

**United States Department of the Interior
U.S. Fish and Wildlife Service
2321 West Royal Palm Road, Suite 103
Phoenix, Arizona 85021
Telephone: (602) 242-0210 FAX: (602) 242-2513**

AESO/FA
22410-2006-FA-0004

December 13, 2005

Colonel Alex C. Dornstauder
District Engineer, Los Angeles District
U.S. Army Corps of Engineers
P.O. Box 532711
Los Angeles, California 90053-2325

Dear Colonel Dornstauder:

Thank you for providing us a copy of the Expanded Environmental Assessment, October 20005, (EA) and Habitat Mitigation Plan, December, 2001, (HMP) for the proposed 608-acre Lone Mountain/Section 16 development in Phoenix, Maricopa County, Arizona (Section 16, T5N, R4E). We received these documents on November 14, 2005. These comments are provided under authority of, and in accordance with, the Fish and Wildlife Coordination Act (48 Stat. 401, as amended U.S.C. 661 et. seq.) (FWCA), the National Environmental Policy Act (40 CFR Part 1503), and Section 404(m) of the Clean Water Act (CWA).

The EA is generally well written and coherent, though many sections are redundant. The EA could benefit greatly from the inclusion of an index. The HMP could be improved by using color photos instead of black and white copies. If printing costs are prohibitive, we suggest posting documents on your home internet webpage.

More importantly though, these documents still do not adequately address the issues we raised in our letters dated June 21 and September 27, 2001, regarding impact analysis and mitigation for this project. Therefore we continue to object to the issuance of this permit and recommend it continue to be held in abeyance until such time that these issues are appropriately addressed. Previously, we focused considerable attention on the Corps' policy to exclude project activities located above the ordinary high water mark from impact analysis and mitigation. We are now primarily concerned with the lack of a quantitative impact assessment, and the need for mitigation and monitoring that address the totality of project-related impacts.

Although the Corps has expanded the scope of analysis beyond jurisdictional waters, the EA does not adequately quantify impacts. We believe proper evaluation of effects to biological function and the development of appropriate mitigation will require a quantitative impact analysis that employs standardized empirical methodologies. The EA does provide some level of quantification in the form of landscape acres and vegetation density. However, these two

measures alone are not sufficient to evaluate the biological function of jurisdictional waters and the surrounding landscape, particularly when the mitigation plan focuses primarily on compensation. Urban development would undoubtedly result in a fundamental shift in wildlife community. Standard methods of conservation biology should be employed to capture and evaluate these changes. These may include vegetative and wildlife measures such as volume, canopy cover, biomass, density, abundance, diversity, richness, evenness, etc.

The HMP is particularly deficient because it has not been expanded to address the entire project. The HMP proposes to restore 14.72 acres of habitat on-site. We do not believe restoration of 14.72 acres will adequately protect the biological functions provided by 31 acres of jurisdictional waters and 577 acres of interrelated uplands. Regardless, it is difficult to draw definitive conclusions about the effectiveness of the HMP because the only empirical method used is vegetation density. Simply planting vegetation at similar densities on a small fraction of the landscape does not ensure that biological function will be protected or replaced. Other measures are needed to guide the development of the mitigation plan and to serve as a baseline for compliance monitoring. Monitoring provisions and criteria should be developed to ensure the success of mitigation for both wildlife and vegetation communities. The following are specific comments on the EA and HMP.

Purpose and Need, and Alternatives

We are concerned the project purpose and need is too narrowly defined, severely limiting the scope of alternatives considered. The EA states, page 3, that the “stated purpose is to construct a viable, master-planned, gate-guarded upscale residential community that is consistent with the City of Phoenix General Plan and located in the Carefree/north Scottsdale area, or areas within one mile of these particularly master-planned communities in the price range that Lone Mountain is targeting (approximately \$275,000-\$500,000+).” As a result of this narrowly defined purpose, the EA concludes on page 5 that “there are no practicable offsite alternatives.” We suggest the purpose of the proposed action is simply to provide housing and the need is to meet market demand.

Impact Analysis

We are pleased that the scope of the impact analysis has been expanded to include the entire footprint of the proposed development. We believe this is consistent with applicable regulation as discussed in our previous comments. As stated above, we continue to be concerned that the analysis does not evaluate the biological function of jurisdictional washes and the interconnected landscape in an empirical fashion.

