

ENVIRONMENTAL ASSESSMENT
STREAMBANK EROSION CONTROL PROJECT
ON THE MISSOURI RIVER

Prepared by
Montana Fish, Wildlife & Parks
July 1, 1997

GENERAL PURPOSE:

This project was specifically directed by "line item" contained in HB5 of the 1997 Legislative Session.

BACKGROUND:

This reach of the Missouri River is difficult to access. Between the mouth of the Judith River and Fort Peck Reservoir, there are only two bridges, two ferry crossings and a few vehicle trails. Most of the entry into this remote 85 mile reach of river is provided through river floating access. The Missouri River at this point is a large, low gradient stream. The average annual flow is 9,415 cfs. The stream gradient varies between 2.9 feet per mile on the upper end of the reach to 1.0 feet per mile near Fort Peck Reservoir.

Unlike the many of Montana's more well known streams in the western part of the state, the Missouri at this location is a warmwater fishery. The most widely distributed gamefish are sauger, shovelnose sturgeon, channel catfish, burbot and paddlefish.

This portion of the river includes the rugged breaks country and 62 miles of the Upper Missouri National Wild and Scenic River. This reach supports considerable recreational use because of its nationally renowned beauty and wilderness qualities.

The campground located adjacent to the eroding streambank is operated by the Bureau of Land Management through a perpetual easement (six months per year) with Mr. John Pavlovick. This site is the most heavily used access point for the Wild and Scenic float. Use levels at the campground are estimated to be 1,371 recreationist day per year (five year average) - many of the users are anglers.

The PN Bridge is the only year round crossing of the Missouri River for 130 miles. Bridge use has been estimated 70 crossings per day for an annual total of 25,550. The campground and river access points are located on opposite sides of the bridge

Ice conditions and recent high flow years have accelerated bank erosion to a point of concern. Loss of portions of the campground have occurred.

The county secured a "Renewable Resource Grant" from the Department of Natural Resources in 1994 to complete the project. This \$50,000 grant was determined to be insufficient to complete the job as desired. The 1997 Legislative session appropriated \$75,000 of Fish, Wildlife and Parks funds to complete this project, for a total of \$125,000.

Chouteau

I. DESCRIPTION OF THE PROPOSED ACTION:

The present situation at this location is one of near vertical eroding banks 6 to 9 feet high. There is a total of 843 feet of rip-rap above the bridge and 270 feet below the bridge. With the continuing discharge of sediment from the Judith River - just a half mile upstream - normal stream flows will continue to cause erosion of the north bank of the Missouri.

Rock rip-rap installed when the bridge was built has maintained stability over the last 15 years. There appears to be no indication of stream bottom degrading. The only problems appear to result from lateral migration of the channel which is occurring at an accelerated rate, due to the filling of the conveyance area by Judith River sediments.

The proposed action will do the following:

- 1) install a total of 1,113 feet of Class II and III rock rip-rap on the eroding banks,
- 2) the finish slope of the rock face will be 2:1,
- 3) the average vertical bank height is 16.25 feet,
- 4) the rock face will average about 33 feet in length - including the "key" excavated into to the river bottom to protect this work from bottom scour,
- 5) the up and down stream ends of the rock work will be "keyed" into the bank to prevent the river from working behind the protected face, and
- 6) the portion of the rock work above the normal base flow elevation will be filled with soil and planted with native grasses to improve floater use of the site.

This work is tentatively planned for implementation during the fall of 1997.

A. Location of Project

The erosion control project is located within Township 23 North, Range 16 East, Section 25 of Chouteau County. The bank to be rip-rapped is in two separate sections adjacent to the bridge (843 feet above, 270 feet below). The most commonly traveled route to the site is via State Highway #236, 44 miles southeast of Big Sandy, Montana.

B. Project Benefits

The immediate benefit of this bank protection project is to stop the erosion of the public campground. Additionally, the conversion of the vertical eroding bank to a more gradually sloping bank, should improve the general safe utility of the site.

The fishery values related to this project are associated with angling advantages. Forage fish have been shown to heavily utilize the protection offered by rock rip-rap. The improve abundance of forage fish assures an improved presence of predatory game species.

II. IMPACTS TO THE PROPOSED ACTION

Please review the attached checklist. The proposed project will restore the eroding river bank adjacent to the campground and the PN Bridge on the Missouri River.

A. Impacts to the Physical Environment

1. Terrestrial & Aquatic Life and Habitats

Completion of the proposed bank protection will provide a solid mat of vegetation where there presently is a "raw" eroding vertical face. This will likely provide some desirable vegetation for wildlife, mainly as a travel route for small species (mink, raccoon and other species strongly associated with riparian vegetation).

The bank protection will insure that the grove of large black cottonwood trees will not be lost to erosion by the river. This is seen as a temporary solution to the larger scale problem of reduced cottonwood regeneration. Cottonwood regeneration appears to be the result of flow and sediment regimen, which have been impacted by large upstream reservoir operations. The reduced cottonwood regeneration is not localized, but system-wide throughout most of western regulated rivers.

