2/18/98 - Copies to: Tricia
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United States Department of the Interior

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In Reply Refer To:
R2/ES-SE

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2-21-91-F-406

Memorandum

To: Area Manager, Bureau of Reclamation, Phoenix, Arizona

From: ACTING Regional Director, Region 2 Tom Ciccone

Subject: 97001513 7947: Proposed Tucson Aqueduct System Reliability Investigation Reservoir

The U.S. Fish and Wildlife Service (Service) has reviewed the project plans for the proposed Tucson Aqueduct System Reliability Investigation Reservoir (TASRI) in Pima County, Arizona. Your request for this formal consultation was received on March 28, 1997. This document represents the Service's biological opinion on the effects of that action on Pima pineapple cactus (Coryphantha scheeri var robustispina) in accordance with Section 7 of the Endangered Species Act of 1973 (Act), as amended, (16 U.S.C. 1531 et seq.).

This biological opinion is based on information provided in: (1) The August 1994 biological assessment; (2) the draft Environmental Impact Statement; (3) meetings and discussions following the issuance of the draft biological opinion on February 24, 1995, and the March 28, 1997, biological assessment; and (4) other sources of information. Literature cited in this biological opinion is not a complete bibliography of all literature available on the species of concern, the construction of a storage reservoir and its effects, or on other subjects considered in this opinion. A complete administrative record of this consultation is on file in the Arizona Ecological Services Field Office, 2321 West Royal Palm Road, Suite 103, Phoenix, Arizona 85021.

It is the Service's biological opinion that the proposed reservoir construction is likely to jeopardize the continued existence of Pima pineapple cactus.

CONSULTATION HISTORY

There have been other consultations on the Central Arizona Project (CAP), including one on the construction of the Tucson Aqueduct. The proposed project is part of the overall CAP project, but it was not included in any previous consultation. The Service advised the Bureau of Reclamation (BR) that the consultation, as formatted, did not include the effects of the action to endangered fish species in the Santa Cruz basin. These discussions were initiated several years earlier as part of the Gila River formal consultation but were separated from that consultation early in the process. In a memorandum to the BR dated

December 6, 1994, the Service requested that the TASRI consultation be folded into the ongoing consultation of CAP impacts to federally-protected aquatic biota in the Santa Cruz River Sub-basin. In a letter dated December 27, 1994, the BR declined to amend the consultation because of existing time constraints and requested the biological opinion for TASRI as presented in the biological evaluation. Later, shifting project priorities resulted in a decision by the BR to include impacts to aquatic species in the TASRI consultation. On June 23, 1997, the BR amended the February 1997 biological assessment to include impacts to the Gila topminnow, Sonora tiger salamander, and Chiricahua leopard frog. A second amendment to the biological assessment to include the desert pupfish was submitted to the Service on July 30, 1997. Both amendments concluded that the TASRI project would not affect any species.

The Service transmitted a draft biological opinion on TASRI to the BR on February 24, 1995, finding that the project, as proposed, jeopardized the continued existence of Pima pineapple cactus. Several meetings and discussions pertaining to TASRI have occurred since the issuance of the draft biological opinion. Only the most significant events within this consultation history framework are discussed in this document. On July 6, 1995, the Service sent to the BR a memorandum setting up a meeting for July 20, 1995. The memorandum also included the Service's reconsideration of the draft reasonable and prudent alternative (RPA) pertaining to the development of recreational facilities, given the BR's inclusion of recreation as part of the project's purpose. On July 20, 1995, the BR met with the Service, informing them that the draft biological opinion contained RPA actions that the BR believed were economically unfeasible and therefore, not reasonable.

During that meeting, a Service representative presented an option of land acquisition of similar habitat quality and acreage. The BR accepted this option as reasonable, but declined a July 15, 1997, request by the Service to place the proposed land acquisition action within their project description. Information regarding planned recreational facilities was provided to the Service on July 20, 1995. On February 28, 1996, the BR requested a withdrawal of the draft biological opinion and formal consultation based on a vote by the citizens of Tucson to ban the direct use of CAP water for the next 5 years. At this time, the BR also placed on indefinite hold the finalization of their draft Environmental Impact Statement. Congress has since mandated that the BR finalize this document by September 30, 1997. As a result of this, formal consultation was reinitiated on March 28, 1997. Additional meetings, correspondence, and conversations to discuss the possible sites for land acquisition, details regarding the ongoing consultation, and survey results occurred on August 1, 1995; August 11, 1995; August 16, 1995; September 7, 1995; October 4, 1995; October 16, 1995; October 23, 1995; December 7, 1995; January 8, 1996; January 24, 1996; February 6, 1996; May 28, 1997; June 6, 1997; June 26, 1997; and July 30, 1997. It is unknown at the time of the issuance of this opinion if the project will actually be funded and constructed.