The EA begins to discuss anticipated changes to the biological characteristics on page 10, where it states “it is the structure and functional value of these habitats that are important in the analysis of their overall value as wildlife habitat.” We agree with this statement and suggest the EA be amended to quantify structure and function.

In regard to anticipated changes to non-jurisdictional areas, the EA states on page 23 that “Effects on upland and xeroriparian vegetation, which are not directly linked to the jurisdictional waters but would be impacted from the development project, have been analyzed.” This

statement concerns us because it seems to dismiss the relationship between uplands and waters. In our previous comments we provided biological examples illustrating the intimate biological relationship that exists between uplands and jurisdictional waters. For instance, Gila woodpeckers use saguaros located in adjacent uplands for nesting while foraging extensively along washes (Szaro and Jakle 1985), desert mule deer use uplands and xeroriparian washes (Krausman *et al.* 1985), and herpetofaunal species are rapidly lost from riparian areas as these areas become isolated from uplands (Jones *et al.* 1985). Uplands and jurisdictional waters are biologically linked to each other, and uplands directly influence the biological integrity of desert washes. Impacts to uplands and jurisdictional washes should not be treated separately but assessed together through an ecosystem based approach.

The EA states, page 24, that “Approximately 326.8 acres or 68% of the uplands on the subject property would be impacted from the construction of house pads and infrastructure.” These numbers are the primary manner in which impacts have been quantified for Lone Mountain. As discussed in previous comments, we do not believe it is appropriate to use acreage as a surrogate for biological function and/or structure. An empirical assessment would be more meaningful and useful.

The EA states on page 25 “that the dense xeroriparian vegetation associated with the waters of the U.S. and other ephemeral washes on the subject property have a higher functional value than the surrounding upland areas.” It is often true that xeroriparian vegetation is more dense and structurally diverse than adjacent uplands. However, this shouldn’t detract from the importance of the contribution of uplands, as well as xeroriparian areas, to the biological function of waters and washes. As we have stated, an intimate biological relationship exists. Also, conclusions regarding the relative biological function of xeroriparian areas and uplands on the project site would be more meaningful if based on site-specific empirical data.

Regarding the loss of 326.8 acres of uplands that would be developed, the EA states on page 28 “While resident wildlife would be displaced from the subject property due to habitat loss, species tolerant of human disturbance would be expected to utilize the preserved upland and xeroriparian habitats that would remain on the site.” This is entirely consistent with our concerns regarding effects on biological function. As we have previously stated, the loss of upland vegetation communities could adversely affect wildlife community population dynamics through habitat loss or fragmentation. This type of disturbance can disrupt intra- and interspecific wildlife interactions, resulting in population and community shifts (Knight *et al.* 1995). For instance urbanized habitats typically support larger and richer avian communities that are less even in relative abundance because they are dominated by a few, abundant species (Marzluff 1997), and native bird densities, species richness, and overall diversity is strongly correlated with vegetation volume of native plants (Mills *et al.* 1989). However, to simply state in a qualitative fashion that wildlife would be affected is not enough to truly and accurately evaluate project impacts. Quantitative data is needed.

The EA states, page 28, that an “interconnected open space system would allow wildlife to disperse throughout the site.” This statement is not supported by any information contained in the EA. A quantitative analysis is needed regarding the minimal patch size or buffer width necessary to maintain the current wildlife community in terms of diversity, abundance, and other applicable biological measures.

In regard to cumulative effects, the EA discusses on page 36-38 the past 404-permitted activities in the sub-watershed in which the Lone Mountain/Section 16 project would be located. In regard to 51 permits issued in the sub-watershed under Nationwide Permit (NWP), the EA states on page 38 that “the Corps has determined that the NWP Program results in minimal impacts, both individually and cumulatively.” We believe this conclusion is invalid because the NWP program permits activities that have more than minimal individual and cumulative adverse effects on the environment. These concerns have been previously relayed to your agency in comments dated August 27, 1998, and May 11, 2000, in response to Public Notice 98-50449-BAH regarding replacement NWPs; comments dated May 24, 2000, to assist your agency in preparing a consultation initiation package for effects of the NWP program on the cactus ferruginous pygmy-owl; comments dated April 23, 2001, in response to your agency’s request for concurrence that establishment of regional conditions and assertion of discretionary authority for the NWP program would not likely adversely affect threatened and endangered species or their critical habitats; comments dated July 11, 2001, on Special Public Notice requesting comments on the supplemental environmental assessments prepared for 11 nationwide permits and three regional conditions; and comments dated September 20, 2001, regarding Special Public Notice for NWP re-issuance.

