

MANAGEMENT PROBLEMS AND OPPORTUNITIES

MDC'S ROLE AND VISION FOR THE BLUE RIVER WATERSHED

The following perspectives on problems and opportunities for watershed management will guide MDC management activities for the foreseeable future. We realize that we are only one of many partners whose joint efforts will be needed to protect and restore stream ecosystem integrity in the Blue River watershed. This is especially true for this highly urbanized watershed which is located within two states and numerous cities.

IMPROVING WATER QUALITY

Current Status:

Water quality in Blue River watershed streams is degraded by many pollution sources. The lower reach of the Blue River has serious problems from industrial and sewage treatment plant discharges in addition to the cumulative effects of upstream pollution sources. Sewage treatment plant effluents negatively impact the lower reach of Indian Creek and the Blue River downstream from the confluence of these two streams. Although water quality improves further upstream, several point and non-point pollution sources have adverse impacts on aquatic fauna. Discharge violations and indiscriminate introduction of pollutants into basin streams will be a continual problem. Pollution from non-point sources will probably increase as the metropolitan area grows. The sources and impacts of all pollutants are not fully understood. The discovery of high concentrations of chlordane in Blue River fishes during the mid-1980's is a good example of this. Reaching beneficial use attainment for the Blue River will require improved compliance of water quality standards. All aquatic communities will benefit from efforts to enhance water quality. Fisheries management activities in Missouri should target the mainstream Blue River above the confluence with Indian Creek. Water quality in this reach of the Blue River is currently capable of supporting a diverse fish community including several important sport fish species.

Action Items:

- * Assist DNR with water pollution investigations for events resulting in the loss of aquatic life.
- * Recommend water quality standard classifications to DNR for streams and stream reaches of special concern.
- * Review permit applications for Section 401 of the federal Clean Water Act and provide recommendations to DNR. Report Section 401 violations to DNR whenever they are encountered in the field. DNR requires a Section 401 permit for any activity that could significantly degrade water quality in watershed streams.
- * Provide technical assistance dealing with water resource issues to local governments, land developers, and other land management organizations whose activities impact water quality.

* Educate the public about water quality issues and promote citizen advocacy. Stream Teams are important core groups to advocate for water quality improvement in the watershed. Currently, there are at least eight active Stream Teams which have adopted streams in the Blue River watershed (Missouri Stream Team Program).

* Assist the Missouri Department of Health (MDOH) by periodically collecting fish from the Blue River and preparing tissue samples for analysis of pesticide and heavy metal contaminants. Channel catfish and/or carp should be collected about every three years. Cooperate with MDOH in advising anglers about precautions to take in the consumption of fish.

PROTECTING STREAM HABITAT

Current Status:

Extensive development of the entire Blue River watershed will probably occur in a relatively short period of time (tens of years) with the expansion of Kansas City and its suburbs. The high value of land will probably result in a relatively low percentage of the watershed consisting of rural, idle, and park lands. Efforts to restore and enhance natural habitat will be best spent within stream corridors. Fortunately, there are some stream reaches where the corridors are already in public ownership and are managed as park lands. The most notable is the Blue River corridor from the Missouri/Kansas state line downstream to 63rd Street. Most of the corridor along this 17.6-mile stretch of river is owned by Jackson County Parks and Recreation, (Blue River Parkway) and Kansas City Parks, Recreation and Boulevards, (Minor Park and Swope Park). However, most stream corridors in the basin are in private ownership and many have been severely abused. Riparian timber has been removed, stream segments have been channelized, and trash dumped along streams. Efforts should be made to encourage public ownership of stream corridors to reduce their destruction by urban encroachment.

Streambank erosion is another habitat degradation problem in the Blue River watershed. Urban development continually alters the hydraulics of the Blue River and its tributaries. The proliferation of pavement, buildings and other impermeable surfaces in the watershed increases the amount and rate of runoff to basin streams. This not only accelerates bank erosion, but the flashy nature of water flows has a negative impact on fish communities and other aquatic fauna.