The BR has expended considerable effort as part of their responsibility as a Federal agency under the Act. Of the total known number of individuals of Pima pineapple cactus, 54 percent were identified by the BR through range delineation studies, surveys, and ongoing refugia surveys. Work on identifying a possible refugium for Pima pineapple cactus has been ongoing since the July 20, 1995, meeting. The survey and identification of such a

site had been one of the original RPA alternative actions in the previous draft Biological opinion. A total of 4,124 hectares (ha) (10,186 acres) have been covered in eight survey projects including the survey effort that delineated the range of Pima pineapple cactus.

BIOLOGICAL OPINION

Description of Proposed Action

The proposed project consists of a 262-ha (647-acre) unlined reservoir on private land, and possibly on Pascua Yaqui Nation land, in the vicinity of Black Wash located south of Tucson's CAP Water Treatment Plant and due west of the Black Mountain Pipeline. While the precise location of the reservoir is still tentative, the total area involved in the construction of the proposed reservoir and associated facilities is 540 ha (1,334 acres). The reservoir could store up to 15,000 acre-feet (ft) of water in active storage that would be delivered via the existing Black Mountain Pipeline. During times of planned outages, water deliveries also would be made through the existing Black Mountain Pipeline. The reservoir also will be designed to simultaneously pump water in the same pipeline to users downstream of the reservoir. There will be no release of water into nearby drainages; all emergency evacuations will be as controlled releases back to the Tucson Water Treatment Plant. The embankment dam for the reservoir will be constructed with material excavated from higher elevations within the reservoir boundary site. While the precise location (actual footprint) of the reservoir has not been determined, the water surface area could reach a maximum of 263 ha (650 acres). Average water depth will be 7.6 meters (approximately 25 ft). A dike with diversion channel will collect and divert storm flows from the south edge of the reservoir to a detention basin on the west side. Storm flows from this detention basin will be released at a metered rate. The inundation zone will abut the northern boundary of the San Xavier District-owned lands.

The project need for TASRI has been defined as "providing up to 30 days worth of CAP water to the Tucson area CAP users during planned maintenance outages that would occur during the winter months" (BR 1994). Since the February 28, 1996, withdrawal from consultation, the BR has made it clear that actual construction of this project is unnecessary given the referendum passed by the citizens of Tucson to ban any direct use of CAP.

Part of the purpose of the project, as identified by the BR in the July 20, 1995, meeting, is recreation. According to the biological assessment, the Bureau met with Pima County Parks and Recreation Department on May 3, 1994; July 15, 1994; and in early 1997, to discuss recreational concepts at the reservoir. Recreation will be confined to the land acquired by the BR for the reservoir and its associated features. Tentative recreation designs provided in the July 20, 1995, meeting include a campground, parking areas, marina, swimming beach, headquarters for park ranger staff, boating beach, and picnic sites. The boating recreation was noted in the meeting as no wake, no ski, and trolling motor only. The entire area will be fenced and public access will be controlled. No access is planned to adjacent private land slated for development under the Star Valley Plan.

Status of the Species (Range-wide)

The final rule listing Pima pineapple cactus as endangered was published September 23, 1993 (58 FR 49875) and became effective on October 25, 1993. Critical habitat was not designated. Factors that contributed to this listing included habitat loss and degradation, habitat modification, distributional sparseness and rarity of plants, illegal collection threats, and difficulties in providing protection of an area large enough to maintain a functioning population. Biological information below is summarized from the proposed and final rules, and other sources as noted.

Pima pineapple cactus is a hemispherical succulent plant that may grow as a single-stemmed or multi-headed individual with the adults measuring 4-7 inches tall and 3-4 inches in diameter. This plant also may grow in clusters resulting from seed germination near the parent plant or the rooting of a tubercle at the base of the parent plant. Each spine cluster has one strong, straw-colored, hooked central spine and six radial spines on smaller individuals with large cacti having 10 to 15 radial spines (Benson 1982). Yellow flowers appear in mid-July following summer rains. Occasionally, spring to early summer rains occur and provide two flowering seasons. The fruits are green, succulent, and sweet and disappear rapidly from the plant (Mills 1991).

