

Fish Habitat Grant

Funded
\$ 1st
2018 Dec



Stream Barb Habitat at Interstate Park

Mitchell County Conservation Board

November 30th, 2018

Purpose

This project consists of adding six river barbs into the river at Interstate Park in Mitchell County. Interstate Park is a camping park on the upstream side of Mitchell Mill Dam and is a heavily used area with lots of boating traffic and fisherman catching many species of fish. The bank is beginning to erode, and Mitchell County Conservation Board would like to add river barbs to move flow away from the shore and increase fishing opportunities along that shore. The barbs will add fish structure by providing cover and current breaks along the shore. They will also increase depth in the water.

Site Description and Location

Interstate Park location NE ¼ of SW ¼ sec 8-98-17

Lat: 43°19' 08.27" N Lon: 92°52'53.89" W

Mitchell, Iowa 50461

Fish species sampled by Iowa Department of Natural Resources:

Golden Redhorse	Quillback Carpsucker	Orangespotted Sunfish
Carmine Shiner	White Sucker	Northern Logperch
Shorthead Redhorse	Northern Hog Sucker	River Redhorse
Smallmouth Bass	Rock Bass	Common Shiner
Spotfin Shiner	Gravel Chub	Blackside Darter
Banded Darter	Hornyhead Chub	Ozark Minnow
Sand Shiner	Green Sunfish	River Carpsucker
Common Carp	Slenderhead Darter	Johnny Darter
Bluntnose Minnow	Silver Redhorse	
Black Redhorse	Stonecat	

Other species known to be caught are:

Crappie
Large Mouth Bass
Walleye
Channel Catfish
Northern Pike

Benefits

River barbs are designed to keep flow off the bank, reducing erosion. The flow is moved to the end of the barb, eventually building sediment in the space between the barb and the riverbank, encouraging more riverbank into the river. The barbs also build structure upstream for fish habitat. It will make a scour hole downstream from the barb, which will increase the diversity and quantity of fish that will be able to utilize that habitat. Velocity shelters are generated during high flow events and scour pools below the end of each structure are created during low flow events. Logs with root balls will be included with the barbs to provide in-stream cover for fish and food for aquatic invertebrates. All of the barbs will be within casting distance from shore, which increases the fishing quality and quantity in this already highly used park. The barbs will also greatly reduce sediment entering into river and increase water quality by preventing erosion.

Approach

The construction of each barb begins with excavating riverbed material to key-in the structure. Rip rap rock will be used to key the structure into the bank. The rest of the barb will be placed at a 30-50-degree angle, upstream from the bank. Logs with root balls will be placed in the barb. The barb will be nine feet at the base and will gradually taper to three feet exposed above water line. The entire barb will be about 10 feet long, with five feet extending into the river and five feet into the riverbank.

