



# United States Department of the Interior

## Fish and Wildlife Service

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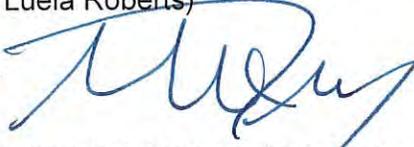
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TE-84356A

January 15, 2016

#### Memorandum

To: Regional Director, Fish and Wildlife Service, Albuquerque, New Mexico  
(ARD-ES) (Attn: Luella Roberts)

From: Field Supervisor 

Subject: Findings and Recommendations on the Issuance of an Incidental Take Permit for  
the Pima County Multi-Species Conservation Plan, Pima County, Arizona  
(TE-84356A)

#### I. DESCRIPTION OF THE PROPOSAL

The U.S. Fish and Wildlife Service (Service) proposes to issue an Incidental Take Permit (ITP) to Pima County and the Pima County Regional Flood Control District (RFCD; these co-permittees will herein be collectively referred to as Pima County or Permittees unless otherwise noted) under the authority of Section 10(a)(1)(B) and Section 10(a)(2) of the Endangered Species Act (ESA) of 1973, as amended, for a period of 30 years. Documents used in the preparation of this Statement of Findings and Recommendations include the Final Pima County Multi-species Conservation Plan and associated appendices (MSCP; Pima County 2015), the Final Environmental Impact Statement (Service 2015a), the Implementing Agreement (Appendix D of the MSCP), and our Biological and Conference Opinion on the issuance of Permit TE-84356A (Service 2015b). All of these documents are incorporated herein by reference.

#### Background

For the past several years, Pima County has undertaken a county-wide planning process, known as the Sonoran Desert Conservation Plan (SDCP), with the intent of conserving and enhancing natural and cultural resources for future generations. The planning process for the SDCP began after many years of contentious land-use decisions and concerns about the destruction of natural and cultural resources to make way for expansion of urban development and infrastructure. The SDCP established the framework and direction for preparing the Pima

County MSCP. The Pima County MSCP was prepared in cooperation with the Service in accordance with the provisions of Section 10(a)(1)(B) of the ESA.

Within Pima County, urban growth has converted significant land areas in the past and is expected to continue into the foreseeable future. A significant proportion of the predicted future population increase is anticipated to occur in the undeveloped or underdeveloped areas of unincorporated Pima County, particularly in the eastern portion of the county. The presence of endangered species in the areas of land development creates planning concerns for Pima County. Interest in land conservation and in the related potential costs extends across the community from environmental advocates promoting strengthened protections to members of the business community, development industry, and real estate profession concerned about potential economic impacts. Landowners and private property interests are concerned how their land use decisions can potentially be affected by the presence of federally listed threatened and endangered species. The Section 10(a)(1)(B) process, including the MSCP, provides a means for balancing these interests and achieving regulatory compliance under the ESA.

Stated purposes of the MSCP are to:

- permit non-Federal projects for the incidental take of federally listed species while not jeopardizing their long-term survival in the wild;
- promote the long-term conservation of Covered Species (see next section) and their habitats;
- reduce conflicts between Covered Species and economic activities;
- develop partnerships both within the public sector and between the public and private sectors. Examples of partnerships include monitoring and property management;
- provide regulatory streamlining for Pima County operations and the private sector; and
- provide opportunities for the conservation of State Trust lands.

### **Covered Species**

The Pima County MSCP proposes 44 species (Covered Species) for coverage under the permit application, including federally listed species, as well as species not currently listed under the ESA (Table 1). Earlier alternatives considered a broader array of species. The array of species considered for coverage under the permit was reviewed by outside scientists and then reduced to this final list based on consideration of updated information about the distribution of species and the potential for take by Covered Activities included in the MSCP.

