



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

2-21-90-F-147

July 16, 1990

MEMORANDUM

TO: Area Manager, Vermillion Resource Area, Arizona Strip District, Bureau of Land Management, St. George, Utah

FROM: Acting Field Supervisor

SUBJECT: Valley Wash Pipeline Biological Opinion

This biological opinion is our response to your April 27, 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 a proposed pipeline that will cross Pediocactus sileri (Siler pincushion cactus) habitat. The proposed project is located in the Valley Wash Allotment, located to the south-southeast of Pipe Springs National Monument, Coconino County, Arizona. This consultation was initiated April 30, 1990, the day we received your request.

Biological Opinion

It is my biological opinion that approval of the Valley Wash pipeline, as mapped in the Environmental Assessment Checklist/Coversheet and described in the Environmental Analysis (number AZ-015-80-193), is not likely to jeopardize the continued existence of Siler pincushion cactus.

Background Information

Siler pincushion cactus was added to the endangered species list on November 26, 1979 (44 FR 61786). No critical habitat was designated. Siler pincushion cactus is a small, solitary or occasionally clustered, globose cactus about 5 inches tall (with exceptional specimens reaching 18 inches) and 3-4 inches in diameter (occasionally larger). The central spines are brownish-black at the tip, becoming gray to white with age. Flowers are yellowish with maroon veins, 0.75-1 inch in diameter, and bloom in the spring.

The range of Siler pincushion cactus is associated with gypsiferous clay and sandy layers of the Moenkopi Formation. These layers tend to form rounded hills and often support a sparser vegetation than adjacent areas of different substrate. Its habitat is characterized by desert scrub vegetation in

transitional areas between the Navajoan Desert, Sagebrush Desert and the Mohavean Desert. The species is found at elevations between 2,800-5,400 feet on all aspects of the hills and on slopes varying from 0-80 degrees.

Relatively dense clusters of plants are known to occur in only several areas. Individual plants are widely separated in other areas of the Moenkopi Formation that are marginally suitable for this species.

Most of the habitat of this species is contained within the Arizona Strip District of the Bureau of Land Management (BLM), Arizona. A small amount occurs in the Cedar City District of BLM, Utah. The species may also occur on the Kaibab-Palute Indian Reservation. All known habitat and plants occur in northern Mohave and northwestern Coconino counties, Arizona, and Kane and Washington counties, Utah.

Threats to the species include illegal collection, herbivory by an unknown species of animal, gypsum and uranium mining and exploration, off-road vehicle (ORV) disturbance, degradation of the habitat due to livestock use, and rangeland pesticide applications. Each of these threats are discussed below.

ORV damage is probably the most significant threat to Siler pincushion cactus. This activity occurs mostly around the St. George, Utah, and the Fredonia, Arizona, areas. ORV enthusiasts are attracted to the area because the low, rounded hills offer appropriate terrain. Unfortunately, the Moenkopi soils are friable, easily impacted, and take a long time to recover in the desert climate. Because Siler pincushion cactus is relatively dense in the area near St. George where the ORV traffic is occurring, the potential for significant adverse effects is high. However, the proportion of the population or habitat affected has never been quantified. For several years, BLM has had some success in diverting the ORV traffic away from the cactus habitat and now has closed the area to ORV use. The area near Fredonia used by ORVs is near the town dump and is also heavily used by target shooters. The area is severely degraded and the potential for losing the cactus population there is high. The percent of habitat or percentage of plants affected by ORV use is unquantified at this time.

When the species was listed, gypsum mining and exploration was believed to threaten Siler pincushion cactus. In 1985, BLM investigated the mineral potential of the gypsum deposits within a portion of the species' range. The mineral reports (Cormier 1985, Swapp 1985) indicated the low economic value of the gypsum deposits made the possibility of gypsum mining low to non-existent in Washington County (near St. George) and near Lost Spring and Yellowstone Mesa in Mohave County, Arizona.

Uranium mining and exploration remains a threat although the potential for development, at least in some areas, is low (Swapp 1985). Wenrich and Sutphin (1988) reported that breccia pipes, indicators of uranium deposits, have been found within *Siler pincushion* cactus habitat. These breccia pipes appear to be in areas where *Siler pincushion* cactus is relatively sparse. The Fish and Wildlife Service (FWS) assumes no plants have been lost to mineral exploration or development because there have been no consultations or reports from the BLM to date.

Siler pincushion cactus is illegally taken from the wild despite the protection of a number of Federal and State laws. The species is protected from international trade by the Convention on International Trade of Endangered Species (CITES). The Arizona Native Plant law prohibits take of plants except for scientific or commercial purposes. The Lacey Act protects plants and animals against interstate transport and commerce when the plants or animals are taken in violation of State laws. Despite this legal protection, enforcement is difficult because many populations are remote or the operator moves quickly. As a result, the amount of plants lost to illegal collection is unknown and unquantifiable.

Herbivory of *Siler pincushion* cactus plants contributes significantly to mortality in at least one area. This herbivory has been documented during demographic studies by the BLM. The source of herbivory appears to be small rodents (Lee Hughes, Arizona Strip District, pers. comm. 1988), which are attracted to the area due to the availability of water and presence of plant cover (cattle have been excluded from the spring site).

Although livestock may affect *Siler pincushion* cactus in the following ways, the number of plants and amount of habitat affected has not been enumerated. Because vegetation tends to be sparse in the habitat of *Pediocactus sileri*, livestock use of the habitat tends to be light. Cattle do not eat the cactus but trampling, particularly of small plants, is a possibility. Livestock have an unknown affect on the watershed condition of *Siler pincushion* cactus. The cactus occurs on a large number of allotments with varying range conditions and trends. Some cacti in allotments with fair or poor condition with a static or downward trend may be affected by livestock use. Trampling and habitat degradation can be a serious problem near areas where livestock congregate because of the availability of water.

