

BIOTIC COMMUNITY

Fish Community

Fish community data were collected by Missouri Department of Conservation staff from 15 sites throughout the basin during 1988 and five sites we resampled in 1998 (Table 5). Additional sampling was conducted in 1994 and 2002 as part of the Resource Assessment and Monitoring program (RAM). Fish were collected using a seine 15 or 25 feet long with 1/8" mesh. Kick seine methods were used to sample riffles. A boat-mounted electrofishing unit was used where possible to sample deep pools. Large fish were identified on site and returned to the water. Small fish were preserved and later identified in the laboratory. Data collected prior to 1988 were obtained from the Missouri Department of Conservation fish database.

A total of 53 species from 11 families have been collected in the Wyaconda River basin (Table 6). Fifty-one species were found in recent surveys. The fish community of the basin was generally dominated by more tolerant, wide-ranging species and includes fishes representative of the Prairie, Lowland, Ozark, and Big River faunal regions (Pflieger 1997). The dominant families were the minnows (20 species), catfishes (7 species), sunfishes (7 species), suckers (7 species), and perches (5 species). The most common and abundant species collected in recent surveys were the red shiner (*Cyprinella lutrensis*) and bigmouth shiner (*Notropis dorsalis*). Red shiners comprised 28% of the total sample in the basin and were found at 93% of all sites. Bigmouth shiners comprised 20% of the total fish sample in the basin and occurred at 87% of all sites. Both species are tolerant of high turbidity and siltation that persists throughout much of the basin. Other commonly occurring species (found in at least 60% of all sites) include: johnny darter (*Etheostoma nigrum*), creek chub (*Semotilus atromaculatus*), quillback (*Carpionodes cyprinus*), white sucker (*Catostomus commersoni*), sand shiner (*Notropis ludibundus*), bluntnose minnow (*Pimephales notatus*), suckermouth minnow (*Phenacobius mirabilis*), central stoneroller (*Campostoma pullum*), orangespotted sunfish (*Lepomis humilis*), and green sunfish (*Lepomis cyanellus*).

Sportfish (13 species that provide angling opportunity) comprised approximately 3% of all fish collected in basin streams. These fishes were under-represented numerically because larger individuals were not fully vulnerable to our sampling gear. Green sunfish were the most abundant species in this group and were found at 87% of all sites. Channel catfish (*Ictalurus punctatus*), probably the most popular game species, occurred at 40% of all sites, but accounted for only 1% of the total fish collected. Largemouth bass (*Micropterus salmoides*) and bluegill (*Lepomis macrochirus*) were collected at 27 and 13% of all sample locations, respectively.

Two species found in the basin prior to 1988 but not found in recent surveys include the bluntnose darter (*Etheostoma chlorosomum*) and ghost shiner (*Notropis buchmanii*), which were both last found in 1941. Both species have likely been extirpated from the basin. Similar declines of these species have occurred in other northeast Missouri streams. Reasons for the declines are not well understood; however, these species prefer clear water and are intolerant of turbidity and siltation (Pflieger 1997). The Mississippi silvery minnow (*Hybognathus nuchalis*) was thought to be extirpated; however three individuals were collected in 2002.

The Wyaconda River yielded the most species (40), followed by Sugar Creek (20), North Wyaconda River (16), and Little Wyaconda River (15). We also found a higher average number of species per site in the lower Wyaconda River. Thirty-nine species were collected from one site in the lower Wyaconda River at Sunnyside School Access. This higher diversity is likely due to its close proximity to the Mississippi River and the higher diversity of habitats in larger streams.

Threatened and Endangered Species

Of the species collected since 1988, none are considered state or federal rare or endangered. The Mississippi silvery minnow is listed as a species of conservation concern by the Missouri Department of Conservation. It is not considered endangered, but a species of long-term concern due to its rarity in parts of the state.

Fish Stockings

The Missouri Department of Conservation has not stocked the Wyaconda River; however many of the ponds and lakes within the watershed have been stocked for fishing.

Aquatic Invertebrates

Buchanan (1992) sampled seven northeast Missouri rivers (Fox, Honey, Wyaconda, North Fabius, Middle Fabius, South Fabius, and North) to determine the distribution of the endangered winged mapleleaf mussel (*Quadrula fragosa*). Although he did not sample this species within the Wyaconda watershed, he did find 21 species of mussels (Table 7), the most species found in the seven northeast Missouri rivers sampled. The catch rate in the Wyaconda River was 10 mussels/hour, the second lowest rate in the seven rivers sampled. The white heelsplitter (*Lasmigona complanata*) was the most abundant, composing 27% of all mussels sampled. The mapleleaf (*Quadrula quadrula*) was the second most abundant, composing 21% of all mussel sampled.

