MANAGEMENT PROBLEMS AND OPPORTUNITIES

These management goals, objectives, and strategies were developed to address objectives in the Missouri Department of Conservation's Strategic Plan, Fisheries Division's Strategic Plan, the Stream Areas Program Strategic Plan, and the Stream Acquisition Plan. These plans address strategic areas of future resource management, public awareness, and access needs.

GOAL I: IMPROVE WATER QUALITY AND MAINTAIN OR IMPROVE WATER QUANTITY IN THE SPRING RIVER BASIN SO ALL STREAMS ARE CAPABLE OF SUPPORTING NATIVE AQUATIC COMMUNITIES.

Status: Both point and nonpoint source pollution are threats to water quality in the basin. Human population is expanding in portions of the basin, particularly in the Joplin-Neosho-Carthage area. This population increase has resulted in increasing urbanization. Large poultry operations are common in the basin along with related land application of poultry wastes. Like much of southwest Missouri, large farming corporations have shown interest in establishing operations within the basin that have the potential to increase and concentrate livestock waste runoff.

Objective 1.1: Streams within the basin will meet state standards for water quality.

Strategy: Enforcement of existing water quality regulations and necessary revisions to these regulations will help reduce violations. Water quality problems must also be addressed through aggressive public awareness efforts and by encouraging good land use in riparian areas and throughout watersheds in the basin. Citizen activism is alive and well in the basin through STREAM TEAMs, and this should be encouraged. Working with related agencies to promote public awareness and incentive programs, cooperating with citizen groups involved with water quality issues in the basin, and helping to enforce water quality laws will be among the most efficient ways to achieve this objective.

Enhance people's awareness of 1) water quality problems (i.e., point source pollution, animal waste runoff, etc.) affecting aquatic biota, 2) viable solutions to these problems, and 3) their role in implementing these solutions. Media contacts, personal contacts, special events, and literature development and distribution will be used to reach people throughout the basin.

Review NPDES, Section 404, and other permits and either recommend denial or appropriate mitigation for those which are harmful to aquatic resources. Related activities will include cooperating with other state and federal agencies to investigate pollution events and fish kills, assisting with the enforcement of existing water quality laws, and recommending appropriate measures to protect and enhance aquatic communities.

Work with the Missouri Department of Health and MDNR to reduce contaminant levels in fish by collecting fish for contaminant analysis, advising the fishing public on the impacts of contaminant levels, and identifying and eliminating sources of contamination.

Work with MDNR to monitor water quality, improve water quality, and ensure compliance with discharge permits. With training, volunteer groups, such as STREAM TEAMs, could assist with water quality monitoring and improvement. These volunteer groups are strong advocates for good water quality throughout the basin. Further development of STREAM TEAMs should be encouraged. Related monitoring efforts should also be encouraged and directed to strategic locations.

Serve in an advisory role to citizen organizations and local governments on water resource issues. These efforts will help to ensure that existing and potential impacts to aquatic biota are recognized by the general public, community leaders, and local agencies and that efforts to minimize these impacts are included in local planning documents, regulations, and statutes.

Objective 1.2: Maintain base flows in streams within the basin at or above current levels within the constraints imposed by natural seasonal variations and precipitation.

Strategy: The most efficient and effective way to address these concerns will be through existing agency programs and the legislative process.

Summarize existing data and, working with USGS, gather available flow information to create flow duration curves for streams within the basin. Using these and other appropriate data, establish flow regimes that protect or enhance fish and other aquatic life.

Working with MDNR and the U.S. Army Corps of Engineers (COE), protect or enhance stream flows through oversight and enforcement of existing water withdrawal permits and other related permits.

Support development of water law and an interstate compact/agreement that will address the quantity of water in Missouri's streams.

Increase public awareness of and concern for water

quantity problems, the affected aquatic biota, and potential solutions through media contacts, personal contacts, and literature development and distribution.

GOAL II: IMPROVE RIPARIAN AND AQUATIC HABITAT CONDITIONS IN THE SPRING RIVER BASIN TO MEET THE NEEDS OF NATIVE AQUATIC SPECIES WHILE ACCOMMODATING DEMANDS FOR WATER AND AGRICULTURAL PRODUCTION.

Status: Stream habitat quality is fair to good throughout most of the basin. Some areas, including portions of the Capps Creek sub-basin, suffer from a more severe lack of riparian vegetation. The lack of adequate riparian corridors, excessive nutrient loading, drainage from mine tailings, streambank erosion, excessive runoff and erosion, and the effects of instream activities such as gravel mining are among the problems observed. Grazing practices along many streams contribute to streambank instability, nutrient loading, and poor riparian corridor conditions. Increased clearing and higher runoff associated with urbanization also impact stream habitat quality.

Objective 2.1: Riparian landowners on third order and larger streams will understand the importance of good stream stewardship and where to obtain technical assistance for sound stream habitat improvement.

Strategy: Advertising and promoting stream programs, installing and maintaining demonstration projects, and providing educational opportunities to landowners will make them more aware of the reasons and techniques for protecting streams. Emphasizing economic aspects of stream improvement will encourage more landowners to participate.

