### MANAGEMENT PROBLEMS AND OPPORTUNITIES

The Missouri Department of Conservation is charged with the '... control, management, restoration, conservation and regulation of the bird, fish, game, forestry and all wildlife resources of the state ....' As stated in MDC's recent Regional Management Guideline documents, 'The Conservation vision is to have healthy, sustainable plant and animal communities throughout the state of Missouri for future generations to use and enjoy, and that fish, forest, and wildlife resources are in appreciably better condition tomorrow than they are today.' In order to achieve this vision, efforts to better manage streams and their watersheds will be a continuing priority in the Pomme de Terre River watershed.

This section includes strategic guidelines to provide MDC Fisheries Division staff working in the watershed with management direction to address the issues detailed in earlier sections. These issues include point and non-point source pollution, urbanization, loss of riparian vegetation, the effects of large confined animal operations, dam influences, instream flow issues, increasing demands for recreation, and threats to aquatic life within the watershed. The guidelines will be used to address future stream management, public awareness, and public access issues and needs. Efforts specifically related to the management of impounded waters are addressed in detail elsewhere and are not included here.

# GOAL I: IMPROVE WATER QUALITY AND MAINTAIN OR IMPROVE WATER QUANTITY IN THE POMME DE TERRE RIVER WATERSHED SO ALL STREAMS ARE CAPABLE OF SUPPORTING HIGH QUALITY AQUATIC COMMUNITIES.

Objective I.1: Streams within the watershed will meet state water quality standards.

#### **Guidelines:**

- Enhance people's awareness of 1) water quality problems (i.e., point and non-point source pollution, poor septic systems and animal waste runoff, etc.) affecting aquatic biota, 2) viable solutions to these problems, and 3) their role in implementing solutions.
- Review NPDES, Section 404, 401 gravel removal and other permits and either recommend denial or appropriate mitigation for those which are harmful to aquatic resources, and investigate pollution events and fish kills.
- Work with the Missouri Department of Health and MDNR to monitor and reduce contaminant levels in fish.
- Work with MDNR to monitor and improve water quality and ensure compliance with discharge permits.
- Conduct water quality research relating watershed nutrient inputs effects on quatic communities in streams and reservoirs within the Pomme de Terre basin.
- Update MDNR 303d list with impaired stream reaches and work with them to improve these problem reaches.
- Serve in an advisory role to citizen organizations and local governments on urban development or

#### water quality issues.

**Objective I.2:** Maintain base flows in streams within the watershed at or above current levels within the constraints imposed by natural seasonal variations and precipitation.

#### **Guidelines:**

- Establish flow regimes that protect or enhance fish and other aquatic life.
- Continue the Pomme de Terre Dam water release plan for enhancing flows in the Pomme de Terre River to benefit fish and improve recreational use.
- Work with MDNR and USACE to protect or enhance stream flows through oversight and enforcement of existing water withdrawal permits and other related permits.
- Support development of water law that addresses 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.

GOAL II: IMPROVE RIPARIAN AND AQUATIC HABITAT CONDITIONS IN THE POMME DE TERRE RIVER WATERSHED TO MEET THE NEEDS OF AQUATIC SPECIES WHILE ACCOMMODATING DEMANDS FOR AGRICULTURAL, DOMESTIC AND INDUSTRIAL WATER USES.

**Objective II.1:** Help riparian landowners understand the importance of good stream stewardship and where to obtain technical assistance for sound stream habitat improvement.

#### **Guidelines:**

- Work with MDC's Outreach and Education Division staff to develop stream management related materials and present related courses to elementary and secondary school teachers.
- Establish and maintain stream management demonstration sites.
- Promote good stream stewardship through landowner and inter-agency workshops and stream demonstration site tours.
- Provide information to local SWCDs, NRCS, and farm organizations on best management practices for streams and watersheds.

**Objective II.2:** Maintain, expand, and restore riparian corridors; enhance watershed management; improve instream habitat; and reduce streambank erosion throughout the watershed.