Only one crayfish species is known to inhabit basin streams or grasslands (B. DiStefano, Missouri Department of Conservation, personal communication). This species is the Northern crayfish (*Orconectes virilis*); the most widely distributed of Missouri crayfish.

Individuals from the RAM project sampled aquatic insects as part of their standardized monitoring program. Samples were taken from the same sites that fish were sampled. Eighty-seven taxon were collected from the four sites (Table 8). Insects from the order Diptera (true flies) were the most abundant, with 42 taxons present, followed by the mayflies (Ephemeroptera).

Table 5. Sampling sites in the Wyaconda River watershed.

Wyaconda River 1988 Complete Survey Sample Sites			
Stream Name	Site Number	Legal Description	County
North Wyaconda River	1	67n11w19se4	Scotland
North Wyaconda River	2	66n11w03nw4	Scotland
North Wyaconda River	4	66n09w31nw4	Clark
Wyaconda River	5	65n09w26se4	Clark
South Wyaconda River	6	66n12w02se4	Scotland
South Wyaconda River	7	66n11w36ne4	Scotland
Allen Creek	10	65n10w15w2	Scotland
Wyaconda River	11	64n08w09nw4	Clark
Wyaconda River	16	62n06w07nw4	Lewis
Wyaconda River	18	61n06w15ne4	Lewis
Little Wyaconda River	19	64n09w16sw4	Clark
Little Wyaconda River	20	64n08w32nw4	Clark
Little Wyaconda River	23	63n07w06sw4	Clark
Sugar Creek	25	62n07w09nw4	Lewis
Sugar Creek	27	61n06w06ne4	Lewis

Wyaconda River 1988 Partial Survey Sample Sites			
Stream Name	Site Number	Legal Description	County
North Wyaconda River	2	66n11w03nw4	Scotland
South Wyaconda River	7	66n11w36ne4	Scotland
Wyaconda River	18	61n06w15ne4	Lewis
Little Wyaconda River	23	63n07w06sw4	Clark
Sugar Creek	25	62n07w09nw4	Lewis

Wyaconda River 1994 and 2002 RAM Sample Sites			
Stream Name	Site Number	Legal Description	County
Wyaconda River	9510	61n06w15sec	Lewis
Sugar Creek	9532	62n07w36sec	Lewis
South Wyaconda	9535	65n10w4sec	Scotland
Little Wyaconda	9537	64n08w30sec	Clark

Table 6. Fish species collected from the Wyaconda River watershed.

Common Name	Collected Prior to 1988	Collected during 1988 Complete Survey	Collected during 1994 RAM Survey	Collected during 1998 Partial Survey	Collected during 2002 RAM Survey	Current Status
Shortnose gar		X	X	X		LA
Longnose gar	X	X			X	U
Gizzard shad		X	X	X	X	LA
Smallmouth buffalo		X				U
Quillback		X	X	X		U
River carpsucker	X	X	X		X	LA
Highfin carpsucker					X	U
White sucker	X	X	X	X	X	LA
Golden redhorse		X	X			U
Shorthead redhorse	X	X	X			U
Common carp	X	X	X	X	X	C
Goldfish		X				U
Creek chub	X	X	X	X	X	C
Bigeye shiner					X	U
Bigmouth shiner	X	X	X	X	X	C
Emerald shiner	X	X	X	X		C
Ghost shiner	X					E
Golden shiner	X	X	X	X	X	LA
Red shiner	X	X	X	X	X	C
Redfin shiner	X	X	X	X	X	C
River shiner			X			U
Sand shiner	X	X	X	X	X	C
Spotfin shiner		X	X	X		U
Bluntnose minnow	X	X	X	X	X	C
Brassy minnow			X			U
Bullhead minnow	X	X	X	X		LA
Mississippi silvery minnow	X				X	U
Fathead minnow	X	X	X	X	X	LA
Suckermouth minnow	X	X	X	X	X	U
Central stoneroller	X	X	X	X	X	C
Channel catfish	X	X	X	X	X	C
Black bullhead	X	X	X	X	X	LA

Table 6 continued

Common Name	Collected Prior to 1988	Collected during 1988 Complete Survey	Collected during 1994 RAM Survey	Collected during 1998 Partial Survey	Collected during 2002 RAM Survey	Current Status
Yellow bullhead	X	X	X	X	X	LA
Flathead catfish		X				LA
Stonecat				X		U
Tadpole madtom	X	X		X		U
Slender madtom	X	X	X	X	X	U
White bass			X			U
Mosquitofish		X		X	X	LA
Slenderhead darter	X	X	X	X	X	LA
Johnny darter	X	X	X	X	X	C
Bluntnose darter	X					E
Orangethroat darter		X				U
Fantail darter	X	X		X	X	LA
Smallmouth bass		X				U
Largemouth bass		X	X	X		LA
Green sunfish	X	X	X	X	X	C
Orangespotted sunfish	X	X		X		LA
Bluegill		X	X	X	X	LA
Black crappie		X				U
White crappie	X	X		X	X	LA
Brook silverside		X				U
Freshwater drum		X	X	X		LA