Figure 1: Location of Barbs Along Riverbank

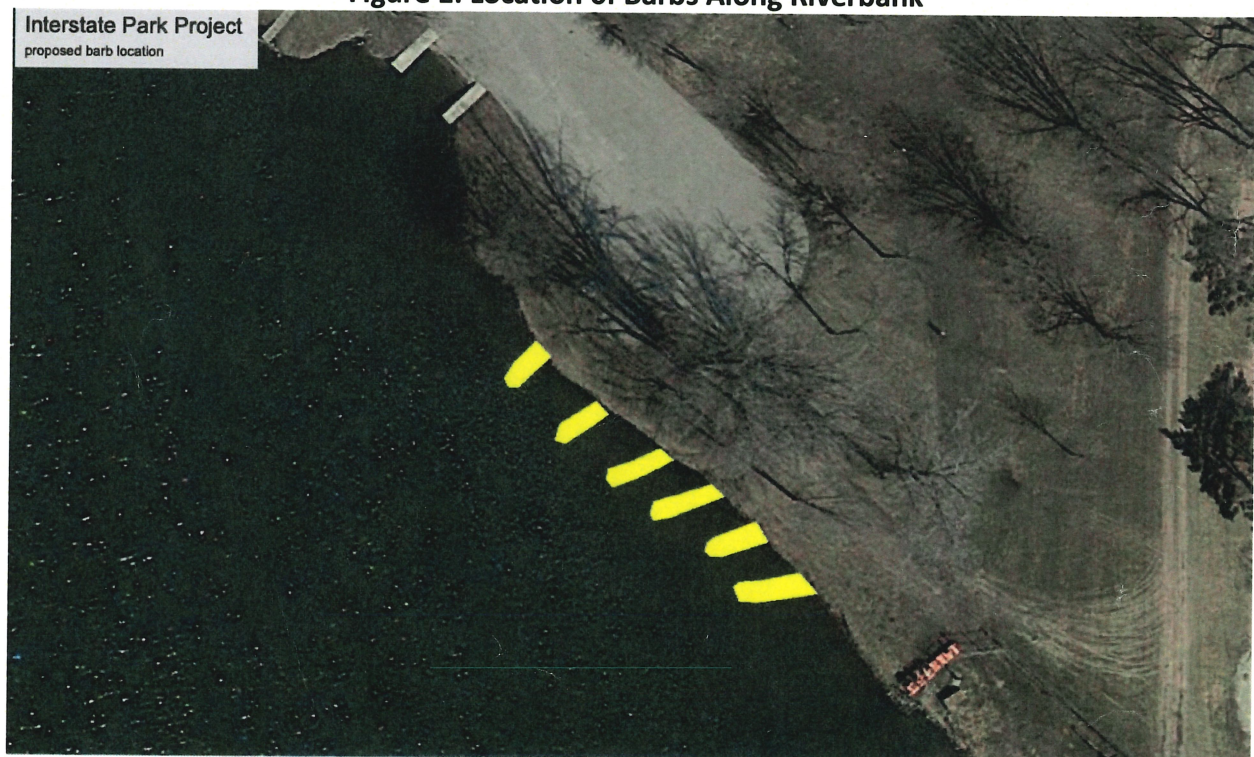
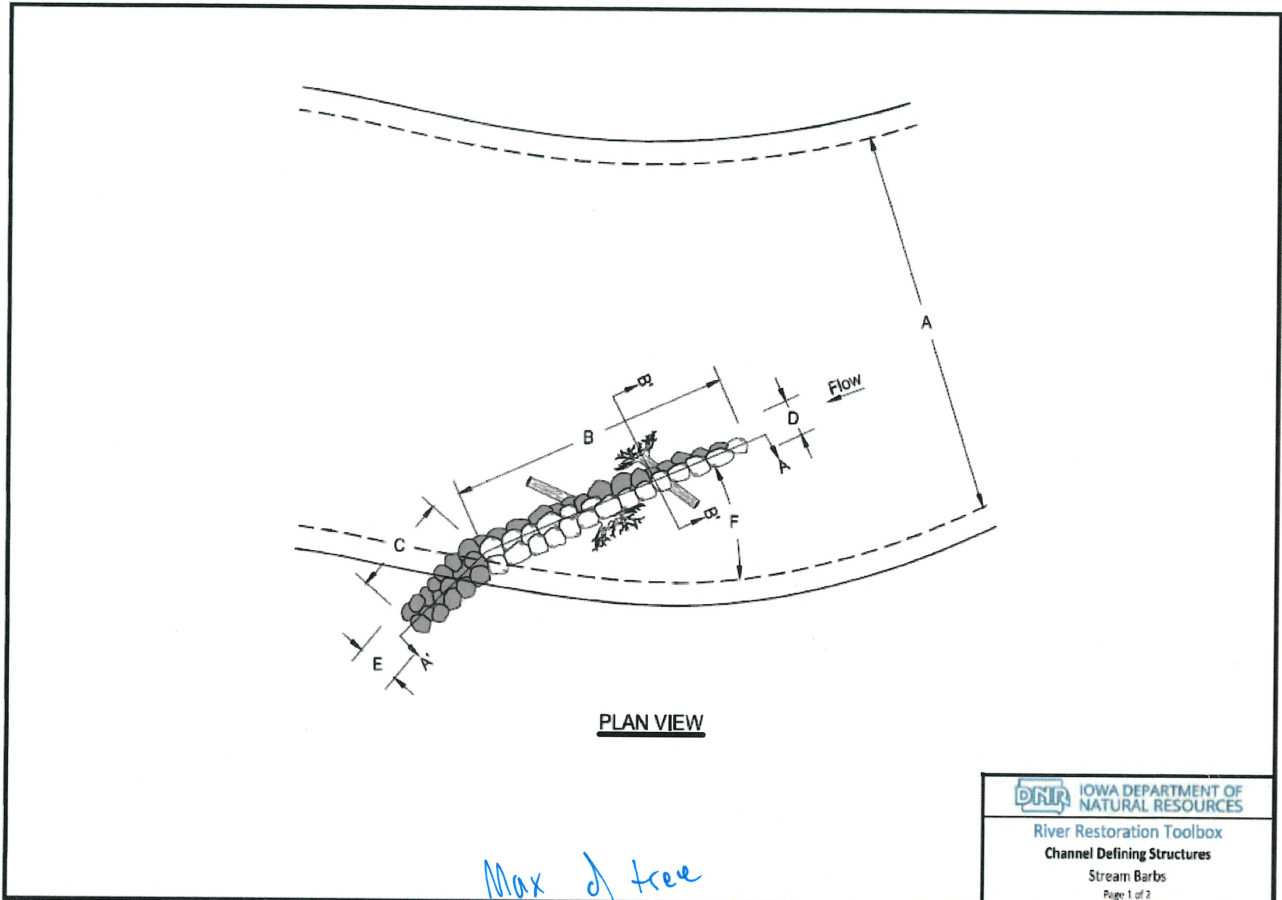


