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U.S. Fish and Wildlife Service
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In Reply Refer To:
AESO/SE
22410-2006-F-0537

March 22, 2007

Ms. Cindy Lester
Chief, Arizona Section, Regulatory Branch
U.S. Army Corps of Engineers
Arizona-Nevada Field Office
3636 North Central Avenue, Suite 900
Phoenix, Arizona 85012-1936

RE: 2005-02167-MB

Dear Ms. Lester:

Thank you for your March 21, 2006, request for formal consultation with the U.S. Fish and Wildlife Service (FWS) pursuant to section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. *et. seq.*, ESA). At issue are impacts that may result to the endangered Pima pineapple cactus (*Coryphantha scheeri* var. *robustispina*, PPC) from the proposed issuance of a Section 404 permit under the Clean Water Act (CWA) to construct a residential subdivision, Fagan Ranch, involving the discharge of fill material in the unnamed washes at Camino Aurelia and Houghton Road (Section 25, T17S, R15E) located in Corona de Tucson, Pima County, Arizona. You have determined that the project may adversely affect PPC.

This biological opinion (BO) is based on information provided in the February 2006 biological assessment (BA) (prepared by WestLand Resources, Inc.), two memos received during the comment period on the draft BO (WestLand Resources, Inc), and other sources of information. Literature cited in this draft BO is not a complete bibliography of all literature available on the species of concern, the effects from residential development, the project area, or other subjects considered in this opinion. A complete administrative record of this consultation is on file at the Arizona Ecological Services Office.

Consultation History

March 24, 2006: We received your request for formal consultation.

July 21, 2006: We requested a 60-day extension to complete the draft BO.

October 16, 2006: We transmitted the draft BO to you.

December 1, 2006: We requested an additional extension to allow the applicant to review the draft BO.

January 30, 2007: We received the first set of comments on the draft BO.

February 7, 2007: At the request of the applicant, we requested a 45-day extension to complete the BO.

March 8, 2007: We received the second set of comments on the draft BO.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

The applicant proposes to construct a residential and commercial development, known as Fagan Ranch, on an approximately 548-acre property located in the western foothills of the Northern Santa Rita Mountains. The proposed development will include a mix of low- and moderate-density residential communities (159 acres), low-density residential and estate lots (154.8), a neighborhood center (20.4 acres), a commercial area (8.9 acres), open space (172.2 acres), and roads and utilities (13.2 acres). A 40-acre portion of the parcel, to the east, and detached from the remainder of the parcel, is not included in this analysis of effects because no development is proposed at this time.

There were 65 PPC found on the parcel. According to the consultant, an estimated 99.6 acres of suitable PPC habitat were delineated on the site; of that, 78.1 acres will be impacted by the development. Approximately 80% of the known PPC on site (52) will be impacted by the proposed development.

Proposed Conservation Measures

The applicant and Corps of Engineers (COE) propose the following conservation measures to minimize and/or offset the effects to PPC and its habitat.

- The applicant proposes to purchase 107 credits in a FWS-approved conservation bank for PCC or purchase comparable PPC habitat in that amount (107 acres) to replace PPC habitat that will be affected by the proposed development. Credits or property will be secured before the 404 permit is issued.
- Designated open space to be preserved on the parcel will protect an additional 20.5 acres of PPC habitat, along with 7 PPC. An additional 3.4 acres of PPC habitat identified along washes will be preserved inside of conservation easements that will be established along the drainages.

STATUS OF THE SPECIES

Our February 3, 2006 Biological Opinion for the Ocotillo Preserve Residential Subdivision (02-21-02-F-0210 and 02-21-04-F-0160) included a detailed and still-current Status of the Species discussion for the PPC and is incorporated here by reference. That biological opinion is available on our website at <http://www.fws.gov/arizonaes>, under Document Library; Section 7 Biological Opinions.

ENVIRONMENTAL BASELINE

The environmental baseline includes past and present impacts of all Federal, State, or private actions in the action area, the anticipated impacts of all proposed Federal actions in the action area that have undergone formal or early section 7 consultation, and the impact of State and private actions which are contemporaneous with the consultation process. The environmental baseline defines the current status of the species and its habitat in the action area to provide a platform from which to assess the effects of the action now under consultation.

The action area under consultation includes the footprint of the project as well as other areas affected by the proposed action. For this project we define the action area as the footprint of the entire development (548 acres) and a 0.25-mile area surrounding the project boundaries, the latter of which encompasses the area most likely to incur indirect effects (e.g., recreational impacts) from the housing development. The action area is surrounded by a mixture of low-density residential developments, undeveloped private lands, and State lands to the east and south; undeveloped private lands and low-residential development to the west, and low- to medium-density development to the north. The project area has been grazed for over 100 years and is located next to the Fagan Ranch headquarters.

