

Down by the Green River

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Above: a good example of riparian habitat, including a stand of native cane, near the mouth of Russell Creek.

Below: a relatively undisturbed bend of the Green River in Hart County.

Opposite page: Green River in Green County showing badly eroding banks.

All photos by Richie Kessler

\$110 Million Grant for Riparian Habitat

Representatives from the U.S. Department of Agriculture (USDA) and Kentucky Governor's Office recently signed a Conservation Reserve Enhancement Program (CREP) grant agreement. It allocates \$110 million of federal, state, and private funds to protect riparian areas in the upper Green River system. The USDA will provide \$88 million for this 10-year project, while the state and TNC contribute the matching \$22 million. Numerous agency and other partners, including staff from the Service's Asheville Field Office, were involved in crafting the grant proposal.

Row crops and livestock are in some cases detrimental to water quality and associated habitats. The CREP program's goal is to retire 100,000 acres

Immortalized in John Prine's song "Paradise," the Green River flows lazily through west-central Kentucky before joining the Ohio River. Although Prine sings of the town of Paradise in Muhlenberg County, we think that true paradise lies many miles upstream.

The upper Green River system historically harbored 66 mussel species, or 22 percent of North America's mussel fauna, including the endemic Kentucky creekshell (*Villosa ortmanni*). Eight of these mussels and an endemic crustacean are listed under the Endangered Species Act. The river's fauna also includes records for 150 fishes, 8 of them system endemics. The Nature Conservancy (TNC) ranks the upper Green fourth nationally in number of imperiled aquatic species.

Located in a vast karst landscape, the upper Green's basin is dotted with at least 1,000 sinkholes and caves. The 336-mile (540-kilometer) Mammoth Cave system is the world's largest. The endangered Mammoth Cave shrimp (*Palaemonias ganteri*) is only found in the area's subterranean waters. Two endangered mammals, the gray bat (*Myotis grisescens*) and Indiana bat (*M. sodalis*), call caves in the region home.

The 100-mile (160-km) section of river between Green River Reservoir Dam (GRRD) and Mammoth Cave National Park is the focus for a major TNC community-based habitat restoration project. The primary goals of the Green River project,



which began in 1996, are to reduce nonpoint source pollution and eliminate other stresses on aquatic habitats. A project director, hired in 1999 to work in the mostly agricultural watershed, lives in the area and has become an accepted member of the community. The Fish and Wildlife Service's field offices in Asheville, North Carolina; Cookeville, Tennessee; and Frankfort, Kentucky, coordinate with TNC on restoration activities. Together, the Service and TNC are committed to the success of a long-term project and are establishing partnerships with landowners and other stakeholders in the region.

Typical habitat restoration activities include constructing fencing, providing alternate livestock watering sources, stabilizing heavy use areas, installing erosion control structures, revegetating streambanks, improving riparian buffers, and advocating improved agricultural practices. Community-based activities include illegal dump cleanups, providing low-cost rental equipment to community farmers, and hosting informational meetings. The eclectic approach to conservation benefits aquatic organisms by reducing sedimentation, nutrients, and other pollution runoff while enhancing riparian habitats for foraging bats and neotropical migratory birds.

Cooperators in the project include federal agencies (Environmental Protection Agency, Army Corps of Engineers, National Park Service, Geological Survey, Department of Agriculture's Natural Resources Conservation Service (NRCS) and Farm Services Agency), state agencies (State Nature Preserves Commission, Department of Fish and Wildlife Resources, and Divisions of Water, Conservation, and Forestry), private landowners, and other stakeholders.

The partners are tapping various funding sources for restoration activities. The Service's Partners for Fish and Wildlife program is aiding private landowners in restoring riparian buffers and related activities. TNC has an excellent track record in leveraging "seed money" many times over with private

and other funds. Clean Water Act grants help fund various restoration activities and other expenses. Habitat protection programs of NRCS, such as the Environmental Quality Incentives Program and Conservation Reserve Enhancement Program (see sidebar article), are also commonly used by farmers.

Scientific research activities in the system are shedding light on how to better manage, conserve, and recover the Green's imperiled fauna. The Corps of Engineers has been contracted by TNC to modify releases from GRRD to better meet the needs of aquatic resources. A mussel propagation facility is being considered by Mammoth Cave National Park. Research in the watershed being conducted on imperiled fishes, crayfishes, and mussels not only furthers our knowledge of these organisms and aids in their recovery, it helps partners identify stream reaches critical for protecting and managing important habitats.

The community-based approach proves that farming and natural resource conservation are compatible, economically feasible, and highly desirable for all parties (and species) involved. Private landowner cooperation is the most crucial variable in the habitat protection equation. Without broad-based landowner support, restoration efforts would have little chance of success. With their support, we can improve and protect the stream and riparian habitats upon which the imperiled wildlife of the Green River fauna depends.

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(40,400 hectares) of stream and sinkhole riparian areas from agricultural production. Private landowners in eight counties may be involved. The ambitious, but voluntary, incentive-based program pays eligible landowners bonuses of \$140 to \$150 per acre for signing 15-year buffer agreements and annual payments of \$80 to \$150 per acre for maintaining buffers, while permanent easements will earn landowners \$400 per acre, funded by TNC.

Money from CREP will dovetail nicely with TNC's Green River Bioreserve. TNC will continue to use Service and other restoration funds to continue riparian restoration work, while CREP funding will go only toward habitat protection. Together, the two funding sources should ensure that significant portions of Green River riparian habitats are restored and protected.