Diagram 1: Barb Top View

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Channel Defining Structures
April 2018

Drawing 5. Stream Barbs

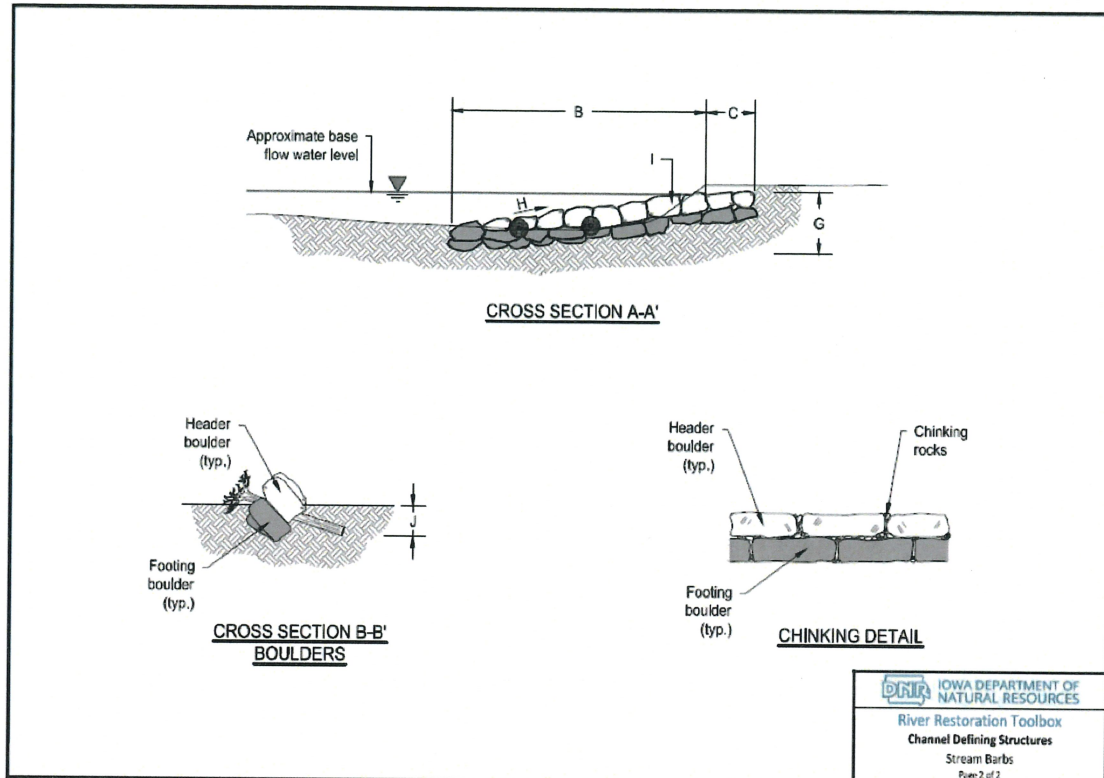


Max of tree
location of tree
Spacing between barbs

Diagram 2: Side View of Barb

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Channel Defining Structures
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Permits

Permits will be applied for upon approval of the grant.