**Table 1. MSCP Covered Species for Pima County's Section 10(a)(1)(B) Permit**

	Scientific Name	Federal Listing
<b>Plants (4 species)</b>		
Pima pineapple cactus	<i>Coryphantha scheeri</i> var. <i>robustispina</i>	Endangered
Needle-spined pineapple cactus	<i>Echinomastus erectocentrus</i> var. <i>erectocentrus</i>	
Huachuca water umbel	<i>Lilaeopsis schaffneriana</i> ssp. <i>recurva</i>	Endangered
Tumamoc globeberry	<i>Tumamoca macdougallii</i>	
<b>Mammals (7 species)</b>		
Mexican long-tongued bat	<i>Choeronycteris mexicana</i>	
Western red bat	<i>Lasiurus blossevillii</i>	
Western yellow bat	<i>Lasiurus xanthinus</i>	
Lesser long-nosed bat	<i>Leptonycteris curasoae</i> <i>yerbabuena</i>	Endangered
California leaf-nosed bat	<i>Macrotus californicus</i>	
Pale Townsend's big-eared bat	<i>Corynorhinus townsendii</i> <i>pallescens</i>	
Merriam's mouse	<i>Peromyscus merriami</i>	
<b>Birds (8 species)</b>		
Western Burrowing owl	<i>Athene cunicularia hypugaea</i>	
Cactus ferruginous pygmy-owl	<i>Glaucidium brasilianum cactorum</i>	
Rufous-winged sparrow	<i>Aimophila carpalis</i>	
Swainson's hawk	<i>Buteo swainsoni</i>	
Yellow-billed cuckoo (western distinct population segment)	<i>Coccyzus americanus</i>	Threatened
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	Endangered
Abert's towhee	<i>Melospiza aberti</i>	
Arizona Bell's vireo	<i>Vireo bellii arizonae</i>	
<b>Reptiles (6 species)</b>		
Desert box turtle	<i>Terrapene ornata luteola</i>	
Tucson shovel-nosed snake	<i>Chionactis occipitalis klauberi</i>	
Sonoran desert tortoise	<i>Gopherus morafkai</i>	
Groundsnake (valley form)	<i>Sonora semiannulata</i>	
Northern Mexican gartersnake	<i>Thamnophis eques megalops</i>	Threatened
Giant spotted whiptail	<i>Aspidoscelis stictogramma</i>	
<b>Amphibians (2 species)</b>		
Chiricahua leopard frog	<i>Lithobates chiricahuensis</i>	Threatened
Lowland leopard frog	<i>Lithobates yavapaiensis</i>	

**Table 1. MSCP Covered Species for Pima County's Section 10(a)(1)(B) Permit**

	Scientific Name	Federal Listing
Fish (5 species)		
Longfin dace	<i>Agosia chrysogaster</i>	
Desert sucker	<i>Catostomus clarki</i>	
Sonora sucker	<i>Catostomus insignis</i>	
Gila chub	<i>Gila intermedia</i>	Endangered
Gila topminnow	<i>Poeciliopsis occidentalis occidentalis</i>	Endangered
Invertebrates (12 species)		
Black Mountain/Papago talussnail	<i>Sonorella ambigua</i>	
San Xavier talussnail	<i>Sonorella eremita</i>	Conservation Agreement
Total Wreck talussnail	<i>Sonorella imperatrix</i>	
Empire Mountain talussnail	<i>Sonorella imperialis</i>	
Sonoran talussnail	<i>Sonorella magdalenensis</i> syn. <i>tumamocensis</i>	
Pungent talussnail	<i>Sonorella odorata</i>	
Santa Rita talussnail	<i>Sonorella walkeri</i>	
Posta Quemada talussnail	<i>Sonorella rinconensis</i>	
Santa Catalina talussnail subspecies	<i>Sonorella sabinoensis buehmanensis</i>	
Santa Catalina talussnail subspecies	<i>Sonorella sabinoensis tucsonica</i>	
Las Guijas talussnail	<i>Sonorella sitiens</i>	
Tortolita talussnail	<i>Sonorella tortillita</i>	

Unlisted Species

Assurances will be given for those species that are adequately covered by the MSCP, pursuant to the final No Surprises Rule (63 FR 8859, February 23, 1998; 50 CFR 17(b)(5)) provided the MSCP is being properly implemented. Implicit in this is that 1) the MSCP must address conservation of the species and their habitat, and 2) all Section 10 issuance criteria specified in the ESA and its implementation regulations must be met. If a species is added to the list of endangered species and that species is not covered under the Section 10 permit, Pima County will work with the Service to determine if inclusion in the permit is warranted (see MSCP Chapter 7 for more information). Such an inclusion would require a permit amendment.

### Plants in the MSCP and Permit

The Federal take prohibitions under the ESA for listed plants on non-Federal lands are limited, unless taking of those plants is in violation of State law or regulations or in the course of any violation of a State criminal trespass law. However, before the Service issues a Section 10 permit, the effects of the permit on listed plants must be analyzed. This is because Section 7 of the ESA requires that any Federal action—in this case issuance of a Section 10 permit and the programmatic coverage of the U.S. Army Corps of Engineers' (Corps') permits—must not jeopardize any listed species, including plants.