Flooding is a major problem along basin streams and will worsen unless measures are taken to counteract the effects of urban watershed development. Flooding occurs almost annually. Flood events which cause property damage in the millions of dollars are common and occasionally there is loss of human lives. The need for better flood control and watershed management has been recognized for many years. The USACOE completed an extensive flood control study for the Blue River basin in 1974 (USACOE 1974). The plan contained two major recommendations: 1) modification of the lower 13.6 miles of stream channel (63rd Street to the mouth) in the more heavily developed section of Kansas City including the industrial district, and 2) construction of four large water retention lakes in the upper watershed. The USACOE is currently working with the city of Kansas City, Missouri (local sponsor) on channel modifications in the lower section of the Blue River. Most of this work will have negative impacts on aquatic life as the stream channel is widened and straightened. The proposed watershed lakes would have totaled 3,100 acres at conservation pool. At flood pool, they would have totaled 5,250 acres and provided

68,100 acre-feet of flood water storage (USACOE 1974). Unfortunately, the lakes were not constructed and the opportunity has been lost due to urban sprawl into the proposed lake sites. Controlled water releases from these lakes would have reduced erosion of stream banks and maintained stream flows more beneficial to aquatic fauna. Many smaller water retention lakes would have to be constructed to provide the same flood protection as the proposed large lakes. Efforts to provide effective flood control in the Blue River basin have progressed very slowly. A major problem has been the coordination of a large number of municipalities in two states that must agree to a watershed management plan. Coordination problems will continue to be a major barrier to effective stream management.

Action Items:

- * Review permit applications for Section 404 of the federal Clean Water Act and provide recommendations to USACOE. Report Section 404 violations to USACOE whenever they are encountered in the field. USACOE requires a Section 404 permit for operators who propose to deposit or stockpile material in stream channels and alter stream channels.

- * Participate in local planning activities that impact stream habitat and aquatic communities, and provide technical input to agencies to protect these resources. Special emphasis should be placed on best management practices in the watershed to maintain natural stream systems.

- * Work with streamside landowners to promote the maintenance and reestablishment of functional riparian corridors. In most cases, this would be a timbered corridor at least 100 feet wide. Emphasis should be placed on the public lands located along the Blue River from the Kansas/Missouri state line to 63rd Street.

- * Inventory riparian corridors, eroding stream banks, and instream cover especially in the Blue River Parkway, Swope Park, and Minor Park. This will be a labor intensive activity which will require the support of the public such as Stream Teams. GIS capabilities may be a good method to monitor trends in riparian corridor condition.

- * Establish benchmarks along stream reaches where bank erosion is suspected to be a problem. Monitor erosion rates and implement bank stabilization projects if practical.

- * Provide technical recommendations to landowners who request assistance with land management along streams.

CONSERVING AQUATIC COMMUNITIES

Current Status:

Despite urban development and related water quality and habitat degradation, portions of the Blue River and its tributaries provide diverse communities of fishes and aquatic invertebrates. Thirty-eight fish species have been sampled from the Blue River basin and nearly all of these fish are year-round inhabitants. There are no known endangered fish species in the watershed. Pallid sturgeon, lake sturgeon, and flathead chubs which are endangered in Missouri could migrate into the watershed from the Missouri River, but this would be unlikely due to poor water quality in

the lower reach of the Blue River. In recent years, aquatic invertebrates have been sampled on a regular basis as part of the Stream Team program. Monitoring the diversity of fishes and aquatic invertebrates will be a valuable method to determine trends in environmental quality.

In Missouri, the best fishing in the Blue River is upstream from 63rd Street. Much of this 17.6-mile reach of the river has moderate gradient and rocky substrate. During periods of normal to low flow, the water is typically clear. The stream appears to be more characteristic of a transitional Prairie-Ozark upland stream rather than a true prairie stream. A network of riffles and pools, deadfalls, and a variety of streambed substrates provide good fish habitat. Channel catfish and carp are probably the most abundant and sought after sport fishes, however, flathead catfish, black bullhead, largemouth bass, green sunfish, bluegill, and white crappie are also caught by anglers. In the lower section of this reach, including Swope Park, the gradient lessens. Riffle and pool complexes are replaced by long runs. Silt and clay become more common streambed substrates and water conditions are more turbid. Catfish and carp are the more common and important sport fish species. Fish community diversity and fishing opportunities vary greatly in other reaches of the Blue River and its tributaries. Some sections of streams in the basin such as the lower Blue River and lower Indian Creek are grossly polluted and support limited fish populations. Some reaches have experienced severe habitat degradation such as the lower Brush Creek stream channel which is a concrete waterway. On the other hand, some streams such as Wolf and Coffee creeks in the upper watershed have been altered less by urban development. They have better water quality and habitat which support diverse fish communities. However, sport fishing opportunities are limited due to the smaller size of these streams.

Since the entire Blue River basin is in a major metropolitan area, degradation of water quality, stream habitat, and fish communities will probably continue. This is especially true in the upper half of the watershed in Johnson County, Kansas where urban development is spreading at a rapid pace. Any efforts to protect aquatic communities must emphasize water quality enhancement, stream habitat conservation, and good watershed management practices.