C = Common, LA = Locally Abundant, U = Uncommon, E = Extirpated

Table 7. Species of mussels found dead or alive in the Wyaconda River watershed during 1991. (From Buchanan 1992)

Common Name	Scientific Name	Number of Live Collected
Giant Floater	<i>Pyganodon grandis</i>	3
White Heelsplitter	<i>Lasmigona complanata</i>	20
Pistolgrip	<i>Tritogonia verrucosa</i>	7
Mapleleaf	<i>Quadrula quadrula</i>	15
Wartyback	<i>Quadrula nodulata</i>	1
Threeridge	<i>Amblema plicata</i>	1

Table 7 continued

Threehorn Wartyback	<i>Obliquaria reflexa</i>	2
Fragile Papershell	<i>Leptodea fragilis</i>	8
Pink Heelsplitter	<i>Potamilus alatus</i>	10
Pink Papershell	<i>Potamilus ohiensis</i>	1
Lilliput	<i>Toxolasma parvus</i>	2
Yellow Sandshell	<i>Lampsilis teres</i>	2
Pimpleback	<i>Quadrula pustulosa</i>	0
Wabash Pigtoe	<i>Fusconaia flava</i>	0
Deertoe	<i>Truncilla truncate</i>	0
Pondmussel	<i>Ligumia subrostrata</i>	0
	<i>Truncilla donaciformis</i>	0
	<i>Ligumia recta</i>	0
	<i>Lampsilis radiate</i>	0
	<i>Lampsilis ventricosa</i>	0
	<i>Strophitus undulates</i>	0

Table 8. Aquatic insects collected from the Wyaconda River watershed. Numbers in parentheses are the average number collected per site.

Order: Coleoptera

Helichus (37)
Dubiraphia (67)
Macronychus (19)
Stenelmis (1292)
Berosus (155)
Enochrus (1)
Scirtes (171)

Order: Diptera

Ceratoponinae (137)
Forcipomyiinae (39)
Chaoborus (144)
Ablabesmyia (178)
Chironomus (200)
Cladopelma (3)
Cladotanytarsus (742)
Clinotanypus (5)

Table 8 continued

Coelotanypus (9)
Corynoneura (4)
Cricotopus (7)
Cryptochironomus (233)
Cryptotendipes (4)
Dicrotendipes (332)
Glypotendipes (82)
Labrundinia (28)
Microchironomus (1)
Nanocladius (3)
Nilothauma (5)
Pagastiella (1)
Parachironomus (13)
Paracladopelma (18)
Paratanytarsus (18)
Paratendipes (1)
Polypedilum convictum (41)
Polypedilum halterale (2568)
Polypedilum illinoense (51)
Polypedilum scalaenum (521)
Procladius (51)
Pseudochironomus (1)
Stelechomyia (5)
Stempellina (18)
Stempellinella (7)
Stenochironomus (10)
Stichtochironomus (43)
Tanytarsus (411)
Thienemannimyia (189)
Tribelos (9)
Anopheles (20)
Culex (92)
Sciomyzidae (3)
Tipula (2)

Order: Ephemeroptera

Acerpenna (1)
Fallceon (38)

Table 8 continued

Procleon (37)
Baetisca (9)
Brachycerus (9)
Caenis (2909)
Hexagenia (6)
Stenacron (96)
Stenonema (137)
Tricorythodes (573)
Paraleptophlebia (190)

Order: Hemiptera

Corixidae (8)
Trichocorixa (1)
Rheumatobates (14)
Trepobates (3)
Hebrus (4)
Hydrometra (4)
Mesovelgia (8)
Neoplea (1)
Microvelia (12)

Order: Odonata

Hetaerina (8)
Argia (390)
Enallagma (36)
Corduliidae (1)
Epitheca (5)
Perithemis (5)
Dromogomphus (3)
Progomphus (11)
Hydracarina (128)

Order: Trichoptera

Cheumatopsyche (203)
Hydropsychidae (14)
Hydroptila (3)
Oxythira (8)
Nectopsyche (118)

Table 8 continued

Oecetis (154)
Triaenodes (3)
Chimarra (14)
Neureclipsis (9)