



UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
ECOLOGICAL SERVICES
3616 W. Thomas, Suite 6
Phoenix, Arizona 85019

2-21-91-F-014

November 27, 1990

MEMORANDUM

TO: District Manager, Phoenix District, Bureau of Land Management,
Phoenix, Arizona

FROM: Field Supervisor

SUBJECT: Biological Opinion for Drilling Activities in Arizona Cliffrose
Habitat

This biological opinion is our response to your October 12, 1990, request to initiate formal consultation pursuant to Section 7 of the Endangered Species Act (Act) of 1973, as amended. The action under consultation is an amendment to GSA Resources Mining Plan of Operation (MPO) (MPO-88-K-10), which would allow core drilling activities within the occupied habitat of Arizona cliffrose (Purshia subintegra). The proposed project is located near Burro Creek, Mohave County, Arizona. This consultation was initiated on October 15, 1990, the day we received your request.

The species of concern in this consultation is Arizona cliffrose (Purshia subintegra).

BIOLOGICAL OPINION

It is my biological opinion that conducting this project as described in the biological assessment provided by the Bureau of Land Management (BLM) is not likely to jeopardize the continued existence of Arizona cliffrose.

This biological opinion is based on the BLM's Biological Evaluation, data in our files, and other sources of information.

BACKGROUND INFORMATION

Arizona cliffrose occurs in four separate areas in central Arizona: near Clarkdale (Yavapai County), Burro Creek vicinity (Mohave County), near Bylas (Graham County), and Horseshoe Lake vicinity (Maricopa County). The sites differ slightly in elevation and vegetation, but all sites share the white limestone soils that are derived from Tertiary lakebed deposits. Because the species is limited to four populations, has narrow habitat requirements, and has experienced declines due to man-caused actions, Arizona cliffrose was listed as endangered on May 29, 1984 (49 FR 22326).

Mining and mining-related activities are a serious threat to the long-term survival of this species, particularly in the Burro Creek area. Drilling and bulk sample procurement have already reduced the number of plants and amount of available or undisturbed habitat in the Burro Creek area. Clair Button (BLM, Phoenix District Office, pers. comm., October 18, 1990) estimates that 30 (\pm 10) acres of the total 140 acres of Arizona cliffrose occupied habitat has been disturbed due to mining activities in the Burro Creek area. At this time, no mining activities have occurred or have been proposed within the other three Arizona cliffrose populations.

The BLM and the Fish and Wildlife Service (FWS) have had previous Section 7 consultations regarding the effects of mining on the Burro Creek population of Arizona cliffrose. In 1984, while the Arizona cliffrose was proposed for listing as endangered, GSA Resources submitted to the BLM a Notice of Intent to do some exploratory drilling and bulk sample procurement on the claims near Burro Creek. During the course of their operations, individuals of Arizona cliffrose were destroyed. As a result of that destruction and because the work went beyond that described in the Notice of Intent, the BLM requested that GSA submit an MPO for the work. The MPO was submitted on April 16, 1984. The FWS reviewed the MPO with the BLM and suggested that several measures to protect the cliffrose be included as stipulations in the approved MPO.

A new MPO for additional work on the Burro Creek claims was submitted to the BLM on December 23, 1987. The MPO requested approval of a plan to remove a total of 300 tons of smectite clay from three small sites totalling 0.7 acre within the occupied habitat of the cliffrose. The BLM determined that use of only one of the three sites, Site 2, would permit the necessary sampling while minimizing the adverse impacts to the cliffrose. The biological opinion (2-21-88-F-56) on this MPO was completed by the FWS on March 9, 1988. The BLM subsequently approved the MPO, with the subsequent loss of nine Arizona cliffrose plants.

Grazing by livestock and wildlife also threatens the long-term survival of Arizona cliffrose. This relatively small, palatable shrub usually receives moderate to heavy grazing pressure, particularly near water sources. On the San Carlos Indian Reservation, grazing pressure is less than the other populations of Arizona cliffrose, probably because water for livestock is distant to the population. The Burro Creek population of cliffrose is browsed by cattle, burros, and deer. Observations and preliminary data indicate that the constant, historic browsing pressure may have reduced the vigor and/or form class of the remaining plants. Reduced plant vigor may result in less than optimal reproductive effort or success. Browsing animals may also reduce reproductive success by eating tender seedlings or branches containing flowers. The extent to which browsing has altered successful reproduction in any Arizona cliffrose population has never been quantified.

