

Handwritten notes: "Handwritten 3/5/83" and a signature "Ret" dated "2/8/83".

2-21-83-F-2  
(2-2-82-I-309)

March 8, 1983

MEMORANDUM

To: District Manager, Phoenix District Office, Bureau of Land Management, Phoenix, Arizona  
From: Field Supervisor, Fish and Wildlife Service, Ecological Services, Phoenix, Arizona  
Subject: Biological Opinion - Mine-X-Cavation Waterman Mountain Mining Plan

This is in response to your request of October 25, 1982, for formal Section 7 consultation as provided by the Endangered Species Act on your proposal to approve the Mine-X-Cavation Waterman Mountain Mining Plan. This mining operation occurs in Pima County, Arizona.

The following background information and biological opinion are based upon information furnished by the Bureau, data in our files, a meeting on the project, and discussions with people familiar with the endangered Nichol Turk's head cactus (Echinocactus horizontalonius var. nicholii) and the mining operation.

BACKGROUND INFORMATION

The Bureau of Land Management (Bureau) requested the Fish and Wildlife Service (Service) to inspect the area under consultation to determine if formal consultation was needed. This inspection was conducted September 16, 1982, and as a result, the Service requested the Bureau initiate formal Section 7 consultation (September 30, 1982). The inspection determined the Happy Jack Mine operation had impacted Nichol Turk's head cactus. On November 30, 1982, the Service conducted a meeting at Arizona State University to evaluate existing information on Nichol Turk's head cactus and the proposed mine plan. As a result of that meeting, the Service requested further information from the Bureau on December 21, 1982. The Bureau responded with information on January 6, 1983.

Nichol Turk's head cactus was listed as endangered November 28, 1979. This Arizona cactus of the Waterman and Vekol Mountains was, and continues to be, threatened by mining operations, urban development, and off-road vehicle use. Some individuals are used for landscaping and moderate domestic grazing does not appear to be adversely impacting this species.



This blue-green barrel cactus attains a height of 1 1/2 feet and 8 inches in diameter. It matures at 7 years of age and individuals are long lived, reaching at least 60 years old. The cactus is restricted to limestone derived soils in two distinctive habitat types: dissected alluvial fans at the mountain base and inclined terraces and saddles on the mountain proper. Seedling establishment, a rare event, requires sites which will protect young individuals. Surface rock, mature cactus, and shrubs act as nursery sites. The total population of an estimated 10,000 individuals occurs on private land and areas administered by the Bureau of Land Management and the Papago Indian Reservation. The general mining area provides habitat for Nichol Turk's head cactus that is estimated to support 10-15 individuals per acre.

This consultation concerns a proposed mining plan for a limestone strip mine and associated processing facilities. This mining operation includes roads, emergency airplane runway, crushing and screening equipment, stockpile area, and service facilities. The mine is on private land with the processing operation on Bureau administered land. Prior to this proposal, the mining operation had cleared an undetermined number of acres of private land supporting Nichol Turk's head cactus and 50 acres of Bureau land, 30 of which contained this cactus. Most of this clearing had been done in 1976 with the additional work conducted from 1977 through 1981.

The strip mine area will be expanded during the expected 50-year life of the project. Approximately 40 acres of this area which supports Nichol Turk's head cactus will be cleared, likely destroying the habitat for a small number of Nichol Turk's head cactus. Even though the proposed mine operation does not include plans to create new roads or add other facilities on Bureau land, it is expected to indirectly impact an additional 30 acre-buffer area of Bureau land that surrounds the existing cleared mine, potential strip mining area, existing roads, etc.

If erosion, air pollution, or yet unidentified mining agents cause adverse impacts to the Nichol Turk's head cactus in this buffer area, the worse case scenario would be the destruction of 30 acres of habitat that support about 450 individuals of Nichol Turk's head cactus.

#### BIOLOGICAL OPINION

We estimate the existing strip mine and construction and operation of auxiliary facilities have destroyed approximately 30 acres of Nichol Turk's head cactus habitat that may have supported 500 individuals. The proposed mine expansion will likely be less destructive to the cactus. Therefore, it is our biological opinion that approval of the mine plan is not likely to jeopardize the continued existence of Nichol Turk's head cactus.

However, the purposes of the Endangered Species Act are to provide a means whereby ecosystems upon which endangered and threatened species depend may be conserved and to provide a program that will delist these species. To these ends, this mine operation has been, and will foreseeably continue to be, counterproductive. It is important to provide for both the integrity of the

habitat and individuals themselves. In this light, we make the following recommendations.

1. Do not promote expansion of mining operations on Nichol Turk's head cactus habitat.
2. Restrict mine vehicles and workers to existing facilities.
3. Maintain existing facilities in a manner that will not adversely impact Nichol Turk's head cactus habitat.
4. Monitor Nichol Turk's head cactus in the vicinity of the mine to determine if it is being impacted by the mining operations. Keep us informed as to the results of this monitoring.
5. At the termination of mining operations, ensure that land reclamation measures will be advantageous to Nichol Turk's head cactus.
6. Inform prospective miners and others who may be involved in mining operations, assessment work, etc. that it is unlawful for any person subject to the jurisdiction of the United States to remove and reduce to possession any endangered or threatened plant species from areas under Federal jurisdiction.

#### INCIDENTAL TAKE

We estimate that future mining activities on both private and Bureau lands may take up to 100 individuals of Nichol Turk's head cactus. To minimize this impact, individual plants should be marked so they are obvious to people in those areas where it is reasonably foreseeable they will be adversely impacted. Individuals of Nichol Turk's head cactus that will be injured or destroyed by the mine operation should be moved to the closest safe, suitable habitat not already having the cactus on it. In order to monitor taking of Nichol Turk's head cactus, we require written notification of when, where, and why taking occurs and the disposition of the plants. If, in the course of the mining operation, the taking exceeds 100 Nichol Turk's head cactus, the Bureau should reinitiate consultation.

At this time we would like to emphasize the importance of early compliance with Section 7 responsibilities. It is the responsibility of every Federal agency to be aware of the locations of threatened and endangered species on lands under their administration and to assess their well being. Further

consultation is not required with the preceding exception unless new information becomes available that reveals impacts not considered in this opinion, the permittee wishes to expand his operation, or new species are listed that may be affected by this action.

cc: Director, FWS, Washington, D.C. (OES)  
Regional Director, FWS, Region 2  
Director, Arizona and Game Fish Department, Phoenix, Arizona

ES:PF0:LFitzpatrick:DMetz:mvd 3/8/83