Work with MDC's Outreach and Education Division staff to develop stream management related materials and present related courses for elementary and secondary school teachers.

Establish and maintain stream management demonstration sites. Initially, an existing site on Dry Fork Creek will be used for demonstration purposes. Thereafter, additional sites will be developed on MDC frontage, the Community Assistance Program (CAP) project on Hickory Creek in Neosho, and as part of an anticipated SALT project in the Capps Creek watershed. Other sites will be located to provide demonstration opportunities to landowners throughout the basin.

Promote good stream stewardship through landowner workshops and stream demonstration site tours.

Objective 2.2: Maintain, expand, and restore riparian corridors; enhance watershed management; improve instream habitat; and reduce streambank erosion throughout the basin.

Strategy: High quality aquatic habitat is the critical factor in maintaining and improving natural stream communities. Stream habitat conditions will be improved by cooperating with and providing technical assistance to private landowners, working with other local, state, and federal agencies to manage stream

frontages on their properties, and installing stream improvement and habitat enhancement projects on MDC lands within the basin. Monitoring habitat conditions and using regulatory avenues to reduce impacts from development projects should also help to identify problems and minimize impacts on the stream resource.

Monitor habitat conditions in the basin periodically by using SHAD (or similar methodologies), aerial photography, and helicopter reconnaissance. Map riparian corridors on selected third order and all fourth order and larger streams. Prepare GIS layers when the technology is available, and update as needed.

Ensure that all MDC areas are examples of good stream and watershed management by including appropriate recommendations and prescriptions in area plans, implementing these practices in a timely manner, and monitoring these practices throughout their life. These practices will include, but may not be limited to, riparian corridor re-establishment, riparian corridor management, and maintaining soil erosion levels at "T" (soil replacement level) or lower.

Provide technical recommendations to all landowners that request assistance.

Improve riparian corridor and watershed conditions by actively participating in SALT projects that incorporate fish and wildlife values and promote sound stream stewardship. Cooperate with NRCS and the City of Neosho on the watershed management (PL566) project on Hickory Creek, NRCS and the Barry County SWCD on the SALT/AgNPS project on upper Shoal Creek, and with NRCS and SWCD boards to establish a SALT project in the Capps Creek watershed and in additional watersheds as appropriate.

Improve landowner stewardship of streams by promoting and implementing cost share programs, including MDC's watershed-based programs, that include streambank stabilization, alternative watering provisions, and establishment and maintenance of quality riparian corridors.

Objective 2.3: Critical and unique aquatic habitats will be identified and protected from degradation.

Strategy: Identification, acquisition, targeted private landowner programs, and cooperation with other

agencies/organizations will result in better management of critical and unique aquatic areas.

Conduct additional fish population sampling to further define and delineate unique and critical habitats.

Collect additional background information from the public and resource professionals to better define critical and unique aquatic habitats.

Acquire critical and unique aquatic habitats. Priority areas will include frontage along Capps Creek, Ozark cavefish cave sites and their recharge areas, and springs and sinkholes.

GOAL III: MAINTAIN DIVERSE AND ABUNDANT POPULATIONS OF NATIVE AQUATIC ORGANISMS WHILE ACCOMMODATING ANGLER DEMANDS FOR QUALITY FISHING.

Status: The basin has a diverse fish assemblage comprised of 86 fish species collected since the 1930s. Spring River, North Fork of the Spring River, Center Creek, and Shoal Creek have the most diverse fish communities. Capps Creek, in Newton County, is managed as a coldwater fishery. Additional efforts to enhance the coldwater fishery on Hickory Creek near Neosho are under consideration.

The Ozark cavefish is found in selected cave systems in the basin. The Ozark cavefish and Neosho madtom are listed as endangered by MDC and threatened by the U.S. Fish and Wildlife Service. The Ozark cavefish and Neosho madtom are the only federally listed threatened fish species in the basin. The redfin darter is also listed as endangered by MDC. State listed rare, threatened, or watch listed fish species found in the basin are the least darter, bluntface shiner, western slim minnow, ghost shiner, and pugnose minnow.

Self-sustaining populations of introduced rainbow trout are found in the upper portion of Spring River and Hickory Creek near Neosho. A coldwater fishery is supported by stocking rainbow and brown trout in Capps Creek. Sufficient samples to assess the status of most sportfish populations are lacking.

Black bass (smallmouth, largemouth, and spotted bass), brown and rainbow trout, and rock bass are actively managed for sportfishing.

Sportfish sampling has been conducted on portions of the Spring River and Shoal Creek to assess the potential and need for special black bass management regulations. No regulation changes are currently planned for the Spring River. Additional data analysis is pending for Shoal Creek.

Some invertebrate sampling has been conducted in the basin, but a system-wide comprehensive invertebrate collection has not been made.

Objective 3.1: Evaluate and maintain sportfish populations, with primary emphasis on black bass and rainbow trout, at sufficient quality and condition to satisfy the angling public.

Strategy: Assess the quality of sportfish populations and take steps to improve their populations through public education, regulations, habitat improvement, stocking, and other methods.