Grasshopper infestations and large-scale pesticide applications have the potential to affect *Siler pincushion* cactus. Of greatest concern is the effect pesticides would have on pollinators of the cactus. However, other effects are

also of concern. General pesticides such as malathion and carbaryl kill non-target insects as well as the grasshopper targets. The loss of the insect community and how this would subsequently affect Siler pincushion cactus and the ecosystem on which it depends is unknown. As a result of a nationwide formal Section 7 consultation between the FWS and Animal and Plant Health Inspection Service (APHIS), no malathion ultra-low volume (ULV) or carbaryl ULV may be applied within endangered or threatened plant populations. This restriction does not apply to the application of carbaryl bran bait or Nosema locustae, a grasshopper parasite. Pesticides may be applied on private land with no restrictions. The FWS remains concerned about carbaryl bran bait and its effects on bran-eating insects (such as ants, which transport cactus seed) and other members of the living community, such as small mammals. Further research will show how pesticides and grasshopper infestations may affect Siler pincushion cactus. Presently, no current estimates on plants lost to grasshoppers or pesticide applications are available.

The BLM has proposed to designate several areas containing high densities of Siler pincushion cactus as Areas of Critical Environmental Concern (ACECs). The BLM has proposed to close these ACECs to ORV use. The special land use designation will also require a Mining Plan of Operation for mining-associated activities regardless of the acreage involved.

The project being proposed by the BLM, Arizona Strip District, is the extension of a pipeline in the Valley Wash Allotment from an existing water point in T39N, R4W, Section 4, NWNW 1/4 to a point in T39N, R4W, Section 3, SWSE 1/4. The proposal includes the installation of two troughs, one at the terminus of the pipeline and another in T39N, R4W, Section 3, SWSE 1/4. The pipeline would be installed by the permittee using a farm-type tractor pulling a ripper-tooth-type pipelaying machine.

As planned, the pipeline will cross occupied Siler pincushion cactus habitat near the boundary between T40N, R4W, Section 34, and T39N, R4W, Section 3. As proposed, the pipeline will cross the habitat at an angle perpendicular to the trend of the habitat.

The Valley Wash pipeline is being developed to improve livestock distribution over the Valley Wash grazing allotment and to allow for development of pastures which can be used in a deferred rotation type grazing system. Once implemented, the grazing system may help improve overall range condition, livestock performance, and enhance the area for other multiple uses. If implemented, the system should alleviate grazing pressure in some heavily used areas and increase grazing in lightly used areas. It should also reduce the pressure on Bullrush Wash, a riparian area, which is currently used by livestock but which may be used less if a better water source were to be provided.

Currently, Siler pincushion cactus may be affected by cattle trailing through the habitat. Providing an alternative water source should alleviate the trailing somewhat. The redistribution of cattle as a result of this project will have an unknown affect on Siler pincushion cactus.

Construction of the pipeline may directly affect Siler pincushion cactus by destroying plants or by disturbing the soil. In the decision record (pages 2-3), the BLM provides "mitigating measures" that would reduce the adverse affects on the cactus. These measures include flagging the pipeline path so that all Siler pincushion plants will be avoided, closing pipeline route to vehicle use, and the placement of water bars to control erosion. These mitigating measures are included in the "Conservation Recommendations" section below.

Conservation Recommendations

Section 7(a)(1) of the Act directs Federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. The term "conservation recommendations" has been defined as suggestions of the FWS regarding discretionary measures to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding the development of information. The following actions are those the BLM has identified as actions that will be taken to minimize short- and long-term effects on Siler pincushion cactus from the proposed pipeline.

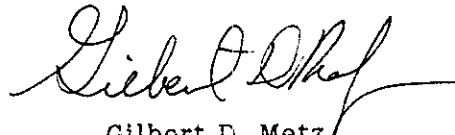
1. Pediocactus sleri plants will be avoided along the pipeline route.
BLM will flag and monitor to assure avoidance of individual plants.
2. After construction, the pipeline will be posted closed to vehicle use.
3. Once begun, pipeline construction will be carried through to completion without long breaks of time (i.e. excess of seven days) unless conditions described in item #4 (below) arise .
4. Construction will be temporarily stopped if conditions or situations arise which would cause unnecessary or undue impacts (i.e., wet soils, etc.).
5. Water bars will be placed across the pipeline where erosion hazards exist.
6. The pipeline scar will be dragged to smooth down berms and blend in with undisturbed surroundings.
7. The area will be cleaned of construction debris and litter.

In order for the FWS to be kept informed of actions that either minimize or avoid adverse effects or benefit listed species or their habitats, the FWS is requesting notification of the implementation of any conservation recommendations.

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 a new species is listed or critical habitat designated that may be affected by the action.

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

Sincerely,



Gilbert D. Metz
Acting Field Supervisor

cc: Regional Director, Fish and Wildlife Service, Albuquerque, New Mexico
(FWE/IIC)
District Manager, Arizona Strip District, Bureau of Land Management,
St. George, Utah
State Director, Arizona State Office, Bureau of Land Management,
Phoenix, Arizona

LITERATURE CITED

Cormier, G. 1985. Mineral Report: Pediocactus Sileri Cactus, Washington County, Utah. Bureau of Land Management, Arizona Strip District. Unpublished.

Swapp, C. 1985. Mineral Report: Mineral potential in vicinity of Pediocactus sileri habitat. Bureau of Land Management, Arizona Strip District. Unpublished.

Wenrich, K.J. and H.B. Sutphin. 1988. Recognition of breccia pipes in northern Arizona. Fieldnotes 18(1): 1-5.