

**Montana Department
of
Fish, Wildlife & Parks**



May 3, 1996

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Dept. of Environmental Quality
Dept. of Fish, Wildlife & Parks
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Region 3 - Supervisor
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Resource Assessment
Dennis Flath

Montana Historical Society, State Historic Preservation Office
Montana State Library
Montana Environmental Information Center
Montana Audubon Council
Madison Conservation District
Madison County Commissioners
Terry Quirk, Madison River Ranch
John Bausch
Jerry DiMarco
Glen Hockett
Corps of Engineers
U.S. Fish and Wildlife Service
Environmental Protection Agency

Ladies and Gentlemen:

Please find enclosed an Environmental Assessment prepared for a Future Fisheries Improvement tentatively planned for a habitat enhancement project on Madison Spring Creek, located near Quake Lake.

Detailed project plans are on file at Montana Fish, Wildlife and Parks in Helena. Please submit any comments that you may have by May 28, 1996.

Sincerely,

Glenn R. Phillips, Chief
Habitat Protection Bureau
Fisheries Division

Madison

**MONTANA FISH, WILDLIFE AND PARKS
FISHERIES DIVISION**

ENVIRONMENTAL ASSESSMENT

**IMPLEMENTATION OF A FUTURE FISHERIES PROJECT
ON AN UNNAMED SPRING CREEK, TRIBUTARY TO THE MADISON RIVER**

General Purpose: The 1995 Montana Legislature enacted statute 87-1-272 and 273, MCA which directs the Montana Fish, Wildlife and Parks (FWP) to provide funding for the restoration of essential habitats for the growth and propagation of wild fish populations in lakes, rivers and streams. The legislation established a one-time funding account to ensure that this function would be accomplished. The proposed project described herein is one of 39 project applications submitted to FWP by the February 1, 1996 deadline. This proposed project is intended to restore the naturally functioning stream channel and riparian areas of a unnamed spring creek that is a tributary to the Madison River.

Background: The Madison Valley Ranch Association, in conjunction with Interfluve, Inc., has applied for funding for a Future Fisheries Project. This proposed project is intended to restore and enhance spawning and rearing habitat on 2,500 feet of an unnamed spring creek that flows into the Madison River downstream of Quake Lake Dam (Figure 1). The spring creek is degraded as evidenced by an absence of woody riparian vegetation, over-widened and shallow cross sections of the active channel, eroding stream banks, channel headcutting from the failure of an instream man-made dam and substantial deposition of fine sediment.

The primary benefit of this proposed project would be improved spawning and rearing habitat for rainbow trout and brown trout that migrate from the Madison River. The proposed habitat work is not designed to substantially improve fishing within the tributary itself. A level of uncertainty currently surrounds trout populations in the Madison River due to the presence of "whirling disease". Although there are no simple solutions, any action that increases the diversity of spawning habitat for Madison River trout populations, such as this proposed project, may well provide fisheries benefits in spite of the impacts of "whirling disease".

I. Location of Project

The proposed project is located on an unnamed spring creek within Township 11 South, Range 2 East, Section 31 of Madison County. This spring creek arises near the historic town of Cliff Lake, Montana and flows for approximately one mile before entering the Madison River downstream of Quake Lake Dam. Specifically, the project is proposed for the lower 2,500 feet of stream located on property within the Madison Valley Ranch Association.

Madison River Ranch Association
Spawning Channel and Pond Restoration
Cliff Lake, Montana

