

HABITAT CONDITIONS

Channel Alterations

The lower reaches of the Cuivre River were substantially altered by channelization prior to 1927. Eight miles of stream were lost when a straight channel was cut across several meander loops near the mouth of the river. Elsewhere in the basin, small channelization projects occur on private property or with road and bridge construction but are not considered a major problem.

Unique Habitat

In the early 1980s the MDC inventoried counties within the Cuivre River Basin for unique natural features. Results of the Missouri Natural Features Inventory for Pike, Lincoln, Warren and St. Charles counties were reported by Bogler and Nigh (1986); Reese (1986) compiled data for Audrain and Montgomery counties. The inventories focused on seven categories of natural features: examples of undisturbed natural communities; habitat of rare or endangered species habitat of relict species; outstanding geological formations; areas for nature studies; other unique features; and special aquatic areas having good water quality, flora and fauna. These studies identified 99 potential natural features in the Cuivre River Basin. Twenty-six sites had notable, exceptional or highly significant natural features; twelve sites were in the lower Cuivre River subbasin, seven in the West Fork Cuivre River subbasin and seven in the North Fork Cuivre River drainage. Forty-nine sites were in a degraded condition and did not qualify as a natural feature. The quality of the remaining 24 sites was undetermined. The inventory identified five unique reaches of stream, all in Lincoln County. Two reaches—Big Sugar Creek and Sandy Creek Natural Tunnel—are Natural Areas. Big Sugar Creek Natural Area is 2.3 miles long and is located in Cuivre River State Park. It is a fine example of an intermittent Ozark Border headwaters stream. Limestone bedrock, small bluffs, gravel bars and numerous pools and riffles can be found along its length. Sandy Creek Tunnel Natural Area is located on a 20-acre tract about 6 miles northwest of Whiteside. It is best known for its natural tunnel and secondarily for having a high-quality stream and limestone glade. Sulphur and Mill creeks have notable geological formations. Limestone bluffs 70 feet high and narrows 15-20 feet wide can be found along a 0.5 mile reach of Sulphur creek in Township 51 North, Range 2 West, Northwest 1/4 Section 8. Some mesic forest and glade communities are also present. A 3/4-mile section of Mill Creek in the southeast corner of the William Logan Conservation Area has sandstone bluffs, overhangs and waterfalls. Several populations of the rare heart-leaf plantain (*Plantago cordata*) are found in damp woods along the stream. Lastly, the lower 2.4 miles of Bear Creek were characterized as an exceptional Ozark Border headwaters stream. The surrounding land also supports some high-quality talus, dry and mesic forests. The inventories documented eight rare species associated with notable or better quality habitat. Eight other sensitive species have been observed in the basin since 1986 (MDC 1991b; Fisheries District 4, MDC, unpublished data; J. Meyer, MDC, personal communication; A. C. Buchanan, MDC, personal communication; Table 11).

Improvement Projects

Currently, there are no MDC stream habitat improvement projects in the basin.

Stream Habitat Assessment

Stream and riparian habitat quality were evaluated at 26 sites in the basin from 1989 to 1991 (Figure hb). Habitat quality was described using the MDC Stream Habitat Assessment Device (SHAD), versions 6/89 and 8/89. Sample sites were the same as those selected for fish collections in 1989 and 1990, except for SHAD surveys done on the lower reaches of the Cuivre River during 1991. The surveys helped point out some common problems throughout the basin and provided a standardized description of habitat conditions at specific locations. The most common problem throughout the basin was the lack of 100-foot-wide tree corridors along both streambanks. Out of 26 SHAD surveys only two sites had a 100-foot-wide tree corridor along both streambanks. Twelve of 26 sites had a 100-foot-wide tree corridor on at least one side of the stream. Agricultural activities (crops of pasture) were prevalent in bottomland areas and were often the reason for narrow riparian corridors. Eight areas showed signs of moderate streambank erosion: the Cuivre River (RM 27); the West Fork Cuivre River (RM 2.3); the North Fork Cuivre River (RM 11.4, 24); Indian Creek (RM 8.5); Elkhorn Creek (RM 11.5); and Big Creek (RM 5.6, 12.2). Narrow riparian corridors and previous channelization or levees were often associated with these problems. Litter such as old car bodies, tires and trash was observed in isolated areas along or in some streams. During a fish kill investigation in 1992 Duchrow (1992b) indicated that litter was particularly bad on the lower reaches of the North Fork Cuivre River. There are two permitted sand and gravel dredging operators in the Cuivre River (McGrath 1992). Gravel is removed on the West Fork Cuivre River (Township 49 North, Range 1 West, Section 8), Cuivre River (Township 49 North, Range 1 West, Section 14 and Township 49 North, Range 1 East, Section 29) and Coon Creek (Township 48 North, Range 1 West, Sections 21 and 22). Annually, private landowners request assistance from the MDC for stream-related problems. From 1989 to 1991, nine requests were received involving streams within the basin (Table 12, contact authors for Table 12 information). A biologist inspected each site. The most common problem was an insufficient tree corridor along the stream. In two instances, levee constriction of the flood plain also contributed to the problem.

Table 11. Sensitive species of Cuivre River Basin (Bogler and Nigh 1986; Reese 1986; MDC 1991a; MDC 1991b; Fisheries District 4, MDC, unpublished data; J. Meyer, MDC, person communication; A.C. Buchanan, MDC, personal communication).

