

STATE WILDLIFE GRANT '05

NATURAL LAND INSTITUTE

Grant Proposal

PROJECT NUMBER: T-33 D -I

PROJECT TITLE: Raccoon Creek Restoration and Reconnection – Phase 2

PURPOSE: To remove and replace the culverts on Raccoon Creek that are an obstacle to fish migration with an open span bridge and reconnect the creek to the oxbow lake within Nygren Wetland Preserve to allow fish to migrate from the Pecatonica and Rock rivers into the lake and wetlands to spawn and feed.

NEED: Raccoon Creek is a tributary to the Pecatonica River just upstream from its confluence with the Rock River. It is a high quality, “biologically significant” stream in its upper reaches, but the lower mile of the creek was ditched in the early 1970s and cut off from the natural oxbow lake and wetlands located in the floodplain. The ditching caused serious bank erosion and excessive sedimentation in the creek, loss of aquatic habitat for fish, mussels and aquatic insects, down cutting of the stream bed and lowering of the water table in the adjoining riparian wetlands.

Historically, buffalo, walleye and northern pike used the creek to reach the oxbow lakes and riparian wetlands to spawn and raise young. All of the land adjoining the lower segment of the creek was acquired in 2000 by the Natural Land Institute to restore the original forest, prairie and wetlands on the site. An intensive biological and hydrological study of the creek was completed in 2002 to document the baseline condition of the stream before restoration activities began. The survey found that the ditched segment of the creek was devoid of fish and mussels, while the natural stretches upstream supported many aquatic species, including a healthy population of the state threatened Iowa darter, *Etheostoma exile*.

In 2002 the IDNR awarded NLI a \$150,000 grant to restore the creek to its original channel. The grant was matched by funds from the USFWS, the Grand Victoria Foundation and the Illinois Department of Commerce and Economic Opportunity. Engineering plans were completed, permits obtained and 2/3rd of the creek restored in 2004-05. The lower 1/3rd of the creek will be restored in 2006. Restoration of the creek to its original channel has stopped the bank erosion and sedimentation, reversed down cutting of the stream bed, raised the water table in the wetlands and restored habitat for many species of fish, mussels, and other wildlife.

However, fish populations can not return to healthy levels because movement of sport fish and other species between the Rock and Pecatonica rivers and the riparian wetlands and oxbow lake are blocked by three culverts on the creek put in place to provide a crossing to the area south of the creek for farming, and by fill at the outlet of the oxbow

lake that blocks water from flowing out of the lake into the creek. Removing these obstacles to fish migration into and out of the Nygren Wetlands will allow populations of fish and mussels to return to healthy levels in the creek and oxbow lake and increase sport fishes in the Rock and Pecatonica rivers.

OBJECTIVES: The objective of the project is to return healthy populations of fish and mussels to Raccoon Creek by reconnecting the creek to the Pecatonica and Rock rivers and the existing oxbow lake and riparian wetlands along the creek to allow access to spawning and nursery areas in the Nygren Wetland Preserve. This will be accomplished by removing culverts from the creek to allow access to the restored riparian wetlands along the creek, and by installing a fish passage structure at the outlet of the oxbow lake to allow movement of fish into and out of the lake.

EXPECTED RESULTS OR BENEFITS:

It is expected that the restoration and reconnection of Raccoon Creek to the wetlands and oxbow lake in the Nygren Wetland Preserve will result in the repopulation of the creek with many fish and mussel species listed in the Illinois Comprehensive Wildlife Conservation Plan & Strategy, including the state threatened Iowa darter, Creek heelsplitter, Northern pike, muskie, walleye, smallmouth bass, Central mudminnow, Blacknose dace, softshell and snapping turtles. It will also increase the number of sport fish found in the Rock and Pecatonica rivers.