The property ranges in elevation from 3,540 to 4,100 feet above mean sea level. The parcel is located along the western foothills of the northern Santa Rita Mountains. The three major drainages on the parcel drain watersheds that approach, but do not reach, the summit of Mt. Fagan. The vegetation is characteristic of the semi-desert grassland community with elements of the Arizona upland subdivision of the Sonoran desertscrub community.

According to BA, the surficial geology of the site was previously mapped and verified on the ground by the project consultants. Several geologic layers correspond to PPC presence. All of the PPC were found on the M1, O, and Y1 units, which comprise 375.67 acres (approximately 68 percent) of the project site, according to Tables 2 and 3 of the BA. The units correspond to areas where PPC are usually found, the older alluvial deposits. No PPC were detected within active channels or on bedrock surfaces. This would indicate that there are approximately 376 acres of PPC habitat on the project site. The BA states that there are 130.8 acres of suitable habitat on the project site, but gives no rationale for this number. A total of 53 PPC were detected on the site. The BA states that approximately 106.9 acres of PPC habitat will be affected by the proposed development, either within development parcels or within planned road alignments; and that 20.5 acres of PPC habitat and 7 PPC will be preserved in designated open space north of Camino Aurelia, and 3.4 acres of PPC habitat will be preserved in conservation easements placed on drainages within the development.

Additional information, maps, and other details are provided in the February 2006 BA, supplemental materials, and are incorporated herein by reference. We do not know how much PPC habitat is within the 0.25-mile defined action area surrounding the project site, or how many individual cacti might be present. However, based on aerial imagery, it appears that PPC habitat exists within this portion of the action area.

EFFECTS OF THE ACTION

Effects of the action refer to the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action, which will be added to the environmental baseline. Interrelated actions are those that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration. Indirect effects are those that are caused by the proposed action and are later in time, but are still reasonably certain to occur.

The proposed action will result in the loss of up to 376 acres of PPC habitat and 52 PPC. The applicant has agreed to protect 172.2 acres in designated open space (an agreement made with Pima County), which supports 20.5 acres PPC habitat. Conservation easements will be placed on the main drainages of the parcel, resulting in protection of 16 acres, which support 3.4 acres of PPC habitat. However, no mention is made of the entity responsible for holding and enforcing the conservation easements, or how they will be monitored in perpetuity. We cannot therefore assume that the PPC and habitat would not be affected by residents' use of their property (e.g. creating trails, landscaping, bike riding, livestock, and pets), especially without oversight and enforcement by an individual or organization.

The BA does not fully describe why only a portion of the area that supports PPC is included as habitat. The discussion in the BA regarding surficial geology units and their relationship to PPC distribution indicates that the parcel supports approximately 376 acres of habitat, yet the BA states that only 106.9 acres have been delineated as PPC habitat. Based on the materials provided, it is not clear why the entire 376 acres (encompassing all the surficial geology units that support PPC) were not deemed PPC habitat. In response to our request, the applicant and the consultant provided two memos offering further clarification of the habitat delineation (WestLand Resources, Inc. 2007). Basically, the memos provided additional information on the surficial geology, life stages of the cacti on site, and jackrabbit observations. The information provided the reasoning for delineating the habitat (reduced to 99.6 acres) on the site that was thought to provide the best chance for sustained aggregates of PPC in the future. We believe that habitat encompasses the areas where the majority of the PPC were found, along with other portions of the site that supported individuals of PPC. We use the definition of habitat as the environment the species inhabits, including the biotic and abiotic factors that influences the species (Gurevitch et. al 2006)¹. We agree that the majority of the PPC (52), or 80 percent, are associated with the red clay (argillic) layer, but 13 PPC (20 percent) were found on soil surfaces of various ages. The consultant delineated 99.6 acres of habitat associated with the argillic layer, but did quantify the amount of habitat on the site associated with other surficial units where PPC were found (ie: Q1-y where six PPC were found and Qy1 where four PPC were found).

¹ Gurevitch, Jessica, S.M. Scheiner, and G.A. Fox. 2006. *The Ecology of Plants*. Sinauer Associates, Inc. Sunderland, MA.

There was no evidence presented on why the other surficial geology units where PPC were found are not habitat, other than observations on the projected age of the plants, probability of survival, and jackrabbit behavior. If those cacti produced seeds in their lifetime, contributing to the overall population dynamics, the area they occupy would be considered habitat. We assume that the finer mapping units (Q1-y, Qy1) fall within Jackson's M, O, and Y1 surficial geology units. Therefore, based on the information provided in the BA and the two memos, we believe the site supports up to 376 acres of PPC habitat, all of which will be affected by the proposed action. Twelve additional cacti were found on the site in February 2007.

