



United States Department of the Interior

FISH AND WILDLIFE SERVICE
 ENDANGERED SPECIES OFFICE
 1406 FEDERAL BUILDING
 125 SOUTH STATE STREET
 SALT LAKE CITY, UTAH 84198-1197

April 20, 1984

IN REPLY REFER TO:

SE/SLC:6-5-84-0021

MEMORANDUM

TO: Chief, Technical Support Branch,
 Office of Surface Mining, Denver, Colorado

FROM: Field Supervisor, Endangered Species Office,
 U.S. Fish and Wildlife Service, Salt Lake City, Utah

SUBJECT: Section 7 Consultation, Trail Mountain Mine

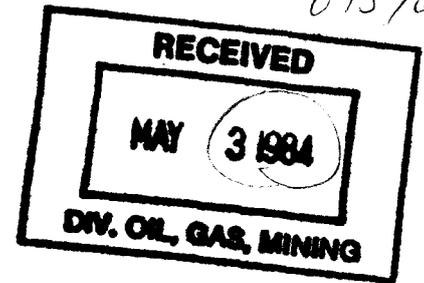
Reference is made to your memorandum dated March 13, 1984 which presented Office of Surface Managements' (OSM) determination that depletion of water from the North Fork of Cottonwood Creek in Emery County, Utah as a result operation of the Trail Mountain Mine may effect the Colorado squawfish (Ptychocheilichthys lucius) and the humpback chub (Gila cypha). Your memorandum also requested a biological opinion for the permitting action OSM is contemplating. Our comments have been prepared as prescribed in the Section 7 Interagency Cooperation Regulations, 50 CFR 402, and the Endangered Species Act (ESA), 16 U.S.C., 1531 et. seq.

BIOLOGICAL OPINION

The issuance of a permit to allow continued operation of the Trail Mountain Mine is not likely to jeopardize the continued existence of the Colorado squawfish provided the conservation measures outlined below are adopted and followed. The above action also is not likely to jeopardize the continued existence of the humpback chub.

PROJECT DESCRIPTION

The Trail Mountain Mine is located in Emery County, Utah. The continued operation will result in an annual depletion of 4.53 acre-feet per year (af/yr) from the North Fork of Cottonwood Creek. Part of this will be consumed by mining equipment operation and the remainder as dust control. This depletion of water from the North Fork of Cottonwood Creek will result in a depletion of Cottonwood Creek a tributary to the San Rafael River which eventually flows into the Green River. There are no other potential impacts to currently listed threatened or endangered (T&E) species to be considered.



BASIS FOR OPINION

COLORADO SQUAWFISH

Early records indicate that the Colorado squawfish was once abundant throughout the Colorado River system. It was abundant over all of its range prior to the 1850's (Seethaler, 1978). The present range of the squawfish is restricted to the upper Colorado River basin. It is found inhabiting about 360 miles of the main stem Green River from the mouth of the Yampa River downstream to the confluence of the Green and Colorado Rivers (Fish and Wildlife Service, [FWS] 1982).

Decline of the populations of the squawfish correlates very closely with the construction of dams and reservoirs and the removal of water from the Colorado River system. Colorado squawfish evolved in and apparently require habitat conditions typified by great seasonal fluctuations in flow and turbidity, coupled with warm summer temperatures. Additionally, it appears that squawfish require relatively unrestricted movement to satisfy all of their life history requirements. Movement of adult squawfish appears to be related to flow, temperature, feeding and spawning behavior.

The life stages that appear to be most critical are from egg fertilization through its first year of life. It has been demonstrated that these phases of squawfish development are also closely tied to some specific habitat requirements. It is imperative that proper flows and temperatures are provided during these essential life stages. The Conservation Measures outlined below will help meet the habitat requirement needs of the Colorado squawfish.

HUMPBACK CHUB

Humpback chub generally do not make migrational movements in the Upper Colorado River and tend to reside throughout the year within a limited stretch of river. Humpback chub are found inhabiting narrow, deep canyon areas which are quite restricted in distribution. They seldom leave their canyon habitat (Miller et al. 1982). While the humpback chub are still found dispersed in the Green and Yampa Rivers, the only major population of humpback chub conclusively known to exist in the Upper Colorado River Basin are located in Black Rocks and Westwater Canyons on the Colorado River. Since the Trail Mountain Mine will not have any effect on the Colorado River at the sites where known humpback chub populations occur, in our opinion, the proposed project is not likely to jeopardize the continued existence of the humpback chub.

CONSERVATION MEASURES

FWS believes that any further water depletions from the upper basin may have detrimental effects on listed fishes; however it is believed that certain management techniques can be implemented to offset harmful effects from additional development. Two major categories for potential impacts are considered: (1) direct, project specific impacts and; (2) indirect subtle impacts.

