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U.S. Fish and Wildlife Service
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In Reply Refer To:
AESO/SE
22410-2006-F-0138

August 24, 2006

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: 2004-01601-MB

Dear Ms. Lester:

Thank you for your November 21, 2005, 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.*, Act). 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, Diablo Village, and a detention basin involving the discharge of fill material in unnamed washes southeast of the intersection of Valhalla and Valencia Roads (Section 16, T15S, R12E) located in 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 November 2005, biological assessment (BA) and the March 2006 BA Supplement (prepared by WestLand Resources, Inc.), meetings, and other sources of information. Literature cited in this 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

November 1, 2005: We met with the applicant and their consultant to discuss project effects and potential conservation measures.

December 2, 2005: We received your request for formal consultation.

March 24, 2006: We received supplemental information to the biological evaluation previously submitted.

June 29, 2006: We transmitted the draft Biological Opinion to you.

August 16, 2006: We received your comments on the draft Biological Opinion.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

The applicant proposes to construct a residential development, known as Diablo Village, and a retention/detention basin on an approximately 191-acre parcel of vacant land located in Pima County, Arizona (T15S, R12E, Section 16, South $\frac{3}{4}$ and West $\frac{1}{2}$). The residential development will encompass 86.5 acres (45.3 percent) of the east side of the parcel, and the retention/detention basin will encompass 103.7 acres (54.3 percent) on the west side of the parcel. The subject property is located southeast of the intersection of Valhalla and Valencia Roads. The design of the residential portion of the proposed project includes 334 lots, with an overall density of 5.7 residences per acre. The retention/detention basin will be comprised of six individual basins designed to reduce flooding in flood-prone areas down gradient.

A total of 63 PPC (53 live plants) were detected on the 191-acre site during a survey completed in April 2005 and additional site visits from November 2005 to January 2006. Additional information, maps, and other details are provided in the February 2005 BA, and are incorporated herein by reference.

Proposed Conservation Measures

The applicant and Corps of Engineers Corps propose the following conservation measures to minimize the effects to PPC and its habitat.

- The applicant and Pima County will purchase 62 acre-credits to offset the effects to PPC by development of the site. A Notarized Credit Agreement will be sent to the Corps upon completion of the bank transaction. No ground-disturbing activity may take place before the Agreement has been signed and sent to the Corps. All PPC within areas to be disturbed on the project site will be moved, in accordance with the Arizona Native Plant Law, to appropriate habitat on the property. This relocation site will be preserved.

STATUS OF THE SPECIES

PPC

Our November 23, 2005 Biological Opinion for the Ocotillo Preserve Residential Subdivision (02-21-02-F-0210 and 02-21-04-F-0160) included a detailed Status of the Species for the PPC. This biological opinion is available on our website at <http://www.fws.gov/arizonaes>, under

Document Library; Section 7 Biological Opinions. Herein we incorporate that status discussion by reference.

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 (191 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 bordered by medium- (1-1.7 residences per acre) to high-density (5.3 residences per acre) residential housing along the northern and eastern boundaries, while the southern boundary is bordered by low-density (0.25-0.83 residences per acre) housing. The western boundary is bordered by undeveloped State Trust Land.

The property ranges in elevation from 2,490 feet above mean sea level (amsl) to 2,530 feet amsl and the surficial geology is mainly comprised of alluvial deposition. The property is transitional between the Arizona upland subdivision of the Sonoran desertscrub biotic community and the semi-desert grassland biotic community. All of these elements characterize suitable PPC habitat. Approximately 1.93 acres of this property are delineated as jurisdictional waters, and do not comprise suitable PPC habitat. Therefore, a total of approximately 189 acres of suitable PPC habitat exists on this property. Even though portions of the property appear to be degrading due to soil erosion, off-road vehicle use, wildcat dumping, and the like, the biotic community and underlying surficial geology remain, and suitable PPC habitat exists in all areas except the jurisdictional waters.