Pima pineapple cactus is found between 2,300 and 5,000 ft elevation in Pima and Santa Cruz counties, Arizona, and in northern Sonora, Mexico (Phillips et al. 1981). The range extends east from the Baboquivari to the Santa Rita and Patagonia Mountains. The northernmost boundary is near Tucson and the southern boundary of the range extends into northern Sonora. The species is rare within this range and suitable habitat within the area is not uniformly located. Pima pineapple cacti grow in alluvial basins or on hillsides in rocky to sandy or silty soils in semidesert grassland and Sonoran desertscrub. The species occurs most commonly in open areas with less than 10 percent slope and along the tops of alluvial bajadas nearest to the basins coming down off steep rocky slopes. The habitat is often dissected by a series of braided, dry washes. Total population estimates and estimates of suitable habitat for this species are poorly assessed due to the difficulty of finding this species in the field. Dominant plant species in these habitats vary but include white-thorn acacia, desert hackberry, mesquite, burrobush, snakeweed, burroweed, desert zinnia, both native and nonnative grasses such as Lehmann lovegrass, and various cacti (Mills 1991). These plant species may not necessarily be actual associates as many of them are more indicative of the poor land management regimes at Pima pineapple cactus sites.

Urban development associated with the rapidly expanding Tucson/Green Valley/Nogales corridor is one of the significant causes of habitat loss, degradation, and fragmentation for Pima pineapple cactus. This development has resulted in direct mortality of hundreds of Pima pineapple cactus. For example, the proposed "Star Valley Plan," is a high density housing development adopted (according to Scott Mills, consultant, Tucson, Arizona in Litt of July 13, 1995) by the Pima County Board of Supervisors in 1987 and since integrated into the Pima County Comprehensive Plan. The Star Valley Plan includes a range of residential houses from detached units at 5 to 8 houses per acre to multi-family units at about 20 per acre. Urban services such as schools and businesses are planned along with

infrastructure such as utilities and roadways. This private action has been initiated and will eventually impact approximately 1,450 acres of occupied habitat and an unknown number of Pima pineapple cactus individuals. The Star Valley Plan area borders the TASRI site. As the BR has indicated, there will not be access from this subdivision to the reservoir site, effects of this project are considered here rather than as interrelated or interdependent effects of the proposed Federal action.

Mining also has resulted in the loss of hundreds, if not thousands, of acres of potential habitat throughout the range of this species. Much of the mining activity has been occurring in the Green Valley area, which is the center of the species' distribution. The expansion of urban centers and mining activities will continue to eliminate habitat and individuals, and result in habitat fragmentation.

The protection of habitat and individuals is complicated by the varying land ownership within the range of the species. Approximately 10 percent of the habitat for Pima pineapple cactus is held in Federal ownership. The remaining 90 percent is on tribal, state, and private lands. Most of the federally-owned land is either at the edges of the range or in scattered parcels. The largest contiguous piece is the Buenos Aires National Wildlife Refuge, located at the southwestern edge of the species range.

Under Section 9 of the Act, the taking of listed animals is specifically prohibited. These prohibitions apply regardless of landownership status. For listed plants, these prohibitions and the protection they carry do not apply. Only listed plant species are protected from deliberate removal from Federal lands. There is no protection against removal from, or destruction of plants on, any nonfederal lands under the Act. The Arizona Native Plant Law provides some protection against illegal take but does not provide for protection of plants in place through restrictions on development activities.

Section 7 protection extends to listed plants regardless of landownership. However, without Federal agency involvement, Section 7 does not apply to projects on nonfederal lands. Much of the development likely on state or private lands has a limited exposure to Federal regulatory requirements. Additional Pima pineapple cactus and its habitat on these lands are almost certain to be lost as development in southern Arizona continues. Efforts to transplant individual cacti to other locations have had only limited success; however, transplantation alone provides little benefit because the habitat is still lost. There is a higher likelihood of development projects on tribal lands having a Federal regulatory connection because many projects are Federally-funded or may have Department of the Interior trust responsibilities.

Illegal collection of Pima pineapple cactus has been documented on a number of occasions. Some incidents indicate that collectors are interested specifically in Pima pineapple cacti while other incidents indicate an indiscriminate collection of all native cacti in the immediate area.