#### **Guidelines:**

- Periodically monitor and assess habitat and riparian area conditions on selected streams in the watershed.
- Ensure that all MDC managed areas are examples of good stream and watershed management.
- Provide technical recommendations to all landowners that request assistance.
- Improve riparian corridor and watershed conditions by actively cooperating with other agencies on watershed-based projects (e.g. EQIP, AgNPS, 319).
- Improve landowner stewardship of streams by promoting and implementing programs, including MDC's watershed-based cost shares for streambank stabilization, alternative watering provisions, and establishment and maintenance of quality riparian corridors.

**Objective II.3:** Critical and unique aquatic habitats will be identified and protected from degradation.

- Conduct additional fish population sampling to define and delineate unique and critical habitats.
- Collect additional information from the public and resource professionals to better define critical and unique aquatic habitats.
- Acquire, protect, and enhance critical and unique aquatic habitats.

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

**Objective III.1:** Evaluate and maintain sportfish populations and maintain sufficient quality and condition of these populations to satisfy the angling public.

#### **Guidelines:**

- Develop and implement a monitoring program for collecting trend data on sportfish populations and angler use in selected stream reaches.
- Identify critical habitat areas for sportfish and maintain or enhance these areas as needed to improve habitat.
- Using regulations, habitat improvement, stocking and other methods, continue to improve sportfish populations.
- Increase angler awareness of the recreational potential of fishes such as buffalo, carp, drum, and gar.

**Objective III.2:** Maintain populations of native non-game fishes, including the Niangua darter, and aquatic invertebrates at or above present levels throughout the watershed.

#### **Guidelines:**

- 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.
- Protect or enhance aquatic biodiversity and abundance using regulations, stocking, habitat improvement, and related techniques.
- Educate the public about the need to control exotic aquatic species (ie. zebra mussels) introductions that may harm native biota in the watershed.
- Continue public awareness and habitat management efforts related to aquatic species of special concern and consider non-MDC funding for additional inventory work, continued public awareness and habitat management or acquisition efforts.
- Protect and improve habitats that support populations of aquatic species of special concern by implementing MDC cost share programs that protect and enhance streams, riparian areas and springs and work to include these practices on NRCS/SWCD cost share dockets.
- Participate in species 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 POMME DE TERRE RIVER WATERSHED.

**Objective IV.1:** Access sites, bank fishing areas, and trails will be developed and maintained in sufficient numbers to accommodate public use and minimize area maintenance.

#### **Guidelines:**

- Conduct a recreational use survey within the watershed in conjunction with an angler survey to determine existing levels of use and satisfaction with recreational opportunities in the watershed.
- Acquire and develop appropriate stream access and frontage sites to improve public accessability and minimize maintenance.
- Improve bank fishing and other aquatic wildlife-based recreational opportunities on public lands.

**Objective IV.2:** Increase the general public's awareness of stream recreational opportunities, local stream resources, and good watershed and stream management practices.

#### **Guidelines:**

- Working with MDC's Outreach and Education staff, use streams and watershed stewardship in aquatic education programs. Identify and develop stream locations appropriate for educational field trips near participating schools.
- Incorporate stream ecology and proper watershed stewardship information in USACE, MDNR and other governmental or organization's visitor centers and brochures located in the watershed.
- Emphasize the importance of proper watershed stewardship in protecting water quality, habitat and recreational value of Pomme de Terre Lake and Truman Lake.
- Maintain a stream emphasis at public events such as the Ozark Empire Fair, Missouri State Fair, and regional sport shows etc.
- Assist in the development of articles, videos, etc. that highlight Pomme de Terre River watershed recreational opportunities.
- Prepare an annual fishing prospectus for selected streams.
- Promote the formation of STREAM TEAMs and STREAM TEAM associations within the watershed.
- Distribute information through STREAM TEAMs and related organizations.
- Promote the monitoring of water quality in selected streams by STREAM TEAMS, schools and inter-agency cooperative watershed projects.