose minnow	4			X	
<i>Notropis photogenis</i>	Silver shiner	3			X	
<i>Notropis rubellus</i>	Rosyface shiner	2			X	
<i>Notropis shumardi</i>	Silverband shiner	1				X
<i>Notropis spilopterus</i>	Spotfin shiner	9			X	
<i>Notropis umbratilis</i>	Redfin shiner	23		X		
<i>Notropis volucellus</i>	Mimic shiner	5			X	
<i>Notropis whipplei</i>	Steelcolor shiner	15		X		
<i>Camptostoma anomalum</i>	Stoneroller	34		X		
Catostomidae						
<i>Ictiobus bubalus</i>	Smallmouth buffalo	8			X	
<i>Ictiobus cyprinellus</i>	Bigmouth buffalo	6			X	
<i>Carpiodes carpio</i>	River carpsucker	8			X	
<i>Carpiodes cyprinus</i>	Quillback	8			X	
<i>Carpiodes velifer</i>	Highfin carpsucker	1				X
<i>Erimyzon oblongus</i>	Creek chubsucker	14		X		
<i>Moxostoma anisurum</i>	Silver redhorse	1				X
<i>Moxostoma duquesnei</i>	Black redhorse	8			X	
<i>Moxostoma erythrurum</i>	Golden redhorse	23		X		
<i>Moxostoma macrolepidotum</i>	Shorthead redhorse	2			X	
<i>Catostomus commersoni</i>	White sucker	30		X		
<i>Hypentelium nigricans</i>	Northern hog sucker	15		X		
<i>Minytrema melanops</i>	Spotted sucker	25		X		
Ictaluridae						
<i>Ictalurus catus</i>	White catfish	1				X
<i>Ictalurus melas</i>	Black bullhead	10			X	
<i>Ictalurus natalis</i>	Yellow bullhead	24		X		
<i>Ictalurus nebulosus</i>	Brown bullhead	7			X	
<i>Ictalurus punctatus</i>	Channel catfish	12		X		
<i>Pygodictis olivaris</i>	Flathead catfish	6			X	
<i>Noturus eleutherus</i>	Mountain madtom	1				X
<i>Noturus flavus</i>	Stonecat	6			X	
<i>Noturus gyrinus</i>	Tadpole madtom	8			X	
<i>Noturus miurus</i>	Brindled madtom	4			X	
Amblyopsidae²						
Aphredoderidae						
<i>Aphredoderus sayanus</i>	Pirate perch	20		X		
Percopsidae						
<i>Percopsis omiscomaycus</i>	Trout-perch	1				X
Cyprinodontidae						
<i>Fundulus notatus</i>	Blackstripe topminnow	20		X		

TABLE 2. *Continued*

Family/Scientific Name	Common Name	Total Sites	Frequency Category/(No. Sites)			
			Very Common (>40)	Common (11-40)	Uncommon (2-10)	Rare (1)
Atherinidae						
<i>Labidesthes sicculus</i>	Brook silverside	14		X		
Cottidae						
<i>Cottus bairdi</i>	Mottled sculpin	4			X	
<i>Cottus caroliniae</i>	Banded sculpin	8			X	
Percichthyidae³						
<i>Morone mississippiensis</i>	Yellow bass	4			X	
Centrarchidae						
<i>Micropterus dolomieu</i>	Smallmouth bass	10			X	
<i>Micropterus punctulatus</i>	Spotted bass	21		X		
<i>Micropterus salmoides</i>	Largemouth bass	50	X			
<i>Ambloplites rupestris</i>	Rockbass	15		X		
<i>Centrarchus macropterus</i>	Flier	1				X
<i>Lepomis cyanellus</i>	Green sunfish	44	X			
<i>Lepomis gibbosus</i>	Pumpkinseed	1				X
<i>Lepomis gulosus</i>	Warmouth	31		X		
<i>Lepomis humilis</i>	Orangespotted sunfish	13		X		
<i>Lepomis macrochirus</i>	Bluegill	53	X			
<i>Lepomis megalotis</i>	Longear sunfish	68	X			
<i>Lepomis microlophus</i>	Redear sunfish	27		X		
<i>Pomoxis annularis</i>	White crappie	14		X		
<i>Pomoxis nigromaculatus</i>	Black crappie	10			X	
Percidae⁴						
<i>Perca flavescens</i>	Yellow perch	13		X		
<i>Stizostedion canadense</i>	Sauger	1				X
<i>Etheostoma blennioides</i>	Greenside darter	11		X		
<i>Etheostoma caeruleum</i>	Rainbow darter	14		X		
<i>Etheostome camurum</i>	Bluebreast darter	1				X
<i>Etheostoma flabellare</i>	Fantail darter	25		X		
<i>Etheostoma nigrum</i>	Johnny darter	29		X		
<i>Etheostoma spectabile</i>	Orangethroat darter	12		X		
<i>Etheostoma tippecanoe</i>	Tippecanoe darter	1				X
<i>Percina caprodes</i>	Logperch	16		X		
<i>Percina copelandi</i>	Channel darter	2			X	
<i>Percina maculata</i>	Blackside darter	11		X		
<i>Percina phoxocephala</i>	Slenderhead darter	3			X	
<i>Percina sciera</i>	Dusky darter	1				X
<i>Percina shumardi</i>	River darter	2			X	
Sciaenidae						
<i>Aplodinotus grunniens</i>	Freshwater drum	18		X		
TOTALS			5	38	38	23

¹*Esox masquinongy ohioensis*, Ohio muskellunge, reported in the Little Blue River system by sport fishermen through the 1960's.