The restoration of Raccoon Creek will help to implement three Priority Conservation Strategies from the Plan: 1. Protect, restore and enhance riparian and land-water transition vegetation; 2. Protect, restore and enhance in-stream habitats and processes, and; 3. Restore populations of imperiled and extirpated aquatic fishes and mussels. The results will be measured by re-sampling the fish and mussel populations one year after the project is completed to compare with the baseline survey done in 2002.

The Nygren Wetland Preserve is maintained as a fish and wildlife refuge. The area is open to the public for hiking, nature study and wildlife observation. Classes from nearby schools use the creek for field studies, and home school students do aquatic studies in the creek. The Rock and Pecatonica rivers are popular with sport fishermen. The Rock River in this location is considered the best walleye fishery in the state. Muskies are also taken from this part of the river. Fishing access is provided at the Rockton dam and from nearby forest preserves.

APPROACH: Phase 1 of the creek restoration was completed during the spring of 2005; Phase 2 of the restoration will be done during the winter and spring of 2006. Removal of the culverts and construction of the fish passage structure will be done as the final phase of the restoration project, once engineering plans are completed and permits are secured.

The existing creek crossing and culverts will be removed and concrete footings will be placed on the sides of the creek to hold a new, open span structure. Erosion control measures will be taken during grading and excavation to prevent sedimentation in the

creek. A fish passage structure will be installed at the outlet of the oxbow lake that will allow water levels in the lake to be controlled. Erosion control measures will be put in place during grading and excavation of the structure. All disturbed earth will be seeded with a mix of native wetland species. Construction activities will be overseen by the consulting engineer and the Project Manager.

LOCATION: The project will take place within the Nygren Wetland Preserve, 2810 W. Rockton Road, Rockton, Illinois, Section 22, T. 46 N, R 1 E, 3 PM, Winnebago County, Illinois. The Natural Land Institute owns the preserve.

ESTIMATED COST:

	<u>Federal</u>	<u>Match</u>	<u>Total</u>
<u>Contractual</u>			
Engineering Design & Permit Fees	\$ 6,350	\$ 6,350	\$ 12,700
Engineering Observation Fees	\$ 4,220	\$ 4,220	\$ 8,440
Remove & Replace Creek Crossing	\$37,650	\$37,650	\$ 75,300
Construct Fish Passage Structure	\$ 4,700	\$ 4,700	\$ 9,400
Contingency @ 12%	\$ <u>5,080</u>	\$ <u>5,080</u>	\$ <u>10,160</u>
	\$58,000	\$58,000	\$116,000

PERSONNEL: The site manager for the Nygren Wetland Preserve, Andrew Bacon, will be the Project Manager. He managed the creek restoration project. An ecological engineering firm will be hired to complete the engineering specifications, prepare permit applications and oversee the construction of the project. Karen Rivera, IDNR will provide oversight to ensure that the goals and objectives of the project are addressed.

COMPLIANCE: The Fish Passage Structure has already been permitted as part of the creek restoration and has complied with all state and federal requirements. Removal of the existing creek crossing and construction of a new crossing will require a U.S. Army Corps of Engineers Sec. 404 Permit, Illinois EPA 401 Water Quality Certification, state and federal endangered species review, state and federal wetlands mitigation and floodplain compliance, and a review of the effect of the project on archeological resources. A Phase 1 archeological survey has already been completed for the project, but approval of the Illinois Historic Preservation Officer will be needed for the modified structures. It is expected that construction of the footings for the creek crossing structure will be allowed under a U.S. Army Corps of Engineers Nationwide Permit. The Corps will determine if an environmental assessment or EIS is needed.

GRANT PROPOSAL SUPPORT DOCUMENTATION:

The following documents are attached in support of this grant proposal:

1. Application for Federal Assistance (Standard Form 424)
2. Grant Proposal – Budget Information
3. Federal Aid Section 7 Evaluation Form
4. NEPA Compliance Checklist
5. U.S. Department of Interior, Part E: Certification Regarding Lobbying