Benefits to the river fishery are seen as moderately positive. As noted earlier, the distribution of forage species will be altered by the presence of the rock rip-rap. As the abundance of forage fish increases, the presence of predatory game species will likely increase.

2. Water Quality, Quantity and Distribution

The expected construction period (fall 1997) is during the normal low flow period of the year. Work during this period will minimize the amount of work done under wet conditions. The bank re-shaping will mainly occur above the waterline and thereby contribute minimal sediment to surface waters.

Excavation of the river bottom "key" trench and the base slope work will be done in the wet and thereby add sediment to the river. Short-term increases in turbidity will result from some aspects of the project. A short-term exemption from water quality standards may be necessary. Whatever conditions the Water Quality Division places on the permit, will be followed.

3. Geology and Soil Quality, Turbidity and Moisture

No effects on the areas geology are expected to occur above the active high-water mark. Once vegetation is established, it should act as a "filter mat" and help hold soil on upland areas.

The effects of this project on the geology below the high-water mark are to curtail sediment contribution from the eroding bank to the riverine situation. This localized sediment reduction immediately downstream from the deposition zone of the Judith River should have minimal impact on the sediment budget of this reach of the river.

The "hard point" created by the rock rip-rap to be installed should stop the migration of the channel to the north. Sediment deposition in the Missouri River from the Judith will not change after this project. A likely adjustment will be a longer/more narrow deposition zone. Some channel aggradation above the site can be expected. There will also likely be some slight change in water velocities. The system-wide impacts are expected to be minimal.

4. Vegetation Cover, Quantity and Quality

This project should prevent the loss of any more cottonwood trees from the campground area. The rock rip-rap installation planned includes the addition of soil to the upper areas, which will accommodate improved riparian plant regeneration. The process of vegetative plant recovery will require several years, but should progress in a predictable fashion as long as the bank is not subjected to excessive human trampling or livestock abuse.

5. Aesthetics

The aesthetics of the riparian area are presently quite good, except for the visual appearance of 1,113 feet of eroding bank. The general appearance of the stream corridor and campground area will be much improved once this bank erosion is corrected.

7. Unique, Endangered, Fragile, or Limited Environmental Resources

FWP regional staff were contacted for pertinent information regarding whether any federally listed threatened species or their critical habitats would be impacted by this project. The following species are currently listed for Montana: Black footed ferret, gray wolf, grizzly bear, Eskimo curlew, interior least tern, piping plover whooping crane, bald eagle, peregrine falcon, pallid and white sturgeon.

The only threatened and endangered species use noted by regional personnel was that of the bald eagle during the seasonal migrations and the pallid sturgeon. The current state list of bald eagle nesting territories does not reveal any project conflicts.

Numbers of pallid sturgeon are extremely low and their known distribution includes the proposed project area - in general. The season of the proposed project and the duration of the work (approximately 30 days) are not seen as a threat to the species.

9. Historical and Archaeological Sites

The proposed activity will be confined to those areas of the stream channel that have been disturbed by fluvial process of the stream and/or the process of grazing.

Since the entire area is located on privately owned property and the changes occurred as a result of natural process, this action does not appear to meet the definition of an "undertaking" as described in the state antiquities act.

The proposed project work will be entirely occurring within the floodplain. This work will require a Army Corps of Engineers "404" permit, therefore necessitating compliance with the federal historic preservation regulations. It is believed, given the present condition of the area, that there exists little likelihood of impacting any cultural materials.

The project area is near (opposite bank) the old Judith Landing steamboat site and within the Judith Landing Historic District. Camp Cooke and Fort Chardon sites are in the general area. A cultural survey will be conducted during this public review period by the NRCS archaeologist. The State Historic Preservation Office will be contacted for there interpretation of the results of this work.

B. Impacts to the Human Environment

4. Agricultural or Industrial Production

The bank protection which will extend the existing 330 feet of rip-rap an additional 1,113 feet will likely have the secondary benefit of protecting the bridge. This bridge provides the only year round Missouri River crossing for 130 miles and is essential to these agriculture producers. Present estimates of bridge crossings are put at 25,550 per year.

5. Human Health

The PN Bridge crossing is needed by the dispersed ranching community to access medical care from their remote residences. The bridge integrity appears to be viewed by local residents as essential to their chosen life style.

6. Quantity & Distribution of Community & Personal Income

The PN Bridge provides access to population centers for the ranching community located in this very remote area. The vast majority of people living in this vicinity make their living producing agricultural commodities. This bridge serves as a vital link and the most cost effective route to marketing their commodities.

7. Access to & Quality of Recreational and Wilderness Activities

The PN Bridge campground is used by floaters mainly using the Wild and Scenic portion of the Upper Missouri River. The presence of the bridge allows access to this put-in by users via both south and north routes.

Angling within this reach of the Missouri River (section 6A) was estimated to be 6,662 user days for all of 1996. This reach of the Missouri extends from the mouth of the Marias River downstream to the Chouteau/ Blaine County line. There are three public crossings and two dead-end roads within this reach. A gross estimate of the fishing pressure attributable to the PN area was set at 1,662 angler days per year (25% of the reach pressure). Although this amount of angling pressure does not appear high when compared to western Montana waters, this is a significant amount of fishing for the eastern part of the state.