Even on lands receiving some protection under the Act, there are other threats to Pima pineapple cactus that may reduce population size, vigor, and viability by limiting seedling establishment. Currently, most of the range of Pima pineapple cactus outside rapidly

urbanizing areas is used for livestock grazing. Extreme overgrazing accompanied by severe drought at the turn of the century, and some continuing poor livestock management practices, have significantly altered the grassland/desertscrub ecosystem upon which Pima pineapple cactus depends. Habitat effects of livestock overuse include erosion, hydrologic and microclimatic changes, invasion or expansion of woody perennials and exotic vegetation, and shifts in the composition, density, relative abundance, distributional mosaics and vigor of native plant species. Some range management practices such as imprinting, chaining, ripping, and seeding of nonnative grasses have contributed to the modification and loss of habitat and the loss of plants. Overgrazing in some areas continues today. The extent to which grazing is altering the existing vegetation, disrupting nutrient cycling, or altering the edaphic (stability and water infiltration ability) basis of the system by damaging natural microbiotic and cryptogamic crusts over the soils at Pima pineapple cactus sites is not known; however, long-term grazing in arid environments results in these direct and indirect ecosystem impacts (Schlesinger et al. 1990, Fleischner 1994). The indirect effects of overgrazing are less apparent; however, these effects may be serious and may prohibit the continued sustainability of Pima pineapple cactus populations.

This species' interactions with other plants and animals also are poorly understood. The extent to which other plants may act as "nurse plants" to seedlings, providing shelter from predation, shading, creating a more favorable microclimate to maintain seedling establishment, higher nutrient levels, or other favorable edaphic factors has not been fully investigated (Barbour et al. 1979, Nabhan 1987).

The spread of nonnative plant species such as Lehmann lovegrass and Mediterranean grass has altered the compositional structure of the grassland ecosystem upon which Pima pineapple cactus depends. Because the nonnative grasses grow in denser, more contiguous patches, fire movement through this habitat has been drastically altered. While the historic grassland communities were subject to fire on a regular basis, the grass species were not distributed as contiguous stands but were widely separated mosaics upon the landscape. This allowed for openings not subject to wildfire. Cacti in the more open areas would not have been as susceptible to both direct fire damage or later predation by animals such as javelina with the fire-caused depletion of barrel cacti as a food source.

Although there appears to be considerable habitat available for Pima pineapple cactus, the low density of plants within that suitable habitat results in small populations that are becoming increasingly isolated as urban development, mining, and other commercial activities continue to detrimentally impact the species' habitat. The remaining habitat also is subject to degradation from poor land management practices, increased recreational use when adjacent to urban expansion, and the continuing aggressive spread of nonnative grasses into its habitat. Habitat fragmentation and degradation will likely continue into the foreseeable future and there is little Federal oversight on those uses that would protect the habitats. Even habitats protected under the Act have been modified and may not be able to support viable populations of Pima pineapple cactus over the long-term.

Status of the Species (Within the Action Area)

The action area is that area to be affected directly or indirectly by the Federal action and not only the immediate area involved in the action. Given that the Federal action is to provide a degree of reliability on the use of CAP water to the City of Tucson, the Service views the action area as somewhat larger than the acreage to undergo direct impacts as a result of reservoir construction. However, little information is available to the Service at this time on the indirect effects of providing that reliability. Therefore, the discussion remains focused on the portion of the action area to be directly affected.

The TASRI project area is in a lightly developed suburban area west of Tucson. There are existing road facilities and structures in the immediate area of the reservoir site. The existing Black Mountain Pipeline, part of the Tucson Aqueduct, and the subject of consultation in the 1980's is adjacent to the TASRI site. The reservoir site itself shows evidence of human actions up to the present. Many roads and trails bisect the area. Off-road vehicle use is evident in many locations. Berms to deflect wash flows, a trash dump and other signs of unauthorized dumping, and an abandoned agricultural area are all present at the site.

Tribal lands belonging to the Pascua Yaqui Nation and the San Xavier District of the Tohono O'odham Nation are located east and south of the proposed reservoir site. Depending on the actual footprint of the reservoir (as yet undetermined), a portion of it may extend onto lands of the Pascua Yaqui Nation. Tribal development on the Pascua Yaqui lands is concentrated on the eastern portion of the reservation. A housing development was constructed on the western part of the reservation. This housing development underwent section 7 consultation and resulted in an onsite refugium of habitat occupied by Pima pineapple cactus being set aside by the Pascua Yaqui Nation.