Additionally, PPC in the action area will likely be affected indirectly by the project. New residential developments often result in the introduction of non-native plants into an area, creating more opportunity for degradation of the remaining natural habitat. Off-road vehicle activity and increased recreational use surrounding the development can affect habitat outside the development. These indirect effects will contribute to the overall deterioration of the remaining PPC in this area. While some conservation may be achieved by means of designated open space and conservation easements, there is no evidence to support this type of measure as producing long-term protection for PPC and its habitat. In this case, no mention is made of the entity responsible for holding and enforcing the conservation easements, or how they will be monitored in perpetuity. We cannot therefore assume that the PPC and habitat would not be affected by residents' use of their property (e.g. creating trails, landscaping, bike riding, livestock, and pets), especially without oversight and enforcement by an individual or organization.

The applicant has agreed to purchase 107 acre-credits from a FWS-approved PPC conservation bank, thereby protecting approximately 107 acres of PPC habitat, to offset the loss of PPC habitat associated with this proposed project. We believe based on the information provided, that the site supports up to approximately 376 acres of PPC habitat that will be affected by the proposed action.

This construction of this project will result in the loss of 52 PPC and approximately 376 acres of PPC habitat. This represents less than one percent of the known PPC population and extant habitat.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, Tribal, 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.

The action area is bordered on all sides by undeveloped State and privately owned lands mixed with existing and newly constructed residential developments. Medium- to low-density developments currently exist to the west and north, but it is still relatively undeveloped to the south and east. Undeveloped land often provides open space for the residents of developments in the area. The use of open lands for recreation, off-road vehicle use, and illegal dumping of trash can ultimately lead to habitat degradation and the possible loss of PPC. If adjacent lands are developed, further fragmentation of the larger PPC population in the general area will result.

Development in this geographic region is on the rise and is likely to continue to increase. Lands not presently developed in the area are quickly becoming urbanized.

CONCLUSION

After reviewing the current status of PPC, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is our biological opinion that the proposed action is not likely to jeopardize the continued existence of PPC. No critical habitat has been designated; therefore, none will be affected. While we remain concerned about the status of the PPC as referenced in this BO, we make this determination because:

- The applicant will purchase approximately 107 credits in a FWS-approved conservation bank for PPC, to offset part of the loss of approximately 376 acres of PPC habitat due to development of the parcel. This conservation action will result in the protection of 107 acres of PPC habitat, in perpetuity, in the conservation bank. In addition, there will be 23.9 acres of PPC habitat protected on-site, in designated open-space and conservation easements. While, as discussed above, we question the effectiveness of open space and easements as having long-term conservation value for PPC because of the lack of oversight and management and monitoring, the loss of these 52 PPC and the 376 acres of PPC habitat comprise less than one percent of the known population and extant habitat.

INCIDENTAL TAKE STATEMENT

Sections 7(b)(4) and 7(o)(2) of the ESA do not apply to listed plant species. However, protection of listed plants is provided to the extent that the ESA 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. Neither incidental take nor recovery permits are needed from us for implementation of the proposed action.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the ESA directs Federal agencies to use their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

- We recommend that the PPC conservation bank credits be secured through a Notarized Credit Agreement before construction begins.
- We recommend that an appropriate responsible party hold the conservation easements and that a monitoring plan be developed for the conserved lands to insure that their conservation benefits do not degrade over the long-term.

- We recommend that additional PPC and habitat be protected that will offset the remaining PCC habitat that will be lost or modified by the proposed development.

In order that we are kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, we request notification of the implementation of any conservation recommendations.

REINITIATION NOTICE

This concludes formal consultation on the Fagan Ranch development. 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 retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded (not applicable to this consultation); (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 not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action.

We appreciate your efforts to identify and minimize effects from this project. Please contact Mima Falk at (520) 670-6150 (x225) or Sherry Barrett at (520) 670-6150 (x223) if you have further questions. Please refer to consultation number 22410-2006-F-0537 in future correspondence regarding this project.

Sincerely,

/s/ Steven L. Spangle
Field Supervisor

cc: U.S. Army Corps of Engineers, Tucson, AZ (Attn: Marjorie Blaine)
Assistant Field Supervisor, Fish and Wildlife Service, Tucson, AZ

Habitat Branch Chief, Arizona Game and Fish Department, Phoenix, AZ
Regional Supervisor, Arizona Game and Fish Department, Tucson, AZ
WestLand Resources, Inc., Tucson, AZ.
Arizona Department of Agriculture, Phoenix, AZ (Attn: Jim McGinnis)