Listed plants have been addressed in the County's MSCP as part of the overall ecosystem approach adopted by Pima County and recommended by the Science Technical Advisory Team (STAT); four species of plants are proposed for coverage under the Section 10 permit (see MSCP Table 3.1). Two of these species are listed as endangered under the ESA. All Covered Plant Species are protected under the Arizona Native Plant Law as "highly safeguarded" (i.e., no collection is allowed) or "salvage restricted" (i.e., collection is allowed only with permit).

### **Covered Activities**

Pima County and the Service explored a wide variety of potential Covered Activities during the development of the application and MSCP. Over time, Pima County provided additional detail on the location and nature of specific activities in order to facilitate evaluation of impacts, both for the intra-Service consultation and for the Corps' programmatic consultation.

Pima County is seeking incidental take resulting from Covered Activities they undertake, such as:

- activities of Pima County and RFCD including construction, repair, and maintenance and operation of County facilities and infrastructure;
- construction, operation, and maintenance of renewable energy generation projects located on lands Pima County leases to others specifically for that purpose;
- relocation of utilities within Pima County rights-of-way if required by Pima County;
- recreation authorized by Pima County and recreational facilities operated by Pima County;
- mosquito control for public health;
- monitoring and land management activities including surveys, scientific studies, and other such activities carried out by Pima County and its cooperators;
- restoration activities such as vegetation treatments (including fire management activities) that are intended to improve the biological and ecological values of Pima County-owned and/or managed lands; and
- ranch-management activities—exclusive of livestock herbivory and trampling—on land owned and/or managed by Pima County through state grazing leases (see MSCP Section 3.4.1.2). Some of these activities may occur outside Pima County on ranch lands owned and/or managed by Pima County and classified as mitigation lands.

Pima County will provide ITP coverage to private development-related disturbances within the Permit Area. Permit coverage for private development will be available through the methods described in more detail within the MSCP (Section 3.4.1.1) and summarized below:

- ground disturbances on individual single-dwelling lots that occur subsequent to the County's issuance of a building permit that authorizes grading of 14,000 square feet or more provided that the property owner elects to participate in the County's Section 10 permit;
- ground disturbances that occur as part of—and subsequent to—the development of a residential subdivision where such actions are subject to the County's issuance of a site construction permit provided the property owner elects to participate in the County's Section 10 permit after the submittal of the site construction permit application but prior to the County's issuance of the site construction permit; and
- ground disturbances that occur as part of and subsequent to the development of a non-residential facility where such actions are subject to the County's issuance of a site construction permit, provided the property owner elects to participate in the County's ITP after submittal of the site construction permit application but prior to the County's issuance of the site construction permit.

Section 3.4 of the MSCP describes the Covered Activities in detail. The total number of acres of impacts resulting from the Covered Activities is capped at 36,000 acres. This is lower than some other alternatives previously evaluated. Of the 36,000 acres of impacts, Pima County will reserve approximately 5,000 acres to cover Pima County activities (as described above) with the remaining 31,000 acres allocated on a first-come-first-served basis for ground disturbance caused by Covered Activities of the private sector. Avoidance, minimization, and mitigation measures will also be included as part of the ITP, commensurate with the level of impacts. These measures are described in detail in Chapter 4 of the MSCP.

### **Permit Area**

Pima County and the Service considered a broad array of permit areas during the development of the MSCP. The Permit Area would be as follows: (1) private lands in unincorporated Pima County; (2) lands where construction and maintenance of Pima County infrastructure occur, including lands within the cities and towns of Tucson, Marana, Oro Valley, and Sahuarita and adjacent counties; (3) lands Pima County owns in fee simple and lands on which the County possesses a property right, including those located in other jurisdictions; (4) State Trust lands that are or would be leased by Pima County or used as road easements; (5) State Trust and U.S. Bureau of Land Management (BLM) lands that could be released to the private sector and thus become subject to regulatory control of Pima County, excepting those within Federal reserves; (6) State Trust lands where Pima County holds a lease or acquires the land in fee; and (7) BLM lands which Pima County might patent for open-space purposes either through the Recreation and Public Purposes Act (RPPA) or through land exchanges (see Figure 3.1 of the MSCP for a map of the Permit Area). If needed, Pima County can request authorization for additional acreage to be included in the Permit Area by way of a permit amendment.