The new farm development of the San Xavier District is a Federal project that has been on hold since 1989. This project, if implemented, would impact an estimated 5,921 ha (14,625 acres) and an estimated 338 individuals of Pima pineapple cactus. The project is located due south of the proposed reservoir site. Factors contributing to the delay of this project remain unresolved. The biological assessment for this project was completed in December of 1987 and consultation was completed; however, Pima pineapple cactus was not considered in the Service's opinion as it was not a listed species at that time. This project will be removed from the environmental baseline if consultation is reinitiated in the future or if the Service is notified that this proposal will not be implemented.

Surveys conducted by the BR have identified approximately 520 individuals of Pima pineapple cactus within the area of the reservoir and associated facilities (reference Figure 3 of Biological Assessment). Cacti densities within and surrounding the reservoir site range from 1 plant/6.5 acres to 1 plant/5 acres. With development proposed on both private and tribal lands in the action area, it is likely that most, if not all, of this habitat will be lost or fragmented to the point where populations are no longer viable.

Effects of the Action

The direct effects to Pima pineapple cactus as a result of the proposed TASRI reservoir include the loss of at least 214 cacti and 540 ha (1,334 acres) of habitat. All individual cacti and habitat are assumed lost to the project. Future possibilities for onsite recovery do not exist. All project impacts to Pima pineapple cactus are planned to occur only within the boundaries set for the reservoir and its associated features. Relocation of an existing transmission line will occur within existing rights-of-way with no additional impacts to Pima pineapple cactus. No additional impacts as a result of recreation being added as a project purpose will occur onsite. The property will be fenced to limit and control public access.

The effects to Pima pineapple cactus as a result of the proposed TASRI reservoir include increased habitat fragmentation of the range of the species in an area already undergoing urbanization with limited opportunity for Federal involvement and therefore the review of actions under Section 7 of the Endangered Species Act. This project will have direct impacts to 13.3 percent of the known number of individuals of Pima pineapple cactus. While it is likely that more cacti occur than what is presently known because of the landownership patterns of the habitat containing Pima pineapple cactus, the Service is concerned about the proportion of the verified population that will be lost.

Additional effects interrelated to this reservoir include the possible construction of tourism infrastructure, such as a casino and a replica village on lands of the Pascua Yaqui Nation as presented by the BR in the July 20, 1995, meeting. Quantitative data on those possible impacts to Pima pineapple cactus is unavailable; however, it is unlikely that the site selection for that tourism development would remain in the absence of the proposed reservoir.

The Pima County Parks and Recreation Department also may propose additional recreational amenities offsite of the reservoir, but related to its existence in the future. No specific plans have been developed at the time to the Service's knowledge; therefore, no quantitative data is available to address those interrelated impacts. The BR notes in their biological assessment that reinitiation of consultation may be necessary at the time such plans are developed due to the interrelated nature between this proposed Federal project and recreation.

Cumulative Effects

Cumulative effects include the effects of future state, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section, because they require separate consultation pursuant to Section 7 of the Act.

As described previously, development can be expected to increase. Private lands not presently developed in the action area are likely to become urbanized. In any event, both state and private lands will likely continue to be subject to livestock overuse. Private lands not recently developed are likely to become so, and state lands may be sold or leased for purposes that result in impacts. Much of this development will have little or no Federal agency involvement. Without protection under the Act, the only protection available is

through the Arizona Native Plant Law, which only provides for salvage for scientific and educational purposes. Regardless of salvaged cacti transplant success, the habitat would be lost.

Much of the habitat and the individuals of the species are at significant risk of destruction or continued degradation. Without the protection under section 9 that applies on non-Federal lands, there is little regulatory authority to use in reducing those risks.

Conclusion

After reviewing the current status of Pima pineapple cactus, the environmental baseline for the action area, the effects of the proposed action and the cumulative effects, it is the Service's biological opinion that the proposed action is likely to jeopardize the continued existence of Pima pineapple cactus. No critical habitat has been designated for this species, therefore, none will be affected.

Because there are extensive impacts and no Federal protection from take of the cactus on private lands, individual Federal actions on or off Federal lands are critical to the survival and recovery of the species. The project under consultation would remove 13.3 percent of the known population of Pima pineapple cactus. Much of the remaining range of the species has not been surveyed, so the effect to the total population is not known. Much of the total population, including that on the TASRI site, is at risk regardless of this project. The Service must take into account all factors affecting a species when determining if a particular project is likely to jeopardize the continued existence of a species, including the current status of the species and expected cumulative effects of non-Federal activities. In this case, the expected effects of continued urbanization, and continuing effects of grazing, indicate that baseline status of the species is very precarious. When the range-wide status of the species is vulnerable and non-Federal impacts are substantial, Federal actions with comparatively small effects can have very significant effects in terms of survival of the species.