In 1989, the BLM decided to protect the population of Arizona cliffrose at Burro Creek from cattle and burros by constructing an exclosure fence. A formal Section 7 consultation was conducted on the effects of the fence and its construction. The biological opinion, completed on April 27, 1989, determined that the project was likely to beneficially affect the Arizona cliffrose. The BLM completed the fence in early 1990.

Construction of dirt and paved roads has caused habitat loss in all four populations. No estimate on the amount or proportion of habitat lost is available.

Off-road vehicle (ORV) use has contributed to habitat loss or degradation in most populations. This threat is minimal or non-existent at the population near Bylas, but ORV use is occurring at the populations near Burro Creek, Clarkdale, and Horseshoe Lake. No information is available regarding this threat at the Bylas site. As the human population increases, the importance of this threat is likely to increase, particularly near Clarkdale. The amount or proportion of habitat lost to this threat has not been estimated.

Description of Project

The August 1990 amendment to MPO-88-K-10 proposes to drill core samples at 21 locations to test the quality of smectite clay material for special product applications. The proposed drilling activity is located at T14N, R11W, Sections 1 and 12. The original proposal was modified during an on-site inspection to restrict mechanized access and drilling to existing trails and disturbed sites. Some minor cut and fill work will be necessary along the old trails to repair eroded portions and drainage crossings to allow access. The required dirt work would not affect any Arizona cliffrose plants. Heavy vehicles will pass within two meters of a number of cliffrose plants at three locations, potentially causing damage to those which have roots beneath the surface of the old trails. Two of the old access trails have begun to revegetate from natural invasion of plants species on locations, and this successional process will be set back by the new use.

Specific locations of the drill holes will be placed as specified in the biological evaluation and are described as follows. Drill holes 1 and 2 are on old trails in an area of unoccupied habitat. Holes 3, 4, and 5 will be drilled on the main road, slightly east of occupied habitat. Hole 6 will be accessed from the main road and is on disturbed habitat adjacent and south of the road. Holes 7, 7A, 8, and 9 will be drilled on old drill pads or on the old trail, with some reconstruction of a drainage crossing to occur just west of hole 8. A small portion of this trail passes between seven Arizona cliffrose plants. Hole 10 will be accessed from a very old

mining trail that has begun to revegetate. Holes 11, 12, 13, 14, and 15 will be placed downslope from the BLM study plots. Holes 16, 17, and 18 are in unoccupied potential habitat. Holes 19, 20, and 21 will be accessed from an old powerline construction trail which has become partially revegetated between the drilling locations. A total of eight Arizona cliffrose plants occur close enough to be impacted on both sides of the trail near hole 21. The BLM will require the drilling company to provide advance notification so BLM personnel can be present to monitor activity and assist in avoiding cliffrose plants during the use of access and drilling operations of holes 7, 7A, 8, 10, 19, 20, and 21.

The drilling will be accomplished by a portable rig mounted on a 2.5-ton truck. A D-6 bulldozer would be used for road maintenance work and, if necessary, to tow the drill rig into some of the sites where access is too steep.

IMPACTS OF THE ACTION

No plants are expected to die due to the actions of this project. However, some root damage may occur. Any plants within 4 meters of the proposed access trails were judged by the BLM to have potential for some damage to their root systems caused by the weight of the truck or bulldozer passing on the road. This standard was based on the observed distance and depth of root spread from the stems of Arizona cliffrose plants removed from the 1988 bulk sampling site. The cliffrose has one to several main roots that may extend away from the central stem up to 6 meters. Generally, the roots are at least 20 - 30 centimeters deep at 2 meters from the central stem. At that depth, the soil compaction or displacement caused by the weight of the drilling truck would probably be relatively minor.

Eighteen Arizona cliffrose plants were found within 4 meters of the access roads. Of these, two were relatively young, fifteen were mature, and one was either senescent or dying of environmental stress. The possible affects of root damage include death of the plant, reduced vigor, and reduced reproductive success.

This biological opinion concludes formal consultation on this action. Reinitiation of formal consultation is required if new information reveals effects of the action that may affect listed species or critical habitat in a manner or extent not considered in this opinion, and/or if new species are listed or critical habitat is designated that may be affected by the action.

If we can be of further assistance, please contact Sue Rutman or me
(Telephone: 602/379-4720 or FTS 261-4720).

Sincerely,

A handwritten signature in cursive script, appearing to read "Sam F. Spiller".

Sam F. Spiller
Field Supervisor

cc: Regional Director, Fish and Wildlife Service, Albuquerque, New Mexico
(FWE/HC)
State Director, Bureau of Land Management, Arizona State Office,
Phoenix, Arizona
Area Manager, Kingman Resource Area, Bureau of Land Management,
Kingman, Arizona