The applicant has provided a spatial analysis of the development property delineating approximately 62 acres of PPC habitat. This analysis was based on the relationship of the *in situ* PPC with coppice mounds and bursage (*Ambrosia deltoidea*). We concur that, at a minimum, there are approximately 62 acres of suitable, occupied habitat on site, but believe that the current distribution of the PPC on the site does not necessarily represent the only suitable habitat on the site. We concur that the site is experiencing erosional processes and degradation from unauthorized off-road vehicle use.

A total of 53 live and 10 dead PPC were detected, which equals a density of 0.33 PPC/acre (63 PPC on 189 acres). This density falls within our calculated high density (>0.3 PPC/acre), indicating high-quality PPC habitat. Our density calculations were determined using all the projects that have undergone section 7 consultations, along with more recent survey information.

This development will result in the removal of suitable PPC habitat on-site (approximately 189 acres) and the removal and relocation of 53 individual PPC.

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 directly affect PPC through the destruction of approximately 189 acres of PPC habitat and the translocation of 53 PPC to a preserved site in what the BA describes as appropriate habitat on the property. However, there is no mention of where this site is or how it will be preserved. No PPC will be preserved in place, and no PPC habitat will be preserved within the development.

Transplanted PPC have low levels of survival, and past efforts to transplant individual PPC to other locations have had only limited success. On a project in Green Valley, where transplanted PPC were monitored for survival for two years following their transplant, there was a 24% mortality rate (SWCA, Inc. 2001). On another project in Green Valley, PPC transplanted in 2001 showed 66% mortality after two years (WestLand Resources, Inc. 2004). On another property in Green Valley, there was at least 15% mortality of transplanted PPC after 4 months (Pima County Development Services 2003). Moreover, these transplant efforts took place in habitat deemed suitable for PPC. Within Diablo Village Estates, virtually all of the land and suitable PPC habitat will be developed either as residences or retention/detention basins. This means the transplanted PPC within this project are not likely to contribute significantly to the overall population, but rather are likely to be lost to the population. There is also the unquantifiable loss of the existing PPC seed bank associated with the loss of suitable habitat.

PPC that will not be directly affected by the actual development activities, but that occur within the action area, will almost certainly be indirectly affected following completion of the residential development. At least seven PPC fall within the 0.25-mile buffer around the project site. These PPC will undoubtedly be impacted by this project, as open areas surrounding this high-density development will be used by residents for a variety of recreational pursuits (e.g., walking and creating trails, bike riding, and walking pets), which can degrade PPC habitat. New residential developments often introduce non-native plants into an area, creating more opportunity for degradation of the remaining natural habitat. These indirect effects will contribute to the overall deterioration of the remaining PPC in this area.

The applicant proposes to offset the effects to PPC by purchasing 62 acre-credits within a Service-approved PPC conservation bank. This equals 32.8 percent of the total 189 acres of PPC habitat that will be lost by construction of this project. The 53 PPC currently on the property will be transplanted on-site to appropriate habitat that will be preserved, but no mention is made

of where this site is or how it will be preserved. There is no indication if these plants will be monitored to measure the success of the transplantation. These proposed conservation measures contribute to the recovery of PPC and its habitat because they provide for off-site protection of 62 acres of occupied PPC habitat, either within the conservation bank or other occupied PPC habitat, which will be protected and managed in perpetuity. However, they do not fully compensate for the remaining acres of suitable PPC habitat that will be lost as a result of this project.

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 by medium- to high-density residential housing along the northern and eastern boundaries, while the southern boundary is bordered by low-density housing. The western boundary is bordered by undeveloped State Trust Land. There are likely PPC within the action area that would be affected by development of State Trust lands. State Trust Lands are not protected and can be sold for development. They also provide for recreation and open space for the residents of developments in the area. The use of State Trust Lands for recreation, off-road vehicle use, and illegal dumping of trash can ultimately lead to habitat degradation and possible loss of PPC. If State Lands are developed, further fragmentation of the larger PPC population in the general area will result.