As discussed in those letters, we believe the NWP program does not ensure minimal adverse effects on the environment due to a scope of impact analysis narrowly and inappropriately confined to areas below the jurisdictional ordinary high water mark. This is primarily the same issue we raised in our previous comments on Lone Mountain. In regard to NWPs we have suggested an interagency effort to cooperatively craft regional conditions and standard local operating procedures that appropriately address the issues of scope of analysis and minimal effects. Such an effort has not yet been initiated.

The EA indicates on page 38 that Individual Permits within the sub-watershed authorized impacts to 21.9 acres of jurisdictional waters for development activities while requiring 29.12 acres of compensatory mitigation. The conclusion is that cumulative impacts in the sub-watershed are not significant. Again, we are concerned that the cumulative impacts of 404 permitted activities is based on project-level analyses that are limited in scope to areas below the jurisdictional ordinary high-water mark. The EA provides no information regarding upland impacts associated with those 404 permits issued in the sub-watershed. If upland impacts are included for the cumulative effect of all 404 permitted activities, the total loss of desertscrub biotic communities may run into the hundreds or thousands of acres. Impairment to biological function is likely significant.

The EA concludes on page 38 that “Cumulative effects to vegetation and wildlife from development of the entire project would be minimal.” The information contained in the EA does not appear to support this conclusion. Although 244 acres of natural undisturbed open space would remain on the project site, no data or references are provided to support the conclusion that a network of small habitat islands totaling 244 acres would preserve the biological function of jurisdictional washes and the surrounding landscape. On the contrary, current principles of landscape ecology support the idea that landscape islands less than 250 acres in size are not large enough to protect ecosystem integrity and function (Barnes and Adams 1999).

Mitigation

The EA states on page 24 that “No compensatory mitigation would be required for the Section 404 permit for the removal of upland vegetation during project development.” We believe this policy is inconsistent with the intent of the Clean Water Act to preserve the biological integrity of waters of the U.S. We suggest the scope of mitigation be the same as the scope of impact analysis.

The EA addresses mitigation on page 40 for impacts to 5.1 acres of jurisdictional waters. The mitigation plan proposes a 14.72-acre habitat restoration/enhancement project. However, the mitigation does not provide empirical data that suggests biological function of jurisdictional waters and the surrounding landscape would be preserved. We do not believe acreage can serve as a surrogate for functions, particularly when the mitigation plan only addresses 7.5 acres of a 608-acre project.

The EA states on page 40-41 that the mitigation plan “has been developed for mitigation of impacts associated with the permit action.” However, the HMP only addresses 7.5 acres. This is inconsistent with the policy set forth in the EA to address the totality of impacts associated with the entire Lone Mountain development.

The HMP proposes to provide 14.72 acres of habitat restoration within the Lone Mountain footprint. No information is provided to demonstrate how 14.72 acres of restoration coupled with the proposed open space amenities would protect the biological function of jurisdictional waters and interrelated landscape. Empirical standards that address both vegetative and wildlife parameters are needed to demonstrate the effectiveness of the HMP.

Endangered Species

The Lone Mountain contains, or formerly contained, habitat that is minimally suitable for use by the cactus ferruginous pygmy-owl (*Glaucidium brasilianum cactorum*). However, ongoing surveys across Maricopa County have thus far failed to detect pygmy-owls and the closest known occupied sites are in southern Pinal County. Additionally, project-specific surveys did not detect pygmy-owls. Given the current status and distribution of pygmy-owls in Maricopa County, there is a very low probability they occur on, or adjacent to, the project site. Given this, it is unlikely pygmy-owls would be directly affected by this project.

Issues Related to Water Supply

The EA states on page 14 that “the project would be provided water service by the City of Phoenix, which has been designated by [Arizona Department of Water Resources] as having an assured supply.” The City of Phoenix is in the contract area for the Central Arizona Project (CAP) and receives water under the discretion of the Bureau of Reclamation (BR). In our April 22, 2004, comments on the Draft Environmental Impact Statement on the Allocation of Water Supply and Long-Term Contract Execution, Central Arizona Project, Arizona, June, 2000, we stated our contention in accordance with the FWCA that the impact of CAP on the environmental landscape of Arizona should be thoroughly assessed and mitigated by BR. We believe this issue is closely tied to your agencies responsibility under Section 404 of the CWA

because a substantial amount of municipal and industrial development that your agency reviews and permits is made possible by the use of CAP water. You may consider contacting BR to discuss programmatic impact assessment and mitigation of municipal and industrial development in the CAP service area.

