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MONTANA FISH AND GAME DEPARTMENT

Helena, Montana

THE EFFECTS ON FISH AND GAME OF PROPOSED ROUTES FOR THE INTERSTATE HIGHWAY FROM HELENA TO THE VICINITY OF WOLF CREEK, MONTANA

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A multimillion dollar highway construction program is in progress in Montana. Good roads generally assist hunters, fishermen, campers, picnickers and others reach the site of their outdoor recreation. However, the quest for faster, better roads often results in the ruination of fish habitat in streams and, in the case of limited access highways, bars access to outdoor recreation areas.

The proposed interstate highway between Helena and the vicinity of Wolf Creek could cause excessive losses to fishing and hunting due to the possible location of a four-lane, limited access highway in Wolf Creek Canyon.

Information furnished by the Montana State Highway Commission indicates three possible routes for this highway. The west and middle routes follow closely along Prickley Pear Creek from Sieben through Wolf Creek Canyon. The east route crosses the Missouri River and follows the east shore of Holter Lake until it meets the present highway. This latter route would have considerably less detrimental effect on fish and wildlife habitat than the other two. Following are evaluations of the effects of these three highway locations on (1) fish and (2) game.

Comparative Effects of the Three Proposed Highway Locations on Fish

The proposed east highway location would involve no loss of stream channel and could provide much improved access to Holter Lake and the surrounding recreational area. Over much of the proposed route this area is now accessible only on foot or horseback. The middle route (the route most favorably considered by the Highway Commission) would destroy 4 to 6 miles of natural stream channel and greatly restrict access to the undamaged section of stream in Wolf Creek Canyon. The west route involves even more fish habitat destruction.

Two-thirds of the people fishing Montana waters prefer stream fishing to lake or reservoir fishing as indicated by their fishing habits. Prickley Pear Creek rates relatively high on the statewide stream evaluation. (Stream Classification Committee, 1959). It is in the Class III group, designated as of interest to a large portion of the state. There are only 3,900 miles of stream in Montana in this or a higher class. Most fishermen on Prickley Pear Creek are from Great Falls and Helena. This stream plus the Prickley Pear Creek through Clancy (which will also be subjected to severe fish habitat losses due to interstate highway construction) contribute a sizeable amount of the stream fishing in this area.

A fish population study was conducted on the Prickley Pear Creek in Wolf Creek Canyon during the summers of 1949, 1950 and 1951 (Stefanich, 1952). Six 600-foot sections were randomly selected and found to have an average of 211 pounds of game fish per mile - a good population. The habitat was excellent for trout and whitefish except in relatively short stretches where it had already been destroyed by channel changing during highway and railroad construction. Observations in the sections studied, indicated that Prickley Pear Creek varied from 15 to 60 feet wide with maximum depths from 6 inches to 8 feet. There was a gradient of 41 feet per mile and the highest temperature recorded was 67°F. There was a good interspersion of pools and riffles with good cover provided by undercut banks and overhanging brush. Food production was good and adequate spawning areas were available.

Based on creel census estimates, 2,072 to 3,377 fishermen trips were made in the canyon in 1951 and again in 1952. This is about 230 fishermen per mile per summer. The U. S. Fish and Wildlife Service (Nicholson, 1957) estimated the average daily expenditure by cold water fishermen in the Missouri River Basin during the period 1948 to 1954 was $7.38. Using this figure the 2,072 to 3,377 fishermen on the 12-mile stretch of stream spent $15,291 to $24,922 annually or approximately $1,700 annually per stream mile.

The real value of Prickley Pear Creek lies in its potential as a fishing stream. The number of fisherman trips in the nation and in Montana is expected to expand in the next few decades. In fact, in the past ten years Montana fishing pressure has increased at about twice the rate of the general population increase. Increased numbers of fishermen coupled with destruction of many additional miles of fish habitat by dewatering, road construction, pollution, etc. will result in greatly increased use of all remaining fishing streams.

It is anticipated that Prickley Pear when managed for full utilization can furnish 6,400 man-days of fishing per mile each year. This estimate is based on present concentrations of fishermen on streams in more heavily populated states. Using the $7.38 per day fisherman expenditure figure gives Prickley Pear Creek a potential annual value of approximately $47,000 per stream mile. Either inflation or deflation could alter the potential annual value. It is anticipated that if the habitat of Prickley Pear Creek is maintained, the fisherman use will steadily increase from the present use to this full utilization.

An interstate highway through Wolf Creek Canyon has two possible routes (1) primarily east of the stream and (2) primarily west of the stream.

