

Montana Fish, Wildlife and Parks
1420 E 6th Ave, PO Box 200701 Helena, MT 59620-0701
(406) 444-2452

ENVIRONMENTAL ASSESSMENT

PART 1. PROPOSED ACTION DESCRIPTION

Project Title: Mosquitofish Stocking in Montana

Application Date: March 11, 2004

Name, Address and Phone Number: Montana Fish, Wildlife and Parks
4801 Giant Springs Road
Great Falls, MT 59405
(406) 452-6181

Project Location: Boulder Hot Springs
Boulder, MT

Description of Project:

Collection, transport and relocation of mosquitofish (*Gambusia affinis*) for mosquito control. Mosquitofish will be collected at Boulder Hot Springs and distributed to various mosquito control districts in Montana. The fish will be collected by representatives from Montana Fish, Wildlife and Parks and the Montana Department of Public Health and Human Services. All fish will be treated with formalin to remove parasites and unwanted organisms on the fish. The fish will be placed in spring or well water for shipment. The mosquitofish will be transported by representatives of the mosquito control districts to various waters within the district. Fish will be released into selected waters to aid in mosquito control. Mosquitofish reproduce rapidly and each fish can consume large numbers of mosquito larvae. Waters into which these fish will be released will be selected by each mosquito district and approved by Montana Fish, Wildlife and Parks. They must be waters with no discharge to any stream or other water body. These waters are generally stagnant shallow waters, which are conducive to mosquito production. Mosquitofish will survive throughout the summer in these waters, but will not survive through the winter.

Alternatives to Proposed Action:

Mosquitofish are popular for mosquito control because they provide an alternative to chemical control. Alternatives to using mosquitofish to control mosquitoes include (1) do nothing, (2) use chemicals to control the mosquitoes, (3) drain wetland areas to remove mosquito habitat.

Other groups or agencies contacted or which may have overlapping jurisdiction:

This project will be conducted jointly with the following agencies:

- Montana Department of Public Health and Human Services
- Montana Mosquito Control Districts

The following groups have expressed concern about use of mosquitofish to control mosquitoes:

Jim Rainey, Executive Director
Federation of Fly Fishers
P O Box 1595
Bozeman, MT 59771

Pat Byorth, Past-President
Montana Chapter AFS
3141 E. Hollyhock
Belgrade, MT 59718

Janet Ellis, Program Director
Montana Audubon
P O Box 595
Helena, MT 59624

Bruce Farling, Executive Director
Montana Council of Trout Unlimited
P O Box 7186
Missoula, MT 59840

Craig Sharpe, Executive Director
Montana Wildlife Federation
P O Box 1175
Helena, MT 59624

PART 2. ENVIRONMENTAL REVIEW

Table 1. Potential impact on physical environment.

Will the proposed action result in potential impacts to:	Unknown	Potentially Significant	Minor	None	Can Be Mitigated	Comments Provided
1. Unique, endangered, fragile, or limited environmental resources				X		
2. Terrestrial or aquatic life and/or habitats			X			Will reduce abundance of mosquitoes
3. Introduction of new species into an area				X		Introduced fish will not over winter
4. Vegetation cover, quantity and quality				X		
5. Water quality, quantity and distribution (surface or groundwater)				X		
6. Existing water right or reservation				X		
7. Geology and soil quality, stability and moisture				X		
8. Air quality or objectionable odors				X		
9. Historical and archaeological sites				X		
10. Demands on environmental resources of land, water, air & energy				X		
11. Aesthetics			X			Will improve environment through removal of mosquitoes

Comments

(A description of potentially significant, or unknown, impacts and potential alternatives for mitigation must be provided.)

Mosquitofish will feed on mosquitoes in waters into which the fish are placed. However, given the large amount of shallow wetland, which provides vast mosquito-producing habitat, it is unlikely mosquitofish will have a major impact on mosquito production in any given mosquito control district. However, these fish may have a significant local impact in areas adjacent to waters stocked with mosquitofish. Mosquito control will be limited to the specific waters into which the fish are placed. Control will further be limited by control over the summer months in

a single season. These fish will not survive cold climates and winter conditions in most waters in Montana. Therefore, they will have to be restocked each year.

These fish will only be placed into waters, which do not have outlets to any open water in Montana. They will not have access to streams or other waters.

Table 2. Potential impacts on human environment.