Action Items:

* Develop standard sampling techniques for assessing fish and benthic macroinvertebrate communities, including the use of indicator species, and implement a monitoring program to track trends in species diversity and abundance. Statewide, MDC is developing a long-term Resource Assessment and Monitoring program (RAM). The objective is to establish standardized sampling methods for several stream ecosystem attributes, especially biotic communities, that will allow scientists to provide an accurate, legally defensible portrayal of conditions and trends. Sampling will occur at random and fixed sites to allow statewide or individual watershed assessments. Stream Teams and other water quality monitoring volunteers should be an important part of the work team to monitor macroinvertebrates.

* Using watershed best management practices, habitat improvement, regulations, and other techniques, implement programs to protect and enhance aquatic communities including fish and macroinvertebrate species diversity and abundance.

INCREASING RECREATIONAL USE

Current Status:

Public use of the watershed streams has not been surveyed. Use is probably at least moderate since the watershed is located in a major metropolitan area. Fortunately, there is a large amount of public park land along the Blue River and, to a lesser degree, along Indian, Brush, Coffee, and Wolf creeks. These lands help protect stream corridors from the negative impacts of urban development. In the long run, acquisition of more stream corridors for park lands will probably be the best strategy to ensure corridor protection. Natural resource managers, park administrators, and the public must be diligent to ensure that current park lands containing stream corridors are not sold or developed intensively. Acquisition of large tracts of land with stream corridors will probably be difficult in the future due to the high cost of land in the urban area.

The public lands mentioned above provide fairly good access to the Blue River and other basin streams. For example, Blue River Road follows the river for about 8.4 miles in Missouri. Most access requires at least some hiking through corridors to reach the streams. This is not a problem for serious anglers, hikers, and other outdoor enthusiasts. However, easy access to the streams for most people is limited except for a few locations. This is especially true for people who are mobility impaired. Access to the Blue River and some of its major tributaries should be improved. Improved access would foster more use along basin streams and promote appreciation of aquatic resources.

We assume that a large percentage of the urban public is not aware of stream recreational opportunities in the Blue River watershed. Publicizing recreational opportunities will increase use and awareness of the resource's value. Increased public contact with this resource will foster advocacy for watershed streams.

Action Items:

- * Develop more nature trails along basin streams to give the public better opportunities to interact with aquatic resources. More trails would improve access for streamside activities such as bank fishing, bird watching, and general nature interpretation. Emphasis would be placed on existing public lands such as the Blue River Parkway. MDC would coordinate with JCPR and KCPRB to determine county and city plans for trail development and possibly enter into Community Assistance Program (CAP) agreements to assist with these efforts.
- * Construct another canoe/small boat access site on the Blue River to complement the one at the Brown Athletic Field northeast of Martin City. This facility was constructed by MDC as a CAP agreement with JCPR. A takeout access about four miles downstream in the vicinity of Red Bridge Road at Minor Park might be a desirable site since there are existing parking areas. This area is already used as a takeout area by some people who float the stream, but canoes and small boats must be carried overland to vehicles. Other potential sites may also be located further downstream.
- * Encourage public land management agencies to increase their riparian corridor land holdings (e.g., linear parks along major streams).

* Publicize stream recreational opportunities in local newspapers, radio, and television programs. Include watershed streams in publications that provide information about fishing, floating, hiking, and other activities related to stream resources. Produce a user guide promoting these recreational opportunities in the watershed and especially along the Blue River.

PROMOTING CITIZEN INVOLVEMENT

Current Status:

Unfortunately, most residents who live in the Blue River watershed do not regard the Blue River and its tributaries as important natural resources and valuable areas for outdoor recreation. For these people, the Blue River conjures up visions of flooding, contaminated water, fishkills, and stream corridors degraded by urban development. These attitudes are frequently reinforced by media articles that emphasize negative rather than positive aspects of the river.

The degree to which the streams in the Blue River watershed are preserved and wisely managed will ultimately depend upon public perceptions and attitudes toward this resource. There is a need to increase public awareness and appreciation for stream resources. Programs such as Stream Team need to be expanded to build a strong base of advocates for watershed streams.

Action Items:

* Publicize stream recreational opportunities in local newspapers, radio, and television programs. Include watershed streams in publications that provide information about fishing, floating, hiking, and other activities related to stream resources. Produce a user guide promoting these recreational opportunities in the watershed especially along the Blue River.

* Improve access to the watershed streams as discussed in the above section about increasing recreational use.

* Promote Stream Team and other organizations that are interested in conserving stream resources. Provide technical assistance to groups involved in water quality monitoring, stream habitat improvement projects, public awareness promotion, and similar activities.

* Update this document on the Internet so the public can access the latest information about the Blue River watershed.

* Support efforts such as T.R.U.E. BLUE which educate the public, especially young people, about watershed issues and the value of stream resources.