The east route through Wolf Creek Canyon would involve approximately 3,240 feet of channel change along with a serious reduction in access to the stream, parking areas, and picnic areas. This would greatly decrease recreational use of the stream. The access limitation could be alleviated if the old Mullan Road were reopened.

The west route through the canyon would result in 4 to 5 miles of additional channel change over and above that of the east route. These 4 to 5 miles would be in the most productive part of the stream. This channeling would reduce the fish habitat in the 12 miles of stream involved by at least one-half. Whitney and Bailey (1959) found that channel changes on Flint Creek due to highway construction near Philipsburg resulted in a loss of 94 percent (by number and weight) of game fish 6 inches and longer in affected stretches of the stream. Cutting the cottonwood trees along the river, as planned in connection with the west route, would reduce shade and cover important to fish life and to the recreation minded public. This route would probably involve a series of drops or dams in the stream to reduce the stream's velocity. Possibly these could be designed to permit fish passage and provide pools which would mitigate some of the fish habitat damage caused by stream straightening. It is anticipated that in time these pools would fill with sediment.

Comparative Effects of the Three Proposed Highway Locations on Game

Deer, elk and mountain goats are the chief big game species found in the mountainous sections of the area between Helena and Wolf Creek. Important game birds are blue and ruffed grouse. Waterfowl, both ducks and geese, are commonly found on the section of Holter Lake adjacent to the east route.

Hunting is an important recreational activity in this area, particularly in the vicinity of Wolf Creek Canyon.

Difficulty in getting off the interstate highway to hunt big game and mountain grouse in the section between Sieben and Wolf Creek (Wolf Creek Canyon) would represent a definite wildlife management detriment in the selection of either the middle or west routes.

The exchange at the mouth of Lions Creek would aid in access to one of the more important hunting sections of the Wolf Creek Canyon area. A very substantial amount of the Canyon area would still remain inaccessible, however.

Definite big game and game bird hunting benefits would be gained by the selection of the east route. A big game area of major importance on the east side of Holter Lake that is now definitely underharvested would be made much more accessible to sportsmen by the interstate highway. Waterfowl hunting on Holter Lake would become more important with improved access.

In summary, either the middle or west routes would seriously limit access to presently important big game and mountain grouse hunting areas in Prickley Pear Canyon.

Conversely, both big game and waterfowl hunting would be improved by the increased access made available in the construction of the east route.

Discussions and Conclusions

The route along Holter Lake is by far the most desirable from the outdoor recreation viewpoint. Improved access would be provided to an area that now has very limited access, and greatly increase the use of Holter Lake as a recreation area. Even more important, damage to Prickley Pear Creek and the reduction of access to hunting could be avoided.

Based on potential fisherman use alone, the destruction of fish habitat in six miles of Prickley Pear Creek would be a loss of $9,870,000 over the 35-year service life of the highway. Once the road is built there is little possibility that the stream could ever be restored to its natural condition, so for practical purposes the channeled section of stream would be lost forever. If losses to hunting, picnicking and other outdoor uses were added to this $9,870,000 damage figure, it would exceed the $12,007,170 estimated by the Highway Commission as the lifetime saving of the middle route (through Wolf Creek Canyon) over the east route (via Holter Lake).

The Highway Commission is dedicated to the policy of building the best roads possible at least cost. This often means straight routes through narrow canyons which crowd formerly valuable streams into sluice-like runs of little value to fish life. Wildlife and aesthetic values in this program, we feel, have not been given sufficient consideration. Road builders should assume a responsibility toward maintaining certain other values when considering the routing of highways.

Funds financing road building come from the same public that enjoys outdoor recreation. In Montana one-third of the population fishes or hunts. There is no estimate of how many others simply enjoy aesthetic values such as the beauty of a natural trout stream.

Due to serious wildlife losses the Montana Fish and Game Department takes the stand that the interstate highway between Helena and the vicinity of Wolf Creek should not be routed through the Wolf Creek Canyon.

Literature Cited

Nicholson, A. J.
1957. Summary of sportsmen's expenditures, Missouri River Basin. Fish and Wildlife Service Spec. Sci. Report: Wildlife No. 35: 15 pp.

Stefanich, F. A.
1952. The population and movement of fish in Prickley Pear Creek, Montana. Trans. Am. Fish. Soc. Vol. 81 (1951): 260-274.

Stream Classification Committee
1959. A classification of Montana fishing streams - 1959. Published by Missouri River Basin Studies of the Bur. of Sport Fish. and Wildl.

Whitney, A. N. and J. E. Bailey
1959. Detrimental effects of highway construction on a Montana stream. Trans. Am. Fish. Soc. Vol. 88 (1): 72-73.