Will the proposed action result in potential impacts to:	Unknown	Potentially Significant	Minor	None	Can Be Mitigated	Comments Provided
1. Social structures and cultural diversity				X		
2. Changes in existing public benefits provided by wildlife populations and/or habitat				X		
3. Local and state tax base and tax revenue				X		
4. Agricultural production				X		
5. Human health		X				Mosquitoes can be vectors for human pathogens. Reduction of mosquito numbers can have a positive impact on human health.
6. Quantity and distribution of community and personal income				X		
7. Access to and quality of recreational activities			X			Reduced number of mosquitoes will have a positive impact on recreational use of areas near waters into which these fish are placed.
8. Locally adopted environmental plans & goals (ordinances)			X			Mosquitofish may have a positive impact on local outdoor interests.
9. Distribution and density of population and housing			X			Mosquito reduction will make areas near stocked waters more desirable.

10. Demands for government services			X			Use of mosquitofish to control mosquitoes may reduce the need to use more expensive and potentially harmful chemical control.
11. Industrial and/or commercial activity				X		

Comments

(A description of potentially significant, or unknown, impacts and potential alternatives for mitigation must be provided as comments.)

Fish Pathogens and Unwanted Organisms:

Whenever any live fish is transported from one area to another, there is potential to spread fish pathogens and parasites. It must be assumed that whatever organisms are present on or in the fish, or present in the transport water, will be transported with the fish and released into the new water in which these fish will be stocked.

In order to mitigate this concern, a **fish health inspection** will be conducted prior to moving fish from Boulder Hot Springs. This inspection will be conducted at least one month prior to moving any fish from the pond. The inspection will be conducted using American Fisheries Society / Fish Health Section “Bluebook” protocols, and will test for virus, bacterial pathogens and parasites, including *Myxobolus cerebralis*, the parasite responsible for whirling disease in Salmonid fish. A minimum of 60 fish will be tested, which is a number adequate to provide a 95% confidence of detecting a fish pathogen in at least one fish tested, assuming the pathogen is present in at least 5% of the fish in the population.

All fish will be **transported in well or spring water**, which will help reduce the possibility of moving unwanted organisms with the fish transfers.

Prior to transport of mosquitofish from Boulder Hot Springs, all fish will be placed into a solution of **100 mg/l formalin for 10 minutes**. This treatment will help eliminate unwanted organisms in the water, and will help remove external parasites from the fish prior to transporting them.

Introduction of Fish Into a New Area:

All fish collection will be **supervised by Montana Fish, Wildlife and Parks and / or Montana Department of Public Health and Human Services**. Representatives from these agencies will ensure only mosquitofish are collected for restocking. Fish will be distributed only to representatives of mosquito control districts.

Waters into which fish are to be stocked must be identified in advance and **approved by Regional FWP Fisheries Managers**. Stocking waters may not have an outlet to any stream or other water in Montana. They must be contained pools with **no outlet**. This will help ensure mosquitofish are not liberated into water in which they may survive over winter.

Does the proposed action involve potential risks or adverse effects, which are uncertain but extremely harmful if they were to occur?

The risk of spreading fish pathogens or other unwanted organisms with the mosquitofish does exist and must be considered, as with the movement of any aquatic animal. We feel this risk is low, and can generally be mitigated through methods mentioned above. However, if a pathogen is transported with the mosquitofish, the impact is considered to be low because the fish will not be liberated into fish-producing habitats.

Does the proposed action have impacts that are individually minor, but cumulatively significant or potentially significant?

Potential risks associated with mosquitofish transfers are considered in the proposed action. Although potential risks are considered low, the proposed plan mitigates the risks through use of clean transport water, formalin bath and limited and limited stocking site requirements. The potential to remove mosquitoes and control human disease, such as West Nile Virus, is also likely to be minor and may not be significant. However, the positive potential of this proposal is likely to be much greater than the negative potential.

Description and analysis of reasonable alternatives (including the no action alternative) to the proposed action when alternatives are reasonably available and prudent to consider. Include a discussion of how the alternatives would be implemented:

No action alternative:

If nothing is done to control mosquitoes, the possibility for spread of human disease and a more undesirable environment in which to live increases.

Chemical control alternative:

Chemical control may be used as an alternative to mosquitofish. Chemical control is more expensive and may be potential hazardous to human health.

Removal of mosquito-infested waters:

Removal of mosquito breeding areas is not a viable option in many cases, due to the number of waters and potential breeding sites. Many mosquito-producing waters are also important waterfowl production areas and valuable wetlands, which are necessary for wildlife production and important to the ecosystem. Removal of these areas is not a viable option.

EA prepared by: Jim Peterson
Montana Fish, Wildlife and Parks
4801 Giant Springs Road
Great Falls, MT 59405

Date Completed: March 11, 2004

Email address for comments: jjpeterson@state.mt.us

Mail comments to: **Jim Peterson**
Montana Fish, Wildlife and Parks
4801 Giant Springs Road
Great Falls, MT 59405

Comments due by: April 20, 2004