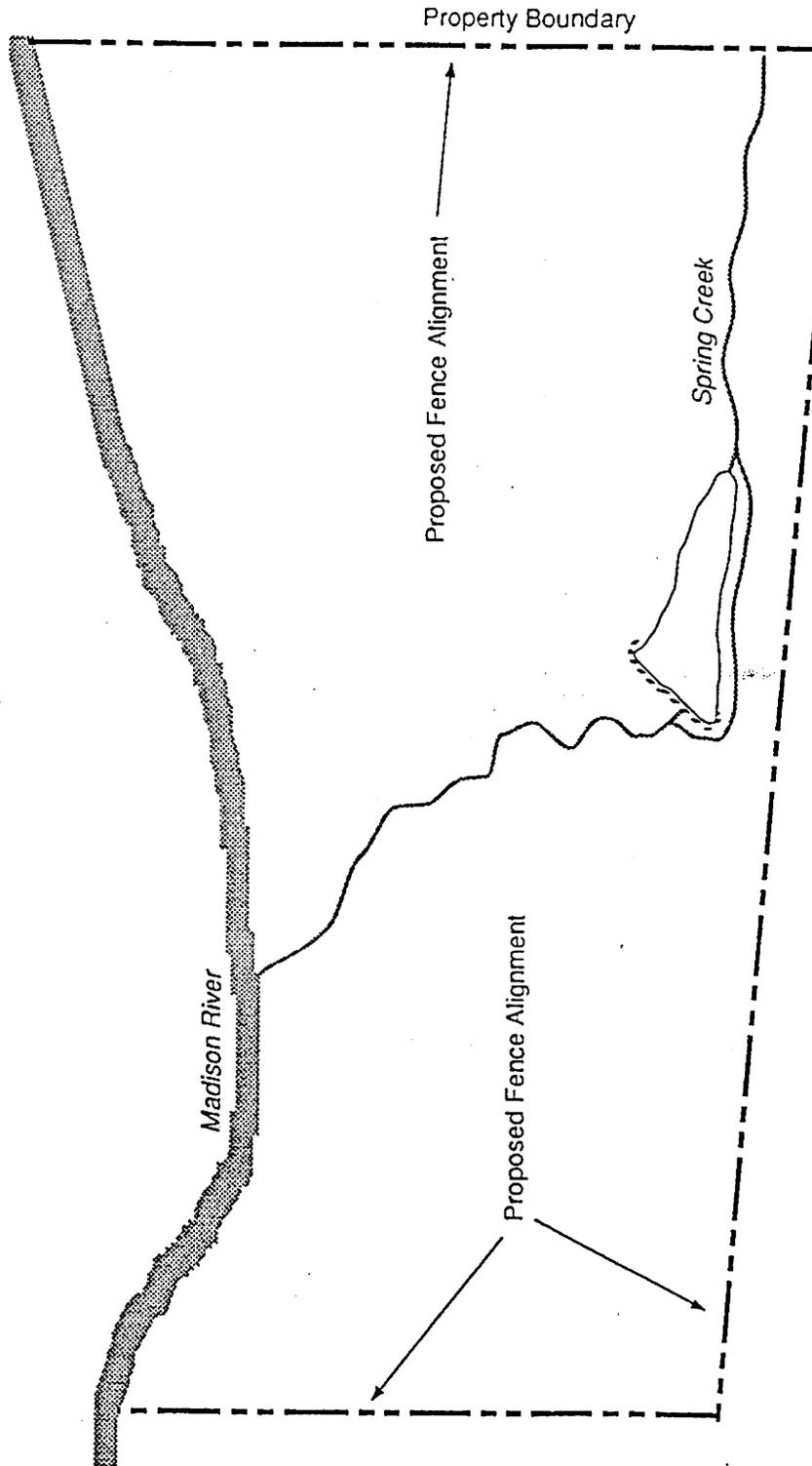


Figure 1. Map of Unnamed Spring Creek.

II. Need for the Project

The 2,500 feet of spring creek flowing through the Madison Valley Ranch Association property is in a degraded condition due to past grazing practices and to an in-channel pond that has begun to fail, resulting in headcutting of the channel. This in-channel pond has also acts as a fish passage barrier. Past grazing practices have resulted in collapsed stream banks, excessive widening of the stream channel and loss of riparian vegetation. Restoration and enhancement of this spring creek channel would provide enhanced spawning and rearing habitat for rainbow trout and brown trout that migrate from the Madison River.