Species	Common Name	Federal Status	Missouri Status
Mammals			
<i>Lutra canadensis</i>	River Otter		Watch list
Species	Common Name	Federal Status	Missouri Status
<i>Ambystoma annulatum</i>	Ringed salamander		Watch list
<i>Hemidactylium scutatum</i>	Four-toed salamander		Rare
Birds			
<i>Tympanuchus cupido</i>	Greater prairie chicken		Rare
Fish			
<i>Notropis buchanani</i>	Ghost shiner		Watch list
Mussels			
<i>Obovaria olivaria</i>	Hickorynut		Watch list
Ferns			
<i>Ophioglossum vulgtum var pycnostichum</i>	Adder's tongue		Watch list
<i>Pilularia americana</i>	American pillwort		Watch list
Aquatic Plants			
<i>Lemna trisulca</i>	Star duckweed		Rare
<i>Najas gracillima</i>	Thread-like naiad		Endangered
<i>Eleocharis lanceolata</i>	Lance-like spike rush		Status Undetermined
Terrestrial Plants			
<i>Aralia nudicaulis</i>	Wild sarsaparilla		Rare
<i>Gaylussacia baccata</i>	Black huckleberry		Endangered
<i>Microseris cuspidata</i>	Prairie dandelion		Rare
<i>Plantago cordata</i>	Heart-leaf plantain		Watch list
<i>Tomanthera auriculata</i>	Auriculate false foxglove	C2	Rare

C-2 - taxon is a candidate for federal listing

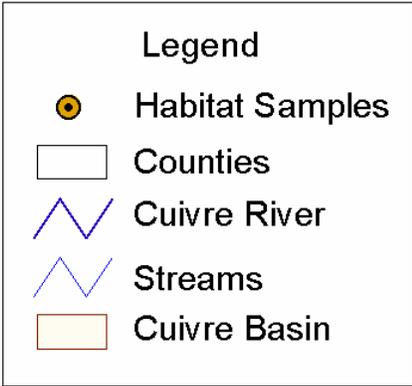
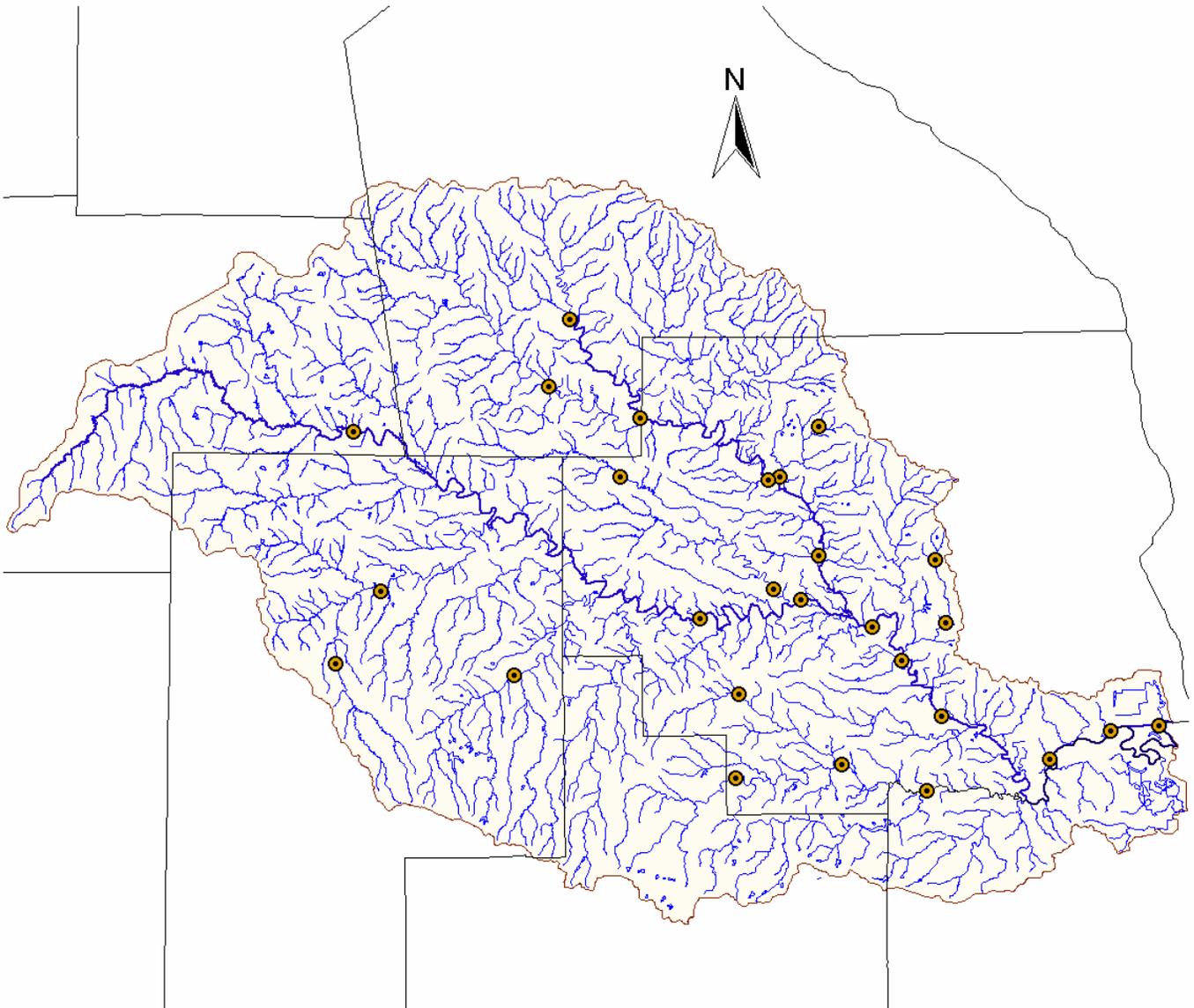


Figure hb. Habitat sample sites in the Cuivre River Watershed, in Missouri.