.

MANAGEMENT PROBLEMS AND OPPORTUNITIES

MANAGEMENT GOALS, OBJECTIVES, AND STRATEGIES

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 JAMES 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 increasing rapidly in portions of the basin, particularly in Greene, Christian, and Stone counties. This population increase has resulted in increasing urbanization in areas like Springfield, Ozark, and Nixa. Sewage treatment plant upgrades have been required, and considerable attention has been focused on the nutrient outfall from these facilities and its impacts on receiving streams and downstream reservoirs. 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 a variety of related organizations and 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.

Working with the Missouri Department of Health and MDNR, 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 organizations such as the Watershed Committee of the Ozarks, White River Watershed Coalition, James River Basin Partnership, and the Greene County/City of Springfield Water Resources Technical Advisory Committee. 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.

Control excess nutrient loading by assisting in ongoing efforts to quantify the effects of basin-wide nutrient loading on the productivity of Table Rock Lake and assist in efforts to control significant sources of excess nutrients in the basin.

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.

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 JAMES 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 Crane Creek sub-basin, suffer from a more severe lack of riparian vegetation. The lack of adequate riparian corridors, excessive nutrient loading, 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 Education Division to develop stream management related materials and present related courses for elementary and secondary school teachers.

Establish and maintain stream management

demonstration sites. Initially, existing sites on Flat Creek and Dry Crane Creek will be used for demonstration purposes. Thereafter, additional sites will be developed on MDC frontage and as part of anticipated SALT projects in the Crane 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 and who are willing to reestablish and maintain an adequate riparian corridor.

Improve riparian corridor and watershed conditions by actively participating in SALT projects to

incorporate fish and wildlife values and promote sound stream stewardship. Cooperate with NRCS and SWCD boards to establish a SALT project in the Crane 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.

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

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.

Implement the recovery plan for the Ozark cavefish and coordinate related efforts between MDC's Natural History Division, MDC's Southwest Fisheries Management District personnel, and related agencies.

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 of 71 fish species collected since the 1930's. James River, Flat Creek, and Finley Creek have the most diverse fish communities. Crane Creek, in Stone County, is a nationally recognized cold-water fishery. Growth rates and size structure of black bass in the lower James River are very good, and the lower James River has a long-standing reputation as an excellent float-fishing stream.

The Ozark cavefish is found in selected cave systems along the western border of the basin. The Ozark cavefish is listed as endangered by MDC and threatened by the U.S. Fish and Wildlife Service. The Ozark cavefish is the only federally listed threatened or endangered fish species in the basin. State listed

rare, threatened, or watch listed fish species found in the basin are the highfin carpsucker and the checkered madtom.

A population of paddlefish is maintained in portions of the basin through stocking. This population currently serves as a source of broodstock for MDC's hatchery system. Self-sustaining populations of introduced rainbow trout are found in Spring Creek near Hurley and Crane Creek near Crane. Sufficient samples to assess the status of most sportfish populations are lacking.

Sportfishing management emphasis species are black bass (smallmouth, largemouth, and spotted bass), rainbow trout, Ozark bass, channel catfish, and paddlefish.

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 populations of sportfishing management emphasis species 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 James River and its major tributaries.

Identify critical habitat areas for sportfishing management emphasis 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 sportfishing management emphasis 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 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 aquatic biodiversity and protect or enhance fish species diversity and abundance using regulations, stocking, habitat improvement, and related techniques,

Objective 3.3: Populations of Ozark cavefish will be maintained at or above current levels.

Strategy: In cooperation with MDC's Natural History Division, continue efforts to assess the status of Ozark cavefish populations throughout the basin and implement the existing federal recovery plan for this species.

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

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 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.).

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 JAMES RIVER BASIN.

Status: Streams in the basin are used extensively for both fishing and other recreational activities. Scenic stretches of stream are relatively common. The lower James River, Finley Creek, and Flat Creek each receive considerable use by floaters and canoeists. Eleven public stream access sites are located in the basin. Included in this total are an access site and a bank fishing area on Lake Springfield cooperatively managed by MDC and Springfield City Utilities. In addition, MDC also owns and manages frontage along Crane Creek on Wire Road Conservation Area (CA) and manages leased lands along Lake Springfield at the Springfield Conservation Nature Center.

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, and trails will be developed and maintained in sufficient numbers to accommodate public use.

Strategy: The MDC Strategic Plan anticipates 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 Education Division, use streams for aquatic education programs. Identify 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 James 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 organizations such as the Watershed Committee of the Ozarks, White River Watershed Coalition, James River Basin Partnership, and the Greene County/City of Springfield Water Resources Technical Advisory Committee.

.