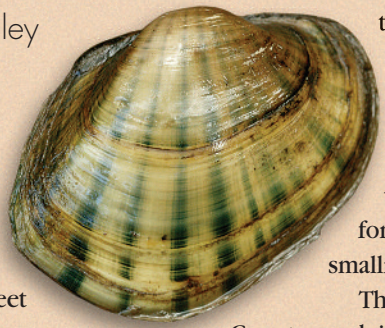
A choice stream prized by famed biologist Frank Bellrose gets an upgrade.

Habitat Restoration Takes Some "Mussel"

Story By Timothy M. Kelley
Photos By Adele Hodde

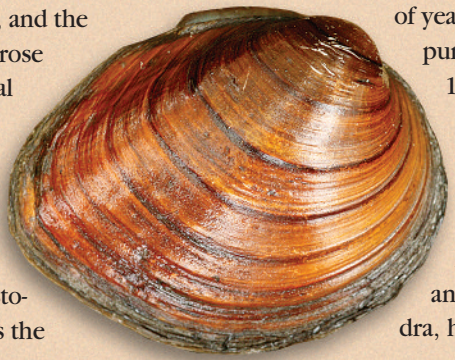
On a cold day last October, motorists traveling along 2400 North Street in rural Logan County might have wondered just what the dozen people kneeling and sloshing around in Sugar Creek were up to. Was it a Polar Plunge? Some new-fangled method of fishing? Were these people crazy?

The cold truth: Department of Natural Resources personnel and volunteers were moving freshwater mussels within the creek bottom in preparation for an in-stream habitat enhancement project designed to improve habitat for species such as smallmouth bass.



Plain pocketbook (*Lampsilis cardium*)

The northern Logan County creek is a rare gem in an agricultural landscape, and the keen eye of Frank Bellrose recognized its potential as far back as the late 1940s. In 1949, the legendary waterfowl researcher, along with colleagues from the Illinois Natural History Survey, came across the property when canoeing the creek while bass fishing. Bellrose was taken with the piece of ground, particularly due to the high number of bluebirds he observed in the area. After keeping his eye on the property for a number of years, he was able to purchase the farm in 1953 and it remains in the family today.



Round pigtoe (*Pleurobema sintoxia*)

Bellrose's son, Ron, who farmed the property for more than 30 years, and Ron's wife, Sandra, have dutifully carried

Picturesque Sugar Creek runs through the Bellrose property in Logan County.

DNR biologists surveyed for and gathered live mussels from the stream bed. The stake in the foreground delineates where boulders would be placed.

on Frank's desire of keeping the farm in its original state. In fact, they have likely exceeded his vision, considering that approximately 71 acres of the 400-plus acre farm are now registered as an Illinois Nature Preserve, guaranteeing those acres will remain as high-quality habitat in perpetuity as the Sandra Miller Bellrose Nature Preserve.

The specific idea of the stream enhancement project had its genesis when Bellrose expressed an interest in restoring a wetland on his Conservation Reserve Enhancement Program (see side bar) property and enhancing bass habitat in the creek. Natural Resources Damage Assessment mitigation funds available after a gasoline spill in Sugar Creek upstream of his property were coupled with CREP monies to enhance water quality and habitat along the 0.8-mile stretch of Sugar Creek passing through the Bellrose farm.

In Illinois, a high-quality mussel stream is recognized as a definable stretch of stream or river containing 10 or more species of live mussels. In recent samplings, 17 live species have been collected from the Bellrose's stretch of Sugar Creek, making it one of the most diverse mussel waterways in the area. By moving the mussels prior to placing boulders in the creek, the team hoped to prevent any unnecessary damage to the mussel fauna, while also using the effort as an additional status check on this stream reach.

Working in conjunction with private experts, a team comprised of NRDA, Logan County Soil and Water Conservation District and DNR Office of Resource Conservation personnel devised a series of in-stream enhancements to improve the quality of this creek stretch. In these types of projects, target species are normally chosen in order to have something by which to measure results. In this case, smallmouth bass was chosen as the main target organism, along with stream macroinvertebrates. Procedures planned to help create, maintain or improve quality cover habitat in the stream included installation of boulder arrangements and wooden habitat structures, and securing existing woody debris in the stream.