### **Term of Permit**

Pima County's ITP would be for 30 years, a period of time that is adequate for the County's and the development community's activities to occur and for implementation of the County's mitigation strategy. Pima County could extend the term of the permit—if they apply for a renewal at least 30 days before the 30-year term is over—by way of a permit renewal. Issues related to permit modification, early termination, and other issues related to permit administration are covered in the permit terms and conditions, the MSCP, and the Implementing Agreement.

### **Relationship of MSCP to Section 7 Consultations**

Covered Activities include the discharge of dredged and/or fill material into potential jurisdictional Waters of the United States that are regulated by the Corps. The Corps requested programmatic Section 7 consultation for their issuance of permits under the Clean Water Act within the Permit Area and as described in the Covered Activities (see Section 3.5.1 of the MSCP). We have included their proposed action in our Section 7 consultation on our issuance of a Section 10(a)(1)(B) permit, and thus provided them with an incidental take statement that is consistent with the terms of the permit for Pima County. The Corps will ensure implementation of all minimization measures that are associated with the Covered Activities of the MSCP that are under their jurisdiction and authority. Pima County will implement all mitigation measures related to the Corps' actions in the Permit Area in compliance with the MSCP. The Biological and Conference Opinion (BCO) we issued will replace the project-by-project species consultation process that the Corps would use for "may affect" activities that are located within the Permit Area for the Clean Water Act Section 404 permits listed in the BCO. Together, the Corps and Pima County will implement all measures described in the BCO to minimize incidental take of listed and Covered Species, as applicable.

### **Conservation Strategy**

Pima County's conservation strategy operates at spatial scales ranging from the regional landscape scale to the site-specific project scale and incorporates avoidance and minimization as a foundation. At the landscape scale, the Conservation Lands System (CLS) map is the County's most definitive tool and is used to direct development-related impacts away from sensitive natural resources (see Figure 2.2 of the MSCP). At the site-specific project scale, most projects (regardless of whether they are in or out of the CLS) are subject to protocols or regulations that seek to avoid, minimize, or mitigate impacts to on-site sensitive resources (e.g., floodplains, riparian areas, native vegetation) as well as promote a project design that avoids and/or minimizes impacts to off-site resources (e.g., surface and groundwater).

#### **1) Avoidance and Minimization Measures**

Prior to submitting their ITP application and MSCP, Pima County modified a number of existing regulations or standards to improve protections for Covered Species and their habitats. Even before the SDCP, Pima County had a host of ordinances and other administrative tools to protect scenic beauty, cultural resources, and wildlife habitat. Continued implementation of certain aspects of these commitments will specifically benefit Covered Species and their habitats, and Pima County will rely on these commitments to avoid and minimize future impacts

to Covered Species. These specific, permit-related avoidance and minimization measures are described in Table 4.1 of the MSCP, and include:

- Pima County Code Chapter 7.33 – Removal of Rubbish, Trash, Weeds, Filth, and Debris, which supports control and eradication of exotic, invasive plant species;
- Pima County Code Chapter 16.30 – Watercourse & Riparian Habitat Protection & Mitigation Requirements, which conserves riparian resources and requires mitigation for unavoidable impacts;
- Pima County Code 16.28 – Erosion Hazard Areas and Building Setbacks, which minimizes alteration of areas adjacent to channel banks and encourages leaving banks natural, which reduce impacts to habitat for a variety of Covered Species, including the desert tortoise;
- Pima County Code 18.61 – Hillside Development Overlay Zone, which minimizes development on slopes that provide habitat for tortoise, talussnails, and other Covered Species;
- Pima County Code 18.72 – Native Plant Preservation Ordinance, which encourages in-place preservation and requires mitigation for unavoidable impacts. This measure directly contributes to the conservation of Covered Plant Species (Pima pineapple cactus, needle-spined pineapple cactus, and Huachuca water umbel) and conserves saguaro and ironwood that are habitat components for other Covered Species including cactus ferruginous pygmy-owl, Mexican long-tongued bat, lesser long-nosed bat, and rufous-winged sparrow; and
- Pima County Rezoning Application and Site Analysis Requirements, which provides on-site information for biological resources that informs configuration of high-value natural open space set-asides that may be used as mitigation lands. Natural open space that conserves on-site biological resources benefits Covered Species including cactus ferruginous pygmy-owl, Mexican long-tongued bat, lesser long-nosed bat, and rufous-winged sparrow.

In addition, Pima County is committing to the species-specific conservation measures, which are found in Appendix A of the MSCP.