1. Direct Impacts

In the case of the Trail Mountain Mine the direct impacts to the Colorado squawfish are simply the violation of required fish flows in essential reaches for this species. The Trail Mountain Mine Project by depleting ground water a significant distance from occupied habitat, will have an imperceptable effect on minimum flows. The amount and timing of the reduction of minimum flows as a result of depleting 4.53 af/yr from the North Fork Cottonwood Creek will not be measurable and cannot be analyzed by the FWS hydrologic model. Because of the above and because this is a continuing small water depletion project, it is determined that the Trail Mountain Mine project will not affect FWS determined minimum flows.

2. Indirect Effects

Other impacts resulting from water developments may be more subtle, but just as harmful in a cumulative sense. The fact that water is depleted from the rivers reduces the flexibility of the system to withstand additional water losses without detrimental impacts to essential areas. Creation of habitat favorable to introduced species is an example of how seemingly minor changes in flow regimes may shift the balance between survival and extinction for one or all of these listed fishes.

Depletions that bring present day flows down to the prescribed minimums can only occur if enhancement measures contained in active research and management plans are funded by the project sponsor or proponent. FWS has identified certain conservation measures that are currently considered necessary to maintain the survival of the fish and contribute toward future recovery. These measures include monitoring known populations and attempting to locate new areas containing the fish; further analyzing the potential effects of water depletions and associated flow regime modifications; locating existing and potential spawning and YOY rearing areas; researching and constructing various fish passage and habitat restoration features; and producing the fish in a hatchery facility for research and restocking of individuals in existing and historical habitat.

Since such measures will develop critically important data on the survival needs of the fish, attempt to restore essential habitat, and allow a recovery program to be implemented, funding of these activities by project sponsors is considered a reasonable and

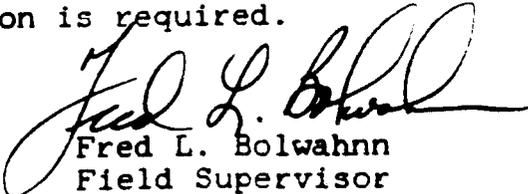
prudent alternative designed to compensate or prevent the adverse effects of water depletion. Under a procedure developed by the FWS, Upper Basin project sponsors are assessed a proportion of the total cost needed to support these conservation measures, currently estimated at approximately 25 million dollars.

The cost assessed any particular project is based upon the amount of water that the project would annually deplete from the upper Colorado River system in proportion to the amount available for development. It has been estimated by the Bureau of Reclamation that a total of 1.906 million af (maf) remains available for development in the Upper Basin under the Colorado River Compact.

Of this amount, 231,000 af are allocated to Arizona and New Mexico and will eventually be diverted from the lower part of the Colorado River Basin (below Lee's Ferry) and would not affect areas currently occupied by the endangered fishes in the Upper Basin. This leaves 1.675 maf in the Upper Colorado River sub-basins as the value against which project depletions are assessed in calculating a project's proportion of the conservation measures. Based upon the use projection of 4.53 af/yr for the Trail Mountain Mine the amount of contribution to the Conservation measures would not exceed \$70. A contribution of this amount to the conservation fund will offset the impacts of the depletion of water on the Colorado squawfish and will not jeopardize the continued existence of this species. The FWS should be notified in writing within three months of the date of this biological opinion whether the OSM and the operators of the Trail Mountain Mine agree with this conservation measure. Negotiations for contributing to the fund should be initiated as soon as possible.

The FWS is currently attempting, with the assistance and input of other concerned and interested Federal and State agencies, to develop conservation measures which will provide for the conservation and recovery of the endangered Colorado River fishes. If the results of this coordinated effort is a continuation of minimum flows and contributions of funds towards the conservation effort, then the approach outlined above as an alternative precluding jeopardy to the Colorado squawfish will remain valid. If a different approach is developed it would then be used in future consultations.

Should there be any changes in the amount of water depletion or any other project change from that which was proposed which may affect any endangered or threatened species, or failure to agree to the Conservation Measures the FWS should be contacted to determine if further consultation is required.


Fred L. Bolwahn
Field Supervisor

REFERENCES

Seethaler, K. 1978. Life History and Ecology of the Colorado Squawfish (Ptychocheilus lucius) in the upper Colorado River basin. Thesis, Utah State University. Logan, Utah.

U.S. Fish and Wildlife Service. 1982. Colorado River Fishery Project Final Report. Part I (42 pp), Part II (356pp), and Part III (324 pp). Prepared for the U.S. Bureau of Reclamation, Salt Lake City, Utah. April 1982.