Reasonable and Prudent Alternative

Regulations (50 CFR §402.02) implementing Section 7 define (RPA) as alternative actions, identified during formal consultation, that; (1) Can be implemented in a manner consistent with the intended purpose of the action; (2) can be implemented consistent with the scope of the action agency's legal authority and jurisdiction; (3) are economically and technologically feasible; and (4) would, the Service believes, avoid the likelihood of jeopardizing the continued existence of listed species or resulting in the destruction or adverse modification of critical habitat.

Any RPA developed to address jeopardy to the Pima pineapple cactus must focus on the preservation of at-risk habitats. At-risk habitats include those state and private lands containing Pima pineapple cactus subject to a high likelihood of development or other habitat impacts. Development of a protected refugium has been identified as a critical recovery item. It is the establishment of the refugium that forms the base of the RPA developed for this project.

The RPA consists of several individual actions. To accept and fully implement the RPA, all actions must be completed by the BR or their designated representative in coordination with the Service.

The RPA actions are:

A. All individual cacti on the TASRI site will be salvaged prior to construction and relocated to federally-owned lands within the range of the species. Lands previously acquired by the BR for the CAP may be suitable for this purpose or other lands of appropriate habitat owned by the BR or another Federal entity could be used. Transplantation techniques used will be based on the best available information at the time of the salvage. Success of the transplant will be monitored for 5 years. Monitoring is to be conducted once a year in the post-monsoon season. The BR will coordinate with the Service in the development of a monitoring plan for the transplant.

B. The BR participation in the selection of an appropriate refugium site for this species has been ongoing since the issuance of the draft biological opinion on February 24, 1995. The BR will continue this active participation in site acquisition and management. Participation will include attendance at meetings, coordination with the Service regarding document review, and contributing funds or other resources for any surveys of proposed refugia or other information needs.

C. The BR will obtain non-Federal lands as replacement habitat for impacts to Pima pineapple cactus as a result of TASRI. Based on discussions and agreements of the July 20, 1995, meeting, this replacement habitat will be (at a minimum) of similar size, number of cacti, and of similar or better habitat quality than that being lost to TASRI.

D. The BR will develop and implement the necessary infrastructure needed to manage the refugium site and will coordinate with the Service in the development and implementation of a management plan for the refugium site.

E. The BR will be an active participant in the recovery planning process for Pima pineapple cactus, including but not limited to, providing technical assistance in the form of biological staff or other professional staff time to private, state, tribal, and other Federal agencies in the expansion of this refugium site and development of other refugia sites to provide for the continued existence of Pima pineapple cactus.

Because this biological opinion has found jeopardy, the BR is required to notify the Service of its final decision on the implementation of the reasonable and prudent alternatives.

Incidental Take

Sections 7(b)(4) and 7(o)(2) of the Act do not apply to the incidental take of listed plant species. However, protection of listed plants is provided to the extent that the Act requires a Federal permit for removal or reduction to possession of endangered plants from areas under Federal jurisdiction, or for any act that would remove, cut, dig up, or damage

or destroy any such species on any other area in knowing violation of any regulation of any State or in the course of any violation of a State criminal trespass law.

Conservation Recommendations

Sections 2 (c) and 7(a)(1) of the Act direct 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 Service suggestions regarding discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, or regarding the development of information. The recommendations provided here relate only to the proposed action and do not necessarily represent complete fulfillment of the agency's section 7(a)(1) responsibility for the species.

The Service recommends the following actions:

A. The BR contribute funds or other resources to specific research projects on the ecology of Pima pineapple cactus.

B. The BR work cooperatively with the Pascua Yaqui Nation and the San Xavier District of the Tohono O'odham Nation to provide technical assistance and resources in the management of Pima pineapple cactus on their lands.

Reinitiation - Closing Statement

This concludes formal consultation on the actions outlined in the request. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) The amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action.

For further information please contact Angie Brooks or Tom Gatz, Arizona Ecological Services Field Office, at (602) 640-2720.

cc: Chief, Fish and Wildlife Service, Arlington, VA (DES)
Director, Arizona Game and Fish Department, Phoenix, AZ
Chairman, San Xavier District, Tohono O'odham Nation, Tucson, AZ
Chairman, Pascua Yaqui Nation, Tucson, AZ
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