Develop and implement a monitoring program to obtain trend data on sportfish populations in the Spring River and its major tributaries.

Identify critical habitat areas for actively managed sportfish species and maintain or enhance these areas as needed to improve habitat.

Using regulations, habitat improvement, and other methods, continue implementation of population improvement programs for actively managed sportfish species.

Conduct a survey of anglers to determine catch, harvest, species preference, and fishing pressure.

Increase angler awareness of the recreational potential of fishes other than black bass and rainbow trout, such as catfish, buffalo, carp, drum, and gar.

Objective 3.2: Maintain populations of native non-game fishes, including the Ozark cavefish, Neosho madtom, and Arkansas darter, and aquatic invertebrates at or above present levels throughout the basin.

Strategy: Assess the status of fish and invertebrate communities throughout the basin. Techniques to maintain or improve non-game fishes will depend on the fish communities in decline and the causative agent. It is also assumed that improvements in other aquatic life will occur simultaneous to those occurring in fish communities.

Develop standard sampling techniques for assessing fish and invertebrate communities, including the use of indicator species, and implement a monitoring program to track trends in species diversity and abundance.

Maintain or enhance aquatic biodiversity and protect or enhance fish species diversity and abundance using regulations, stocking, habitat improvement, and related techniques,

Strategy: In cooperation with MDC's Natural History Section, continue efforts to assess the status of Ozark cavefish, Neosho madtom, and Arkansas darter populations throughout the basin and implement the existing federal recovery plans for the Neosho madtom and Ozark cavefish.

Continue monitoring efforts at known and historic Ozark cavefish sites and follow-up on new reports of possible cavefish populations.

Monitor populations of the Neosho madtom and the Arkansas darter as a part of standard fish community sampling throughout the basin.

Continue public awareness and habitat management efforts related to Ozark cavefish and consider additional possibilities for non-MDC funding for additional inventory work, continued public awareness efforts, and habitat management efforts.

Protect and improve Ozark cavefish habitat by implementing MDC cost share programs and encouraging stream, spring, and cave related cost share practices to be included on SWCD dockets (e.g., livestock fencing, abandoned well capping, alternative water sources, etc.).

Protect and improve stream habitats that support populations of the Neosho madtom and Arkansas darter by implementing MDC cost share programs and encouraging stream and spring cost share practices to be included on SWCD dockets (e.g., livestock fencing, riparian corridor enhancement, alternative water sources, etc.).

Participate in recovery efforts including interstate conferences and recovery team meetings.

GOAL IV: IMPROVE THE PUBLIC'S APPRECIATION FOR STREAM RESOURCES AND INCREASE RECREATIONAL USE OF STREAMS IN THE SPRING RIVER BASIN.

Status: Streams in the basin are used extensively for both fishing and other recreational activities. The Spring River, Center Creek, and Shoal Creek each receive considerable use by floaters and canoeists. Thirteen public stream access sites are located in the basin. This includes a CAP site under development on Hickory Creek in Neosho and stream frontage on Capps Creek CA and Talbot CA.

The public's understanding of the importance of streams culturally, biologically, and historically needs improving. While landowner participation in Streams For The Future programs has been limited, participation in the STREAM TEAM program has been good. Efforts are underway by several groups in the basin, including STREAM TEAMs, to improve public awareness of the importance of high quality streams.

Objective 4.1: Access sites, bank fishing areas, and trails will be developed and maintained in sufficient numbers to accommodate public use.

Strategy: We anticipate an increase in stream use because of an overall increase in the levels of fishing and other stream-based recreational activities. Acquisition and development projects along streams should be sufficient to meet these increasing demands.

Conduct a recreational use survey within the basin in conjunction with an angler survey to determine existing levels of use and satisfaction with recreational opportunities in the basin.

Acquire and develop public access and frontage sites (for boating and bank fishing) at strategic points, based on the Stream Areas Program Strategic Plan (McPherson 1994).

Improve bank fishing and other aquatic wildlife-based recreational opportunities on public lands.

Objective 4.2: Increase the general public's awareness of stream recreational opportunities, local stream resources, and good watershed and stream management practices.

Strategy: The public will be made aware of stream related recreational opportunities and issues through media outlets, fair exhibits, and Missouri Conservationist articles.

Increased appreciation of stream resources should follow enhanced public awareness and education. More concern about the quality and quantity of water within the basin's streams should follow, and greater citizen involvement and advocacy in related environmental issues should result. Newspaper articles, presentations, and special events highlighting streams should help foster this awareness.

Working with MDC's Outreach and Education Division staff, use streams in aquatic education programs. Identify and develop stream locations appropriate for educational field trips near participating schools.

Maintain a stream emphasis at public events such as the Ozark Empire Fair, Springfield Boat Show, etc.

Assist in the development of one article for the Missouri Conservationist and make suggestions for a future MDC video ("Missouri Outdoors", etc.) to highlight Spring River Basin recreational opportunities.

Contribute to future revisions of Missouri Ozark Waterways.

Prepare an annual fishing prospectus for selected streams.

Promote the formation of STREAM TEAMs and STREAM TEAM associations within the basin.

Distribute information through STREAM TEAMs and related organizations.