Preparing the stream bed for boulder placement, the crew attempted to relocate all living mussels within the construction zone to nearby areas that would remain unaffected by groups of boulders placed in the stream with a small construction crane. Each arrangement consisted of approxi-

From the bank, a crane lowered boulders to a contractor for placement in the creek (below). A DNR biologist carries an armload of live mussels to be identified and moved prior to boulder placement (right).

(Photo by Debbie Bruce.)

DNR personnel canoe the stretch of Sugar Creek prior to the stream enhancement project.

mately two to four bedrock-material boulders placed in small groupings in the creek.

The crew spread out across the creek and waded upstream, collecting every mussel they could either see or feel. Because mussels bury themselves in the substrate, many were found by digging through the sand, gravel and mud comprising the creek bottom.

Cold water temperatures coupled with a chilly day and stiff wind made for numb fingers and hands, but 300-plus mussels representing nine different live species were collected in about a half day's work. Before the mussel-gathering "party" was even over, the construction crew was placing the first boulder array in the creek; a few days later, the job was complete.

Part of the process of receiving money from NRDA for the in-stream projects included follow-up sampling to help gauge how well the habitat enhancement is working. Mussel sampling will be conducted along this stretch of creek to help determine if the boulders, habitat structures and woody debris have, indeed, created better habitat for the target species, as well as for mussels.

Only time will tell.

The Bellroses, for their part, have injected an enthusiasm and dedication into the ongoing natural management of this farm that tells this author that, if they have anything to do with it, the benefits to this habitat will be great and long-lasting.

Timothy M. Kelley is the DNR district natural heritage biologist stationed in the Havana field office.

Do it yourself

Capitalizing on a number of state and federal assistance programs, the Bellroses have aggressively pursued numerous programs helping them maintain and enhance the habitat quality of the farm to a level even the elder Bellrose might not have imagined. Interested in enhancing your property for wildlife? Investigate how these programs assisted the Bellrose family with a number of projects.

In-stream enhancements in Sugar Creek constructed to increase and improve habitat for fish, mussels and macroinvertebrates.

- The **Conservation Reserve Enhancement Program** is a special CRP program for the Illinois River Watershed offering additional federal incentives and state conservation easements and cost-share. Contact your local Soil and Water Conservation District for information or visit www.dnr.state.il.us/conservation_program/crep.
- A **Natural Resource Damage Assessment** enables Natural Resource Trustees to seek damages arising from injury to natural resources resulting from a release of oil and/or hazardous substance to the environment. Such damages are used to restore, replace or acquire the equivalent of the resources lost as a result of a release. For more information visit dnr.state.il.us/orep/contaminant_assessment.

Several wetlands recently constructed already provide important habitat for numerous avian, amphibian and reptile species.

- CREP and NRDA (see above)

Acres of trees planted in the riparian zone restore the creek bottoms to their mostly forested natural state.

- The **Conservation Reserve Program** is a Farm Bill Program that assists landowners in taking cropland out of production and establishing habitat. Contact your local Soil and Water Conservation District for information.

Timber-stand improvement through removal of non-native trees and control of exotic and invasive species, along with savanna restoration on the creek bluff.

- The **Landowner Incentive Program** is a cost-share program to help private landowners enhance or restore habitat for species that are threatened, endangered or in decline because of loss of habitat in the Lower Sangamon River Watershed and the Alton Bluffs. For details, call (217) 741-6901 or visit www.dnr.state.il.us/conservation_program/lip.
- The **Conservation 2000** Ecosystem program provides grants to help establish, restore or enhance critical habitat to benefit species and water quality. See www.dnr.state.il.us/orep/c2000/ecosystem for information.
- The stewardship component of the **Natural Areas Acquisition Fund** provides land management grants (typically $5,000-$10,000 per project) to any landowner of a dedicated Illinois Nature Preserve or registered Illinois Land and Water Reserve for approved on-the-ground management and restoration projects. Funding for the grants comes from the annual appropriation of the Natural Areas Acquisition Fund, a fund created by the General Assembly in 1989 for the purpose of "acquisition, preservation and stewardship of natural areas, including habitats for endangered and threatened species, high quality natural communities, wetlands and other areas with unique or unusual natural heritage qualities." Call (217) 345-2420 for information.