HABITAT CONDITIONS

Channel Alterations and Habitat Problems

Although few extended reaches of the North River have been channelized, numerous short reaches have been altered, mostly by private landowners. Channelization has also been associated with bridge construction and repair. Channelization not only includes straightening the stream, but also bank clearing, and widening of the channel. This results in a loss of total stream area and usable habitat, increased streambank erosion, and a homogenous habitat that supports for less aquatic life.

An additional and severe habitat problem is streambank instability in areas that lack sufficient forested riparian corridor. Vertical bank height may exceed 12 feet in some areas. The Natural Resource Conservation Service estimated streambank erosion rates at four sites to be from 25,000 to 49,000 tons/year or about 1 acre/mile/year (R. Cheshire, personal communication). Maintaining depth diversity is difficult, if not impossible, in areas where streambanks are unstable. Stream habitat in some areas has also been severely degraded by grazing livestock that trample streambanks and streambeds, increasing turbidity and erosion and destroying instream cover.

A considerable amount of the stream bed in North River is gravel. Gravel movement in the channel facilitates the formation of pool-riffle sequences which helps maintain biotic diversity. However, gravel mining by landowners and especially county road departments is extensive in some areas. This activity can have major impacts on aquatic life. Gravel dredging directly affects stream life by physical disturbance of the stream bed, streambank destruction, and often channelization. Indirect, long-term effects of gravel dredging can be even greater. Gravel mining can result in stream bed instability, channel downcutting, headcutting, and aggradation, increased sedimentation and turbidity, and lateral channel migration (Meador and Layher 1998). Instream flow, water chemistry and temperature, bank stability, and the availability of cover may be altered. Channel incision and headcutting not only affect aquatic life, but can also threaten bridge safety by undermining piers. The effects of gravel and sand mining can be seen miles away from the work site, both upstream and downstream.

Unique Habitat

Despite the extensive stream degradation that has occurred in the basin, some areas still provide good aquatic habitat and diverse fish communities. North River from highway 168 downstream to the road crossing in section 23, township 59n, range 8w and 2 to 3 miles of Hawkins Branch and Merrills Branch, and Tiger Fork from route E to its mouth were named as Significant Aquatic Areas in the Missouri Natural Features Inventory due to the occurrence of several species uncommon to northeastern Missouri (Anderson 1983).

The basin also provides seasonally important habitat for the Indiana bat, a federally endangered species. During the breeding season, these bats roost beneath the loose bark of old, large decaying hardwood trees. They are especially attracted to shagbark hickory trees (R. Clawson, MDC, personal communication).

Improvement Projects

At the University of Missouri's Greenley Farm the Missouri Department of Conservation's Stream Services Unit has worked with the University to demonstrate a wide variety of riparian best management practices. These improvements include: a solar powered water pump, livestock exclusion from the stream channel and riparian corridor, riparian reforestation, and two reinforced stream crossings.