## **2) Mitigation: Land Acquisition, Water Rights, and Species Enhancements**

Pima County will acquire, protect, manage, and monitor approximately 116,000 acres as mitigation to offset impacts from Covered Activities that occur over the life of the permit (see MSCP Table 4.2). Applying the landscape-level mitigation tool, mitigation for Covered Activities will be calculated based on the projected acres of impact and its location relative to the CLS. Below are the mitigation ratios that will be used to determine the amount of mitigation acreage required to satisfy the ITP (acres conserved:acres impacted; see additional details in Appendix B of the MSCP).

- Biological Core Management Area = 5:1
- Important Riparian Area = 5:1
- Special Species Management Area = 5:1

- Multiple Use Management Area = 3:1
- Agricultural In-holding = 2:1
- Outside the CLS = 2:1

Based on previous affirmation from the Service, Pima County has, over the last decade or so, been actively acquiring a land portfolio to rely upon as mitigation for impacts resulting from Covered Activities (see MSCP Table 4.3 and Figure 4.1). In this fashion, the County has secured mitigation lands prior to impacts and permit issuance. Taking into account the 25% mitigation credit for State Trust land agreed to by the Service (see MSCP Section 4.4), Pima County has already acquired over 110,000 acres with which to mitigate future impacts (see MSCP Figure 4.1, Table 4.3, and Appendix H). This represents 95% of the mitigation projected to be needed over the 30-year permit (see MSCP Table 4.2).

Mitigation using the CLS represents a “course filter” conservation approach, but it is also important to ensure that Covered Species are adequately covered in the County’s mitigation plan. Towards this end, Pima County, its STAT, and species experts developed species-specific maps of areas of Pima County that are important to Covered Species. The resulting maps, known as Priority Conservation Areas (PCAs), and modeled habitat for each Covered Species provide a foundation upon which mitigation can be assessed. Specifically, Pima County will commit to a minimum equivalency conservation ratio of 1:1 (acres of habitat loss:acres of mitigation). Based on the current suite of proposed mitigation lands, Pima County has achieved this ratio for all of the Covered Species (see MSCP Table 4.4). The equivalency analysis demonstrates Pima County’s CLS approach can offset acres impacted by Covered Activities with similar numbers of acres within respective PCAs or modeled habitat. To ensure that CLS mitigation stays ahead of impacts for all Covered Species, Pima County will undertake a species-by-species analysis of impacts as part of each 10-year program review. The objective is to maintain a minimum of 1:1 mitigation for each Covered Species. The MSCP also provides an opportunity for adjusting the PCAs or modeled habitat over time (MSCP Appendix R).

Acquisition of groundwater and surface-water rights is another key mitigation measure. Pima County has and will continue to acquire, manage, monitor, and protect water rights and water resources in advance of the need to mitigate for the impact of Covered Activities. Specific commitments of water or water rights as mitigation under the Section 10 permit will be made in restrictive covenants for County-controlled mitigation lands (see MSCP Appendix J). The covenant will limit the County’s future uses of surface water, groundwater, and water rights associated with mitigation lands. The conservation easement template for private ranch lands (see MSCP Appendix K) contains similar limitations, which would apply and do apply for those voluntarily granted conservation easements located on private ranch lands.

Species enhancements are another way for Pima County to gain mitigation credit. Enhancements will include actions such as construction of wildlife crossing structures to improve connectivity among populations; establishment of additional populations or occupied locations of Covered Species; and non-native species removal and control efforts. Such actions will have benefits that are greater or different than their spatial footprint and are typically more

expensive to implement. Pima County will work with the Service and resource experts to determine, on a case-by-case basis, appropriate mitigation credit for these projects.

### 3) Land and Resource Management

Pima County has committed to providing, as mitigation, a significant land portfolio. The MSCP provides details on current and future land management actions that contribute to fulfillment of MSCP goals and objectives. Over time, many of the management activities will be informed by the monitoring and adaptive management program (see MSCP Chapter 6). Management actions highlighted include the set of activities that are currently committed or are anticipated to be used on County-controlled mitigation lands, as well as those that prohibit certain uses on those lands (see MSCP Appendix N). In this way, management refers to those activities that take place after the acquisition or lease of specific properties to ensure that the biological values for which they were acquired are being maintained and/or enhanced over time, improve the avoidance and minimization of impacts to Covered Species that may occupy the landscape, and may be used to address changed circumstances.