Collaboration with DNR

To develop this grant, Mike Siepker, DNR Fisheries Management Biologist, Theresa Shay, Natural Resource Tech. II, and Mitchell County Conservation Board have been collaborating since the middle of September via phone and a site visit in on October 23.

Cost

Placement of Barbs: $\$180/\text{barb} \times 6 \text{ barbs} = \$1,080.00$

Offsite tree removal and Hauling= $\$500.00$

Rip Rap : $35 \text{ ton}/\text{barb} \times \$33.75/\text{ton} \times 6 \text{ barbs} = \$7,087.50$

Project Total= $\$8667.50$

Figure 4: Site Map, City View

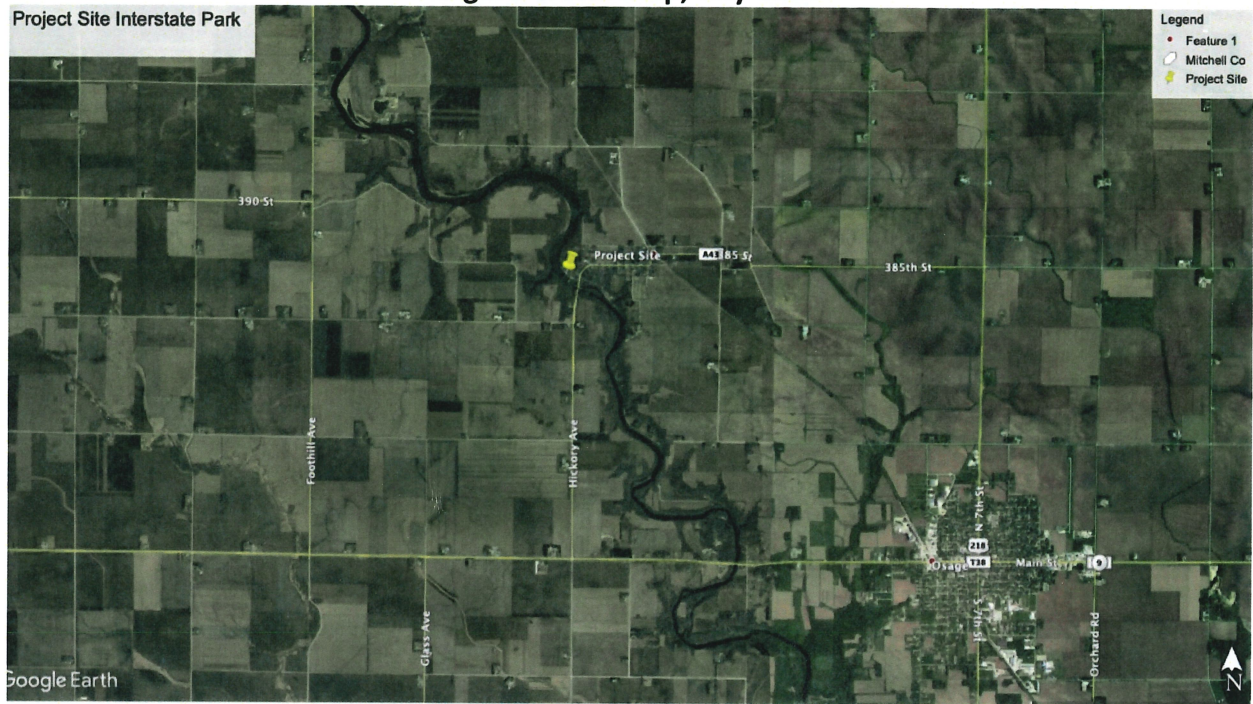


Figure 5: River Bank Erosion, View 1



Figure 6: River Bank Erosion, View 2



Figure 7: River Bank Erosion, View 3



Figure 8: River Bank Erosion Near Dam, View 4



Figure 9: River Bank Erosion Near Dam, View 5