III. Scope of the Project

The proposed project includes bank stabilization, construction of a bypass channel around the instream pond, spawning and rearing enhancement, riparian plantings and riparian fencing. Restoration and enhancement of the spring creek would be performed on a reach by reach basis. Riparian fencing and an overall grazing management plan by the Madison Valley Ranch Association will eliminate grazing impacts in the riparian zone. The proposed work has been divided into four stream reaches (Figure 2). Specific treatments are proposed as follows:

REACH 1 is characterized by an over-widened stream channel, poorly defined stream banks and sparse stream bank vegetation. Proposed enhancement would include narrowing and deepening the stream channel and creating gravel beds for spawning habitat. Enhancement work would be accomplished by selectively excavating within the existing channel to increase depth where appropriate and placing excavated materials along the channel margins to narrow the over-widened portions of the stream channel. Excavated materials placed along the stream margins would be retained by installing biologs or straw bales planted with willow cuttings. Gravel would be imported and installed in the tailouts of existing or excavated pools at five to seven locations within the reach for spawning habitat enhancement.

REACH 2 encompasses the man-made pond located on the active stream channel. Proposed enhancement would include the construction of a by-pass channel around the existing pond. This bypass channel would be created by excavating a dry channel that presently exists around the pond. Channel slope would be adjusted to eliminate the present headcutting and sediment deposition problems found within the reach. Appropriately spaced pools and tailouts would be created within the bypass channel and gravel would be imported and placed on pool tailouts for spawning habitat enhancement. Stream banks would be stabilized with biodegradable fabric and vegetated with native plant species. Any excess fill

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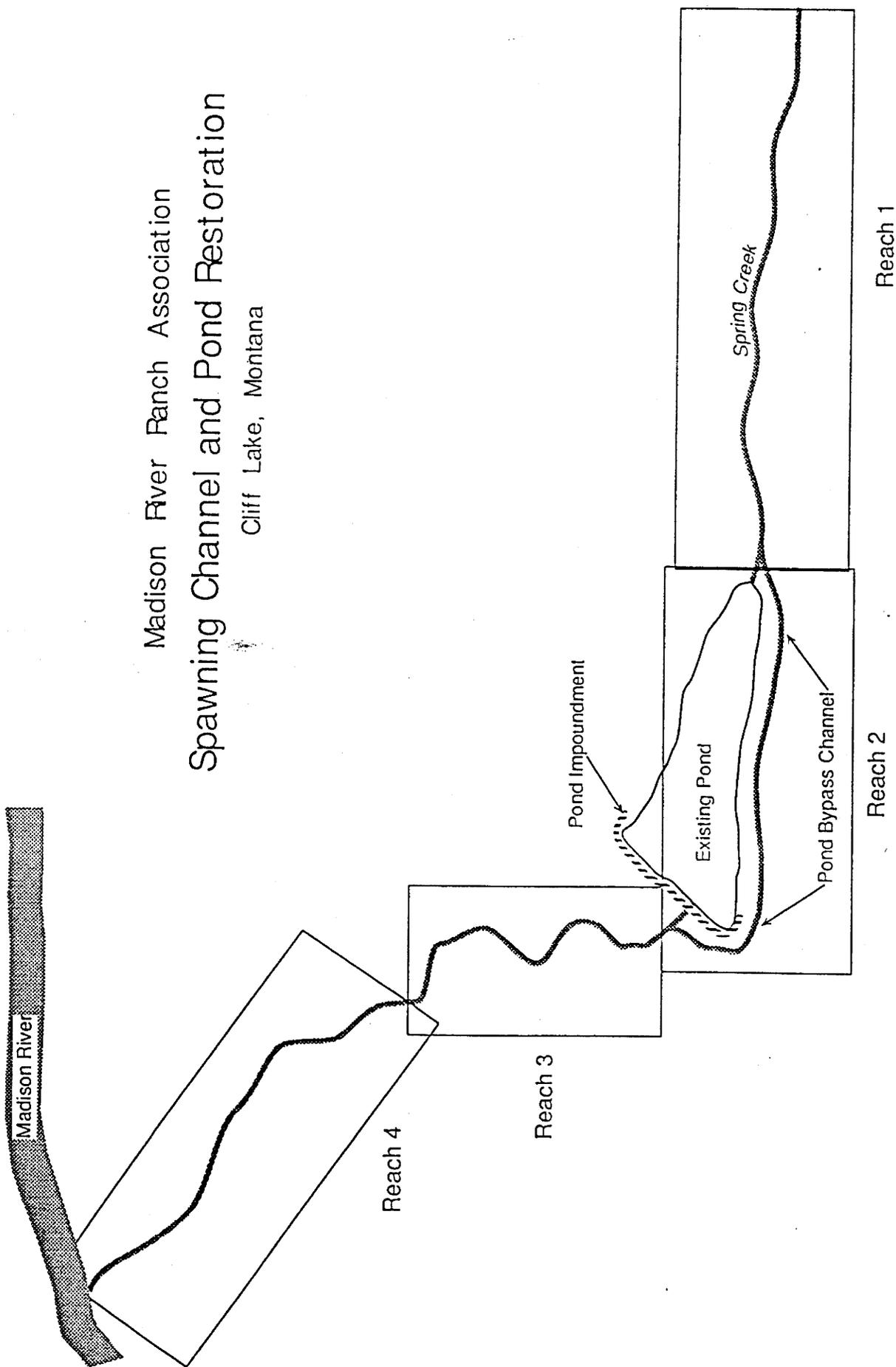