In order to assure that the goals of the Pima County MSCP are realized, land and resource management will:

- work toward long-term viability and sustainability of native ecosystem structure and function and natural processes in the County-controlled mitigation lands;
- protect biological resources within County-controlled mitigation lands from threats and other disturbance activities while also accommodating compatible public uses;
- enhance and restore conservation targets in appropriate locations to improve habitat for Covered Species and other species of interest; and
- respond to monitoring information in a timely manner and use adaptive management, where and when such an approach is warranted.

To achieve these objectives, Pima County will implement the following management approaches, which directly address those significant threats which Pima County has some ability to control. Approaches will be implemented by the appropriate Pima County department. Land management activities will include:

- Invasive species control and/or eradication. Invasive species represent an important challenge affecting many Covered Species and their habitats, and therefore the control and/or removal of select invasive species is a priority activity for ensuring the success of the MSCP. County staff is currently participating in multi-jurisdictional invasive species groups, providing public outreach on invasive species, and implementing targeted control and eradication of invasive species on County-owned lands. This program will continue to evolve through collaboration with other on-going regional multi-agency efforts. Elements of the program will be incorporated into all management plans developed by Pima County. Property-specific conservation easements or restrictive covenants will only allow the introduction of invasive or non-native species in areas

identified therein that have been historically devoted to the growing of such species (see MSCP Appendices J, K).

- Protecting riparian and aquatic ecosystems and associated Covered Species. Riparian and aquatic systems are rare and extremely valuable for many Covered Species. Management actions will be guided by a set of principles, which include: protecting systems that are self-sustaining over those that need continual inputs; restoring or enhancing native riparian and aquatic ecosystems by releasing water to restore local aquifer conditions; and enhancing the ability of secondary effluent or reclaimed water to support aquatic life. Key features of Pima County's aquatic and riparian management actions include:
  - *Riparian and Aquatic Species Management Plan.* An important tool to guide management of aquatic and riparian systems will be the adoption of a Riparian and Aquatic Species Management Plan within three years of permit issuance. The intent of the plan will be to contribute to full occupancy of available appropriate habitat within the County's preserve system and other applicable areas by covered fishes, leopard frogs, Huachuca water umbel, and the Northern Mexican gartersnake. The implementation of this plan will focus on developing, modifying, or affirming appropriate site-specific goals and objectives based on the appropriateness of a site to host specific Covered Species and often to the benefit of other species as well. Pima County will ensure that employees and/or other scientists involved in species re-establishment efforts have the requisite Section 10(a)(1)(A) recovery permits, appropriate State permits, and that activities be coordinated with the Arizona Game and Fish Department (AGFD) and Service.
  - *Riparian and aquatic restoration.* Riparian and aquatic restoration will focus on repairing degraded riparian areas and aquatic features, both in and out of major drainage systems and by enhancing protection and connectivity of the remaining riparian and aquatic fragments along their tributaries. Towards this end, Pima County has completed a number of riparian restoration projects such as the relocation and removal of houses and other residential uses along upper Canada del Oro Wash, restoration at Bingham Cienega, and the Cortaro Mesquite Bosque project. Some riparian restoration projects require a supplemental water source (e.g., effluent and reclaimed water) to re-establish the types of facultative or obligate riparian vegetation plant communities that once occurred on the site. Pima County currently allocates a portion of County-owned effluent to riparian restoration projects. Additional effluent is allocated through the Conservation Effluent Pool, whereby up to 10,000 acre-feet of treated effluent water per year are made available for riparian projects from metropolitan area wastewater treatment facilities. Projects included in an active Habitat Conservation Plan, such as the MSCP, will gain preferential access to the Conservation Effluent Pool.
- Upland restoration. Some upland areas on potential mitigation lands are in poor ecological condition as a result of past land-use actions such as improper road construction, overgrazing, fire suppression (in areas of historical fire presence), etc. Upland restoration efforts will focus on halting or reversing the degradation to natural

resources, and projects will include road restoration and closures, and preventing soil loss through use of appropriate materials and design, and maintenance methods. Although Pima County cannot commit to a comprehensive upland restoration program, site-specific projects have already begun on many areas within potential mitigation lands; Pima County anticipates that these projects will continue during the implementation of the MSCP. Additional mitigation credits may be sought for upland restoration efforts.

