

MONTANA MOSQUITO and VECTOR
CONTROL ASSOCIATION

FALL MEETING - HELENA, MONTANA - 27 Sept 71

FISH FOR MOSQUITO CONTROL - FISH MANAGEMENT CONSIDERATIONS

Speech Presented by: George D. Holton, Chief Fisheries Biologist
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The Montana Fish and Game Department applauds your efforts to control mosquitoes without damaging fish and wildlife. As a biologically oriented agency we favor biological controls wherever they can be used. There is a problem, however, even in the use of fish. Our fisheries managers are rightfully concerned about the introduction of new fish species and the moving of fish from one water to another. The problem we face is exemplified by the carp. This fish, a native of Asia, was first planted in the state in 1886. In fact, early records indicate the first introduction was into a pond right here in Helena valley. Carp now contaminate many Montana lakes and reservoirs in spite of the expenditure of hundreds of thousands of dollars to exterminate them in individual waters and drainages. The one impressive victory we had was when we eliminated them from the only Montana lake west of the Continental Divide in which they were known to be present.

What this amounts to is that it is practically impossible to get rid of an undesirable species once it becomes established and starts reproducing. I spent a frustrating day this past Friday at Delmo Lake near Butte, just east of the Continental Divide. The redbreasted shiner, a native west of the Divide in Montana, was illegally planted there several years ago presumably by a fisherman using them for bait. Last week when the lake was drawn down for repairs to the dam we checked to see if we could take advantage of the low water to eradicate the shiners. Unfortunately, they had spread throughout a jungle of beaver dams in one of the tributaries. Our past experience has indicated that we simply do not have the means to completely eliminate them from an area like this. No doubt we would miss enough of the population so it would rebuild.

The redbside shiner was also illegally planted into one other lake east of the Continental Divide - Cliff Lake near West Yellowstone. You might wonder why we worry about a minnow that at the largest is only six or seven inches long. Experience in Montana and elsewhere has shown that when they invade a trout or grayling lake, gamefish numbers plummet. Evidently, the shiners eat the small gamefish or best them in the competition for food.

There are regulations and laws aimed at preventing such unwise introductions. Those of you who fish are no doubt aware that sculpins are the only fish that can be used as live bait statewide. In the eastern part of the state, fishing regulations allow the use of other live fish as well but only in waters that already have a complex of fish species. Then too, there is a state law that makes it "unlawful for any person or persons to transplant or introduce any fish or fish eggs into any body of water in the state ... without first having obtained authorization from the fish and game commission." This, of course, includes even fish used for mosquito control.

John Toenyas, Director of Cascade County Mosquito Abatement District, advised Dick Johnson, our fisheries manager at Great Falls, that some of the Gambusia he has available for mosquito control has minnows mixed with them. Dick identified the minnows as being in genus Hybognathus. Montana has three minnows in this genus - they are difficult to tell apart. We would have no qualms about planting these fish in areas where they are already present, but would be cautious about allowing them to be introduced into new drainages. We would be particularly against planting them west of the Continental Divide for, at present, there are only four species of minnows west of the Divide - none in genus Hybognathus.

In his recently published book, FISHES OF MONTANA, Dr. C. J. D. Brown writes:

"The mosquitofish is world renowned because of its use in the control of mosquitoes. There is no doubt of its effectiveness when conditions are favorable for fast growth and reproduction. It is probable, however, that certain native minnows would serve this purpose more effectively in Montana because they are

able to over-winter and would not need to be stocked each year."

After talking this over with Dr. Brown, I believe species such as plains killifish, brook stickleback and, in particular, fathead minnow might be worth experimenting with. The first thing to find out is how avidly they eat mosquito larvae.

Be assured that we will be happy to cooperate with you in your endeavors to use fish for mosquito control. We will do what we can to help you determine what species are best suited and when you request authorization for planting we will keep "red tape" to a minimum. I am sure things can be worked out so you can do your job in mosquito abatement while, at the same time, we in the Fish and Game Department can protect Montana's fine sport fisheries from unwise introductions.