Development in this geographic region can be expected to increase. State and private lands not presently developed in the area are quickly becoming urbanized. Much of this development has no Federal nexus. Without any protection under the Act, the only protection available is through the Arizona Native Plant Law, which provides only for salvage for scientific and educational purposes. The habitat of PPC will continue to be lost, regardless of the success of transplanted salvaged cacti.

In summary, virtually the entire habitat and the individuals of the species in the action area are reasonably certain to be lost in the foreseeable future. There is little regulatory authority that would be expected to reduce those risks.

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 described in this BO, we make this determination because:

- The applicant proposes to purchase 62 acres of credits within a Service-approved PPC conservation bank, to compensate for the impacts of the proposed project. The PPC bank

and the management plan provide protection in perpetuity for the cactus and its habitat and contribute to the overall recovery and conservation of the species.

- The applicant will transplant 53 PPC on-site to appropriate habitat that will be preserved. This location has not been defined and the details of how it will be preserved have not been developed. Perhaps some of the transplanted PPC will survive in their new locations and contribute some seeds in the area; however, no firm evidence exists to support this possibility. The loss of these PPC, coupled with other losses of PPC in this area, contributes to the continued decline of PPC and habitat, but does not jeopardize its continued existence.

INCIDENTAL TAKE STATEMENT

Sections 7(b)(4) and 7(o)(2) of the Act do not apply to 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. Neither incidental take nor recovery permits are needed from us for implementation of the proposed action.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act 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.

- To insure that the PPC conservation bank credits are secured before construction begins, please send us a copy of the Notarized Credit Agreement upon completion of the bank transaction.

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

REINITIATION NOTICE

This concludes formal consultation on the 191-acre Diablo Village Estates 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 Marit Alanen (520) 670-6150 (x234) or Sherry Barrett (520) 670-6150 (x223) if you have further questions. Please refer to consultation number 22410-2006-F-0138 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)
Chief, Habitat Branch, Arizona Game and Fish Department, Phoenix, AZ

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LITERATURE CITED

- Benson, L. 1982. The Cacti of the United States and Canada. Page 820. Stanford University Press Stanford, California.
- Brown, D.E. 1982. Biotic communities of the American Southwest--United States and Mexico. *Desert Plants* 4:123, 181.
- Ecosphere Environmental Services Inc. 1992. Final Report: A survey for threatened and endangered plant species at three proposed reservoir sites and associated pipelines. Bureau of Reclamation contract 0-CS-32-1950. Farmington, New Mexico. 69 pp.
- Mills, G.S. 1991. Miscellaneous notes on (*Coryphantha scheeri* var. *robustispina*). Unpublished report. U.S. Fish and Wildlife Service, Arizona Ecological Services Office, Phoenix, Arizona.
- Phillips, A.M. III, B.G. Phillips, N. Brian. 1981. Status report for *Coryphantha scheeri* var. *robustispina*. U.S. Fish and Wildlife Service, Office of Endangered Species, Albuquerque, NM. Unpublished Report.
- Pima County Association Of Governments, 1996. Population handbook 1995.
- Roller, P.S. 1996. Distribution, growth and reproduction of PPC (*Coryphantha scheeri* Kuntz var. *robustispina* Schott). M. S. Thesis, University of Arizona.
- Roller, P.S. and W.L. Halvorson. 1997. Fire and PPC (*Coryphantha scheeri* var. *robustispina*) in southern Arizona in Proceedings of the Effects of Fire on Threatened and Endangered Species Symposium. Coeur d' Alene, Idaho. November 1995.
- SWCA, Inc. 2001. September 12, 2001 Technical Memorandum regarding the PPC mitigation program at Las Campanas.
- U.S. Fish and Wildlife Service, 1993. Determination of endangered status for the plant PPC (*Coryphantha scheeri* var. *robustispina*). Federal Register 58 (158): 49875-49880.
- WestLand Resources, Inc. 2005. Biological Assessment for the 138-acre Solar del Viejo Property.
- WestLand Resources, Inc., 2004. January 26, 2004, Technical Memorandum regarding the transplanted PPC at the Madera Highland Reserve.