- Public access, trails, and recreation. For County-owned mitigation lands, Pima County will seek to minimize impacts from County recreation projects by considering measures such as conducting biological assessments for all land disturbance projects; locating trails and other infrastructure (overlooks, parking areas, picnic areas) in areas that will cause the least impact; and providing sufficient signage to clearly identify public access points and appropriate types of allowable activities. Other measures are identified in the MSCP. In general, Pima County will avoid actions that limit access to County-controlled mitigation lands for the recreational purposes of sportsmen lawfully engaged in activities related to the legal taking of fish and game, as authorized by the Arizona Game and Fish Commission. In some circumstances, Pima County may work with AGFD to limit the discharge of firearms and archery equipment, which can effectively preclude hunting of big and small game species. Trapping on County lands is prohibited by the State of Arizona (ARS §301[D]).
- Ranchland management. A critical element of the MSCP is the acquisition and lease of ranchland for mitigation. To date, Pima County has acquired a number of working cattle ranches (see MSCP Figure 5.1). Pima County intends to maintain livestock and associated grazing agreements from the Arizona State Land Department and the BLM on all or most of these ranches. Even though impacts related to grazing are not being proposed for coverage under the MSCP, Pima County is committing to monitor and manage ranch lands according to a strict set of standards and guidelines (see MSCP Appendix F). Ranches will also be subject to land management plans, as detailed below:
  - Development of ranchland management plans. Pima County will develop and maintain management plans for each of its ranch properties as time and resources permit, but a management plan will be in place by the time a property is submitted for mitigation credit under the MSCP. Management plans will include an assessment of rangeland resources (ecological sites, cultural features, etc.), current rangeland conditions, and management goals related to both ranch operations and wildlife. Managers will utilize range monitoring results and results from the Pima County Ecological Monitoring Program (PCEMP) to periodically update and revise management plans. Draft management plans will be available for public review and comment as a part of the planning process.
- Land protection and enforcement. On County mitigation lands (i.e., collectively, all those lands where Pima County possesses a property interest and that are used for permit mitigation), all environmental ordinances and property-specific rules and terms of legal agreements where applicable, will be enforced and monitored for compliance to ensure that the conservation value of these lands is not diminished. Illegal activities include but

are not limited to illegal off-road vehicle (ORV) use, illegal trash and toxic chemical dumping, human and livestock trespass, harmful law enforcement activities, and destruction of infrastructure important for wildlife and their habitat. The Pima County Sheriff's Department provides a special law enforcement unit assigned to police these areas.

- Maintenance of park rules. Pima County currently maintains a set of rules for its park system, which includes mitigation lands (Pima County Park Rule 4-040; MSCP Appendix O). Park rules are essential to the MSCP, because they provide enforceable rules for management of various public activities on mitigation lands. Park rules will be updated because of the increase in the extent of the County preserves, particularly since 2004. The new rules will focus on limiting or prohibiting activities that might compromise the basic ecological values of a set of mitigation properties whose primary purposes are to maintain unfragmented habitat for wildlife and as a working landscape. The rules will provide for a greater range in management flexibility from restricting public access to a property altogether to regulating recreational activities by the public. The new rules will be similar to those in place on most multiple-use public lands administered by entities such as the Service and U.S. Forest Service.
- Mitigation lands owned in fee by private property owners. Pima County will place restrictions on mitigation lands that are held in fee by private property owners. Pima County will monitor for compliance with legally established restrictions specified in ranch conservation easements (described in MSCP Appendix K) or legal instruments associated with the Opt-In Provision (see MSCP Section 3.4.1.1). Maintaining the integrity and configuration of these privately owned mitigation lands is fundamental to the MSCP. Monitoring for these Opt-in mitigation lands will employ remote sensing tools to detect encroachments and disturbances. The availability of imagery that can be used for this application varies, but is typically collected every three years. No on-the-ground monitoring will be carried out. If an encroachment or area of disturbance is found within all or a portion of a designated mitigation lands, follow-up actions will be taken to remedy the intrusion. Where remedy is not achievable, the compromised acreage will be substituted and replaced to maintain mitigation credit as described in MSCP Section 4.4.
- Land management plan development. Pima County and RFCD will develop site-specific management plans or update existing management plans (e.g., Cooperative Resource Management Plans) for most properties that are greater than or equal to 100 acres. Management plans will only be required for County-controlled mitigation lands or for those properties on which the County has conveyed a conservation easement to another party. Plans will be developed within two years of a property being designated for mitigation purposes. All management plans will directly address the management activities related to the maintenance of MSCP resources including—but not limited to—avoidance and minimization efforts to ensure protection, species and habitat needs, emerging threats, invasive species removal needs, ordinance enforcement activities, and anticipated future resource needs. If a property was acquired to provide habitat for a particular species or resource, management plans will directly address the specific management actions that will be undertaken to ensure the continued survival and may

assist recovery of the Covered Species or maintenance/improvement of the resource condition. Even if a parcel does not have an active management plan, park rules and prohibited and permitted activities will still apply.