Figure 2. Map of Unnamed Spring Creek showing reaches.

excavated from the reach would be used as necessary in other aspects of the project.

REACH 3 consists of approximately 400 feet of stream channel located downstream of the in-channel pond. This reach of stream is in relatively good condition with the exception of 100 feet of eroding bank. Proposed work includes minimal channel manipulations by placing gravel on two or three appropriate sites for spawning habitat enhancement, re-contouring the eroding stream bank to a stable slope and planting riparian vegetation.

REACH 4 is a higher gradient section of stream with scattered in-stream boulders that has appropriate channel dimensions and is in good condition. Proposed enhancement work would focus on improving access for upstream trout migrants by creating step pools, resting areas and riparian cover. The work would be confined to minor channel modifications and boulder re-arrangement.

IV. Environmental Impact Checklist

POTENTIAL IMPACT ON PHYSICAL ENVIRONMENT

	Major	Moderate	Minor	None	Unknown	Comments On Attached Pages
1. Terrestrial & aquatic life and habitats			X			X
2. Water quality, quantity and distribution			X			X
3. Geology & soil quality, stability and moisture			X			X
4. Vegetation cover, quantity and quality			X			X
5. Aesthetics			X			X
6. Air quality				X		
7. Unique, endangered, fragile, or limited environmental resources				X		
8. Demands on environmental resources of land, water, air and energy				X		
9. Historical and archaeological sites				X		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			X
5. Human health				X		
6. Quantity & distribution of community & personal income				X		
7. Access to & quality of recreational and wilderness activities			X			X
8. Quantity & distribution of employment				X		
9. Distribution & density of population & housing				X		
10. Demands for government services				X		X
11. Industrial & commercial activity				X		
12. Demands for energy				X		
13. Locally adopted environmental plans & goals				X		
14. Transportation networks & traffic flows				X		
15. Site Specific Modification System wide				X		

Other groups or agencies contacted or which may have overlapping jurisdiction Madison County Conservation District, Madison/Gallatin Chapter of Trout Unlimited

Individuals or groups contributing to this EA None

Recommendation concerning preparation of EIS No EIS required

EA prepared by: Glenn Phillips

Date: April 18, 1996

V. Explanation of Minor Impacts to Physical Environment

1) Terrestrial & Aquatic Life Habitats

Currently, this spring creek is not functioning as a healthy hydrological system. The man-made pond is hindering the movement of sediment and past grazing practices have changed stream channel morphology by breaking down stream banks and removing riparian vegetation. Portions of the present channel are unnaturally wide and shallow and contain excessive amounts of fine sediment.

