CURRENT RIVER

WATERSHED INVENTORY AND ASSESSMENT

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EXECUTIVE SUMMARY

The Current River Watershed drains a land area of approximately 2,621 square miles in portions of 9 counties in Missouri and 2 Counties in Arkansas. These counties include Texas, Dent, Reynolds, Shannon, Howell, Oregon, Carter, Butler, and Ripley in Missouri; and Randolph and Clay Counties in Arkansas. Most of the watershed (95.9%) lies within Missouri. Approximately 18% of the Current River Watershed is drained by the Jacks Fork River which flows into the Current River approximately 5 air miles east northeast of Eminence, Missouri. The Jacks Fork Watershed has been addressed in a separate watershed inventory and assessment document and thus will not be addressed within unless otherwise noted. In addition, the portion of the watershed occurring in Arkansas will not be addressed in this document unless otherwise noted.

The Current River is formed by the confluence of Pigeon Creek and the Montauk Spring complex near Montauk, Missouri. From its beginnings the river flows approximately 184 miles in a southeasterly to south direction before flowing into the Black River near Pocahontas, Arkansas. The Current River

Watershed (including the Jacks Fork Watershed and Current River Watershed in Arkansas) has 16 cities and towns within or partially within its boundary and approximately 3,407 miles of road (not including the Jacks Fork Watershed or Arkansas).

The Current River Watershed lies within the Salem Plateau Subdivision of the Ozark Plateau Physiographic Region. Elevations within the watershed range from a maximum of approximately 1500 feet above sea level in the uplands to approximately 280 feet above sea level in the lower portions of the watershed. Most of the watershed occurs within the Ozark Soil Region with a small portion of the watershed occurring in the Mississippi Delta Soils Region. Ten soil associations occur within the watershed.

The geology of the Current River Watershed consists primarily of dolomites and sandstone/dolomites of Ordovician age. Significant exposures of Cambrian Dolomite and Precambrian Igneous Rock associated with the St. Francois Uplift are present in the middle portion of the watershed. Quaternary Alluvium, associated with the Bootheel area of Missouri, exists in the southeastern portion of the watershed on the southeastern side of the Little Black River. In addition, a few small areas of Mississippian limestone and limestone/sandstone occur on the watershed's eastern boundary. A combination of climate and geology has created a karst landscape in the watershed characterized by a close interaction between groundwater and surface water systems through sinkholes, losing streams, and springs. Dye trace data for the Current River Watershed indicates the watershed receives substantial amounts of ground water from neighboring watersheds; the most notable example is the Big Spring recharge area. Much of this recharge area is located in the Eleven Point River Watershed.

There are approximately 197 third order and larger streams within the watershed. The Current River is a seventh order stream. An estimated 678 stream miles in the watershed have permanent water.

In order to facilitate analysis of watershed characteristics, the Current River Watershed was divided based on eleven digit hydrologic units. The largest of these units is the Little Black River unit which drains approximately 382.2 square miles.

Channel gradient was determined for all fourth order and larger streams within the Current River Watershed using data digitized from USGS 7.5 minute topographic maps. Composite gradient graphs were constructed for all fifth order and larger streams within the watershed. Average gradients for fourth order and larger streams within the watershed range from 1.2 feet per mile to 84.5 feet per mile. The Current River has an average gradient of 3.9 feet/mile.

Historical land cover within the uplands of the Current River Watershed primarily consisted of pine and mixed pine/oak woodland with an open understory of grasses and shrubs. Occasional prairie and savanna openings were also common in some areas. Land cover of the sideslopes consisted of oak and oak/pine forests with occasional glade and woodland type openings associated with exposed slopes and ridges having shallow soils. Valley bottom land cover consisted of mixed hardwood forest with occasional fen openings. Currently, approximately 80.1% of the Current River Watershed is forested based on analysis of MoRAP Missouri Land Cover data. Grassland is the second most prevalent land cover accounting for about 16.0% of the total watershed area. Within the Current River Watershed, approximately 32% (420,576 acres) of land is under public ownership. The United States Forest Service (USFS) holds the largest amount of publicly owned land, totaling 235,279 acres.

The 1990 human population within the Current River Watershed was estimated to be 24,890

persons. Population density in 1990 was approximately 9 persons per square mile.

Average annual precipitation within the Current River Watershed is 44.5 inches. The USGS currently (2002) has two active surface discharge gauge stations within the watershed (excluding the Jacks Fork Watershed). The annual daily mean discharge of the Current River at Doniphan is 2,815 cubic feet per second.

Overall water quality within the watershed appears to be relatively good based on the limited scope of analysis provided in this document. Within the watershed (excluding the Jacks Fork), there are no streams included in the 1998 303d list. However, two issues that may require further monitoring/investigation include elevated lead concentrations at various sites within the watershed as noted in a 1995 NPS commissioned water quality study and some past indications of poor water quality at some sites within the Little Black River Hydrologic Unit. Other items which always have the potential to cause water quality problems in this watershed, as in any other, include large numbers of livestock in riparian zones for extended periods of time, private septic system failure, increased nutrients from municipal sewage treatment facilities, improper sand and gravel removal and poor land use practices such as indiscriminate land clearing. These can result in periodic high fecal coliform levels, nutrient loading, and increased sediment deposition.

Within the Current River Watershed there are currently 29 dams which have records within the Dam and Reservoir Safety Program Database. All are reinforced earth structures with heights ranging from 5 to 73 feet. Impoundment areas range from 3 to 121 acres. Estimates based on analysis of National Wetlands Inventory data indicate that approximately 98 miles of channelized stream exist within the Current River. Most of these channelized areas are located in the lowlands of the southeast corner of the watershed watershed. Riparian corridor land cover within the Current River Watershed consists of more forest/wetland (78.9%) than grassland/cropland (20.2%).

The Current River Watershed exhibits a diverse biotic community. Since 1930, an assemblage of 124 fish species, 43 mussel species and subspecies, 25 species of snails, 5 crayfish species, and 300 taxa of benthic macro-invertebrates have been identified within the Current River Watershed. A total of 169 “species and subspecies of conservation concern” are known to occur in the watershed. This list includes 17 fish species, 10 species of mussels; 4 species of amphibian, 5 species of crayfish, 7 species of insects, and 1 snail species. The most prominent game fish species within the watershed include the brown trout, chain pickerel, grass pickerel, largemouth bass, rainbow trout, shadow bass, smallmouth bass, walleye, and warmouth. Sucker species provide additional recreational opportunities. Nuisance exotic aquatic species within the watershed include the Asian clam and the common carp.

The management goals, objectives, and strategies for the Current River Watershed were developed using information collected from the Current River Watershed Inventory and Assessment (WIA) and direction provided by the Missouri Department of Conservation Strategic Plan, the Fisheries Division Five Year Strategic Plan, and the Ozark Regional Management Guidelines. Objectives and strategies were written for in-stream and riparian habitat, water quality, aquatic biota, and recreational use. All goals are of equal importance. These goals include: (1) improve riparian and aquatic habitats in the Current River Watershed, (2) improve surface and subsurface water quality in the Current River Watershed, (3) maintain the abundance, diversity, and distribution of aquatic biota at or above current levels while improving the quality of the sport fishery in the Current River Watershed, (4) increase public awareness and promote wise use of aquatic resources in the Current River Watershed. The attainment of these goals will require cooperation with private landowners, other divisions within the Missouri

Department of Conservation, as well as other state and federal agencies.

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