Evaluation of Comments Received

The EA states on page 52 that “We do not feel that is necessary to do a quantitative assessment of habitat and wildlife impacts for this project...the qualitative impacts to habitat and wildlife of developing Sonoran desert are fairly well known.” We disagree with this statement and urge the Corps to conduct empirical studies that will allow a quantitative demonstration of the preservation or compensation of biological function. The problem with qualitative assessments is they are based on subjective criteria and are prone to multiple interpretations. A quantitative assessment is in the Corps’ best interest because it would allow all stakeholders to discuss and evaluate impacts from a standardized and objective perspective. If sufficient empirical data were gathered, there would likely be more consensus between our agencies regarding environmental impacts.

The EA states on page 52 that “In regard to FWS’ request to review a draft of the EA so that it can evaluate the environmental impacts and complete its project review, this request is not appropriate to the FWS’ role in the permit process.” We believe this statement is inconsistent with the 404(q) Memorandum of Agreement Between the Department of the Interior and the Department of the Army which provides for cooperation in acquiring and conveying project information needed by either agency to fulfill its permit review responsibilities.

The EA discusses on page 53 that the type of wildlife community shifts that could result from the proposed development. The EA acknowledges that species intolerant of humans would be eliminated while those that are tolerant would remain. These are precisely the types of effects that we believe should be quantified so we may engage in a standardized cooperative effort to preserve the biological integrity of jurisdictional washes and surrounding landscape. Quantifying these changes is not an impossible task and such an effort would allow us to address and mitigate the effects of urban sprawl on wildlife communities.

The EA states on Page 53 that “The connectivity between wildlife habitat on this site and the adjacent upstream and downstream lands has already been weakened from past construction of roads and residential development.” The Corps uses this argument to conclude that project impacts would be insignificant. However, on page 28 the EA states “the proposed development configuration minimizes impacts to high value habitat and maintains an interconnected network of wildlife habitat across the property that includes both uplands and the xeroriparian washes.” The Corps use this argument to conclude that wildlife would disperse across the site. These two concepts, upon which decisions have been made, are seemingly at odds with each other. The Corps should revisit the impact analysis and mitigation plan from an empirical approach to remove as much subjectivity as possible.

The EA discusses on page 54 a comment letter from the Arizona Game and Fish Department (AGFD) that stated “Ordinarily one larger contiguous area of habitat is preferable to smaller disconnected pockets. However since this area is surrounded by development and not connected

in anyway to large open space areas, small habitat areas may actually be more beneficial to the area's wildlife." While small isolated habitats can serve some species, conservationists prefer large reserves to small reserves for two main reasons. First, large reserves will, on average, contain a wider range of environmental conditions, and thus more species than small preserves; and additionally, some species will be absent from small reserves because they require large home ranges or simply because they live at low densities and by chance alone are unlikely to be in a small reserve (Hunter 1996). Also, the EA does not address the comment letter from AGFD dated August 3, 2000, to Susan Kantro that states "We view that section 16 is suitable for preservation as open space due to the relatively good quality of wildlife habitat that occurs there."

The EA states on page 54 that "Lone Mountain's proposed mitigation should provide sufficient compensatory mitigation for lost vegetation, since revegetation of the habitat mitigation areas, if successful, would equal or exceed the existing vegetation levels in areas adjacent to washes that would be negatively affected by this project." We don't believe the existing information supports this conclusion. The HMP only addresses 7.5 acres of jurisdictional waters that are would be subject to a direct discharge of dredged and fill material, but does not address all waters on site nor the surrounding landscape.

In closing, we believe that adequate demonstration of the preservation of the biological integrity of jurisdictional waters and the surrounding landscape will require impact analysis and mitigation and monitoring based on standardized empirical methods. We are available to assist in the development and implementation of such an approach. If we can be of further assistance, please contact Mike Martinez (x224). Most correspondence cited in this letter is available on our webpage <http://www.fws.gov/arizonaes/>.

Sincerely,

/s/ Thomas A. Gatz
Deputy Field Supervisor

cc: Chief, Regulatory Branch, U.S. Army Corps of Engineers, Phoenix, AZ
Regional Administrator, Environmental Protection Agency, San Francisco, CA
Supervisor, Project Evaluation, Arizona Game and Fish Department, Phoenix, AZ

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