The proposed project would restore the morphology of the channel, eliminate the impacts of grazing, enhance the riparian vegetation and bypass the in-channel pond. The actions would act to restore the stream to a condition where salmonids could successfully spawn.

2) Water Quality, Quantity and Distribution

Short term increases in turbidity will occur during project construction. Any requirements made by the Water Quality Division will be followed. Construction activities will be conducted in such a manner as to minimize disturbances to the stream bank and bed. Proposed actions will act to stabilize the stream channel and re-establish riparian vegetation resulting in improved water quality over the long term.

3) Geology and Soil Quality, Turbidity and Moisture

No effects on geology and soils are expected outside of the active stream channel. The proposed work would restore and stabilize the natural stream morphology, reduce stream bank erosion and reduce fine sediment that has accumulated in the stream bottom.

4) Vegetation cover, Quantity and Quality

The proposed project would act to restore the riparian vegetation by stabilizing stream banks, planting willow cuttings and excluding grazing with riparian fencing. Improvements to the riparian community would add increased stability to the stream corridor.

5) Aesthetics

The restoration of stream morphology and the riparian community will improve the aesthetics of the stream corridor.

9) Historical and Archeological Sites

Proposed activities would be confined to the stream corridor. This area is continually being disturbed by fluvial processes and, as such, does not appear to meet the definition of an

"undertaking" as described in the state antiquities act.

VI. Explanation of Minor Impacts to the Human Environment

4) Agricultural or Industrial Production

Exclusion of grazing within the riparian zone using riparian fencing may reduce the property's capacity for livestock.

7) Access to & Quality of Recreational and Wilderness Activities

The proposed project would likely increase public fishing opportunity for wild trout by diversifying spawning habitat for fish in the upper Madison River. The goal of the project is not to enhance fishing within the spring creek. It is anticipated that the proposed project would provide benefits to the Madison River fishery for a minimum of 20 years.

10) Demands for Government Services

This proposed project is seeking funding through FWP's Future Fisheries Improvement Program. This proposal is in competition with other proposals seeking funding. A public review panel examines the cost/benefit ratios before making recommendations to FWP.

VII. Discussion and Evaluation of Reasonable Alternatives

A. The "No Action" Alternative

If no action is taken then the following will continue to occur:

- Stream morphology will remain in a degraded condition and may become further degraded.
- Stream bank erosion and failure of the in-channel pond will continue to contribute sediment to the system.
- The diversity of spawning and rearing habitat for salmonids will remain unchanged or may decline.
- An opportunity to demonstrate the benefits of improved riparian management to neighboring landowners would be lost.

B. The Proposed Alternative

- Stream morphology would be improved and stabilized.
- The sediment contribution to the system would be reduced.
- The diversity of spawning and rearing habitat for

salmonids would be enhanced. Recreational fisheries may be improved in the Madison River.

- Improved riparian management could be used as a demonstration project for neighboring landowners.

VIII. Environmental Assessment Conclusion Section

- 1) Is an EIS required? No

This review clearly demonstrates that the impacts associated with this proposed project are not significant. The proposal would improve the physical environment and provide benefits to the human environment.

- 2) Describe the level of public involvement.

This project was reviewed and supported by a Governor's appointed panel for the Future Fisheries Improvement Program at their February, 1996 meeting. In addition, the FWP Commission reviewed and supported the proposal. The environmental assessment is being sent to all individuals and groups listed on the cover letter.

- 3) Duration of comment period?

Public comment will be accepted through 5:00 P.M. May 28, 1996.

- 4) Name, title, address and phone number of the person responsible for preparing the Environmental Assessment:

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Fisheries Division
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