²*Amblyopsis spelaea*, Northern cavefish, reported from cave explorations with records maintained by the U.S. Forest Service, Bedford, Indiana.

³*Morone chrysops*, white bass, stocked in Patoka Reservoir by the Indiana Department of Natural Resources.

⁴*Stizostedion vitreum vitreum*, walleye, stocked in Patoka Reservoir by the Indiana Department of Natural Resources.

mermoni (white sucker) - 30 sites, *Etheostoma nigrum* (Johnny darter) - 29 sites, *Semotilus atromaculatus* (creek chub) - 28 sites, *Esox americanus vermiculatus* (grass pickerel) - 27 sites, *Estheostoma flabellare* (fantail darter) - 25 sites, *Minytrema melanops* (spotted sucker) - 25 sites, and *Lepomis microlophus* (reard sunfish) - 21 sites.

Uncommon fishes included 38 species. Cyprinids (11 species), catostomids (6 species), and ictalurids (6 species) were major uncommon fishes.

Rare fishes of the Forest waters included 23 species. Fourteen of the rare species are particularly notable because they were reported only once over 25 years ago and have not been reported since. Krumholz (3) reported in 1948 that he collected *Dorosoma petenense* (threadfin shad) and *Hybopsis storeriana* (silver chub) in the Little Blue River near the Ohio River. *Lampetra aepyptera* (least brook lamprey) and *Scaphirhynchus platyrhynchus* (shovel nose sturgeon) were reported in 1955 by Gerking (2). Ten species were reported by Gerking in 1945 (1): *Hidon tergisus* (mooneye), *Hybopsis amblops* (bigeye chub), *Hybopsis x-punctata* (gravel chub), *Notropis amnis* (pallid shiner), *Noturus cleutherus* (mountain madtom), *Percopsis omiscomaycus* (trout-perch), *Centrarchus macropterus* (flier), *Etheostoma camurum* (bluebreast darter), *Etheostoma tippecanoe* (Tippecanoe darter), and *Percina shumardi* (river darter).

A statement of clarification is necessary for the following four species not collected, but included in the total of 108 noted earlier. *Morone chrysops* (white bass) and *Stizostedion vitreum vitreum* (walleye) have been introduced in the Patoka Reservoir impoundment area. Subsequent investigations will establish their position and presence in the Forest waters fish fauna. *Esox masquinongy ohioensis* (Ohio muskellunge) was reported periodically in the Little Blue River system by sport fishermen, but it has never been collected in scientific surveys. Finally, the presence of *Amblyopsis spelaea* (northern cavefish) in the Forest waters has been established from cave studies. Cavefish records are maintained by the U.S. Forest Service, Bedford, Indiana.

Summary

The literature review revealed a total of 108 fish species reported from waters of the Hoosier National Forest in southern Indiana. Fishes were collected at 87 defined sample sites with four species reported from other sources. The 108 species represented 21 families with 82 (76 percent) in only five families: Cyprinidae (29), Percidae (16), Centrarchidae (14), Catostomidae (13), and Ictaluridae (10).

Five species were designated very common in distribution, occurring in at least half of the collection sites. Fishes occurring at 11 through 40 sites were considered common and totaled 38 species. A total of 38 species were designated uncommon in distribution and were sampled at 2 through 10 sites. Fish species considered rare were collected at only one site. Of the 23 species designated as rare, 14 species were collected at least 25 years ago making the current status of their distribution questionable.

This manuscript is a brief synopsis of a report titled: *Distribution and Life History Notes for Fishes of the Hoosier National Forest, Indiana* by McComish and Brown in 1980 (4) as prepared for the U.S. Forest Service, Bedford, Indiana. This comprehensive report, available in Bracken Library, Ball State University, Muncie, Indiana, and the Indiana State Library, Indianapolis, Indiana, contains detailed and specific information on distribution and literature sources.

This work provides basic information for recreation and research interests and a comparative baseline for future studies. Future sampling may reveal significant changes in fish fauna distribution due to introductions, past sampling deficiencies, changes in habitat and water quality, and other factors. This comprehensive fish list provides a basis for decision-making in future management considerations and protection of the fishes and waters of the Hoosier National Forest, Indiana.

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