14. Transportation Networks & Traffic Flows

See paragraphs 4, 5, 6 and 7 above.

III. DISCUSSION AND EVALUATION OF REASONABLE ALTERNATIVES

A. The "No Action" Alternative

If this project is not completed, the following consequences are likely to result:

- The north bank of the river adjacent to the bridge and campground will continue to erode,
- the cottonwood trees within the campground will continue to be lost to the lateral migration of the Missouri River channel,

- if the erosion proceeds far enough, the rock rip-rap protecting the bridge abutments may be threatened,
- recreational use of the streambank adjacent to the campground will be limited by the vertical eroding faces, and
- safety will continue to be an added concern because of the vertical bank adjacent to the river.

B. The Proposed Alternative

The proposed project will result in the following:

- the north bank erosion will be curtailed,
- the remaining cottonwood trees within the campground will be saved from continued lateral channel migration of the channel,
- the bridge abutments will be protected even further than they presently are,
- recreational use of the campground and streambank area will be much more hospitable with a vegetated sloped bank, and
- safety concerns surrounding the present vertical bank adjacent to the river will be resolved.

IV. ENVIRONMENTAL ASSESSMENT CONCLUSIONS SECTION

A. Is an EIS required? No

This review has clearly demonstrated that the impacts associated with this project are not significant. The net result of the proposed action are seen as beneficial to recreationists using the campground and local residents.

B. Describe the level of public involvement.

The project was reviewed and supported by the House of Representatives in the 1997 session.

The Environmental Assessment is being distributed to all individuals and groups listed on the cover letter.

This project has been discussed extensively at Chouteau and Fergus County Commission meetings over the last four years.

C. Duration of comment period?

Public comment will be accepted through 5 p.m. on July 31, 1997.

D. Name, Title, address and phone number of the person responsible for preparing the Environmental Assessment:

Bruce J. Rehwinkel
Habitat Protection Bureau
Fisheries Division
1420 East Sixth Avenue
P.O. Box 200701
Helena, MT 59620-0701

(406) 444-2432

MONTANA FISH, WILDLIFE AND PARKS
 1420 E 6th Ave, PO BOX 200701, Helena, MT 59620-0701
 (406) 444-2432

ENVIRONMENTAL ASSESSMENT

Project Title Missouri River Bank Protection Project

Division/Bureau Fisheries Division / Habitat Protection Bureau

Description of Project: The PN Bridge bank protection project is simple erosion control. The work is located on the north bank, upstream from the bridge and adjacent to the public campground. Sediment deposition immediately below the mouth of the Judith River is forcing the river channel to erode the streambank at the campground and threaten the integrity of the bridge abutment. The work will consist of rock rip-rap, placed at a finished slope of 2:1 with the upper margins of rock filled with soil and revegetated.

POTENTIAL IMPACT ON PHYSICAL ENVIRONMENT

	Major	Moderate	Minor	None	Unknown	Comments On Attached Pages
1. Terrestrial & aquatic life and habitats			X			
2. Water quality, quantity & distribution			X			
3. Geology & soil quality, stability & moisture			X			
4. Vegetation cover, quantity & quality			X			
5. Aesthetics			X			
6. Air quality				X		
7. Unique, endangered, fragile, or limited environmental resources			X			
8. Demands on environmental resources of land, water, air & energy				X		
9. Historical & archaeological sites				X		

POTENTIAL IMPACTS ON HUMAN ENVIRONMENT

	Major	Moderate	Minor	None	Unknown	Comments On Attached Pages
1. Social structures & mores				X		
2. Cultural uniqueness & diversity				X		
3. Local & state tax base & tax revenue				X		
4. Agricultural or industrial production			X			
5. Human health			X			
6. Quantity & distribution of community & personal income			X			
7. Access to & quality of recreational and wilderness activities			X			
8. Quantity & distribution of employment				X		
9. Distribution & density of population & housing				X		
10. Demands for government services				X		
11. Industrial & commercial activity				X		
12. Demands for energy				X		
13. Locally adopted environmental plans & goals				X		
14. Transportation networks & traffic flows			X			

Other groups or agencies contacted or which may have overlapping jurisdiction NRCS, Choteau County Commissioners, Fergus County Commissioners, BLM, Army Corps of Engineers

Individuals or groups contributing to this EA: NRCS, BLM, Linda Williams - Chouteau County

Recommendation concerning preparation of EIS No EIS Required

EA prepared by : Bruce J. Rehwinkel

Date: July 1, 1997



SMALL SIDE CHANNEL

PARK AREA

BRIDGE

ISLANDS

MISSOURI RIVER FLOW

JUDITH RIVER

GENERAL SKETCH MAP

PN FERRY BRIDGE AND
SURROUNDING AREA

— NOT TO SCALE —

FALL 1982

D.R. REICHMUTH

Relationship of Judith River to PN Campground
Causes high sediment deposit and forces Missouri River into
north bank and campground