### **Calculating Mitigation Credit and Implementation of the Mitigation Program**

Mitigation represents the most significant conservation element of the Pima County MSCP; it is intended to secure and maintain sufficient lands to offset impacts associated with Covered Activities in a manner that conforms to the Service's criteria. These criteria require that Pima County:

- possess an ownership or management interest in the mitigation property;
- exercise legal protection over the mitigation property;
- manage the mitigation property to retain the biological and species habitat values; and
- monitor the mitigation property to ensure that biological and species habitat values persist over time.

Mitigation lands will receive full or partial mitigation credit based on the degree to which the above criteria are met. The nature of Pima County's ownership on any given mitigation property pre-determines the tools Pima County will use to meet the remaining criteria. To that end, acquisition of fee-title lands (including appurtenant water rights, when possible) and acquisition of partial interests in real property such as leases and receipt of conservation easements are—and will continue to be—the primary conservation tools for assembling mitigation lands for the Section 10 permit.

Options for obtaining mitigation lands include the following, and are described in more detail in the MSCP Section 4.5.1:

- fee-simple acquisition;
- protection instruments for Pima County's fee-simple lands;
- partial interest, conservation easements on private ranch property;
- partial interest, State Trust grazing leases;
- life estates and other devices;
- donations of property interests; or
- open space set-asides established to achieve compliance with the CLS and Pima County Watercourse and Riparian Habitat Protection and Mitigation Requirements.

### **Species Recovery**

One of the issuance criteria for a Section 10 permit is that the authorized taking will not appreciably reduce the likelihood of survival and recovery of the Covered Species in the wild. The ESA does not explicitly require the Pima County MSCP to recover species or contribute to the objectives identified by adopted recovery plans, and the Service must not only consider the extent of impacts to Covered Species and their habitats but also the extent to which the Pima County MSCP is likely to enhance the habitat of the Covered Species or increase the long-term survivability of the species or their habitat. Mechanisms to address this issue have been built

into the MSCP planning process. Mitigation measures outlined in the MSCP will contribute to the conservation of listed species in the region. In particular, the mitigation credit structure provides incentives for measures that will contribute toward improvement of habitat conditions and potential for re-establishment of extirpated populations.

### **Monitoring and Adaptive Management**

A primary focus of the Pima County MSCP is on the acquisition of mitigation lands to create a County preserve system with long-term habitat protection and enhancements for Covered Species. Further, land management will provide Pima County with tools and resources aimed at assisting Covered Species and their habitats on County mitigation lands. Monitoring and adaptive management are also key to the success of the Pima County MSCP by providing information to help ensure that the values for which those lands were purchased are maintained over time and to assess progress towards determining if MSCP goals are being met.

#### Compliance Monitoring

Pima County will provide the Service with an annual compliance report (see MSCP Appendix P) that will contain sufficient information for the Service to determine whether the County is fulfilling the requirements of the Section 10 permit, as outlined in the Implementing Agreement (see MSCP Appendix D). Details of the annual compliance monitoring report can be found in the MSCP Section 9.1.

#### Effectiveness Monitoring

The majority of the County's MSCP monitoring effort will be focused on determining the effectiveness of the County's fee-title and leased-lands mitigation efforts at maintaining or improving habitat of Covered Species and their populations and detecting threats that can negatively impact these resources.

Pima County and its STAT considered and rejected a monitoring strategy that was limited to monitoring species populations. The County accepted the STAT's recommendation for a multi-level monitoring strategy and worked with the Service, biologists, and land managers to develop five programmatic elements for monitoring: species, habitat, landscape pattern, threats, and climate.

*Species-level monitoring* is a key element of the PCEMP and Pima County will commit to monitor population parameters for 15 species (as detailed in the MSCP, Section 6.2.1, Table 6.1, and Appendix Q), which were chosen to represent a mix of taxa, habitats, and degree of spatial distribution from species with very small distributions in Pima County to species with widespread distributions. The goal of species monitoring will be to detect biologically meaningful changes to these populations, particularly declining populations.

*Habitat monitoring* is a key component of the PCEMP and reflects the understanding that changes in key habitat features can parallel changes in species abundance and distribution. Determining what constitutes habitat and how to monitor it is summarized in Appendix Q of the

MSCP. Vegetation, surface water, caves, mines, and adits will be monitored on County-owned and -leased lands

*Landscape pattern monitoring* to support the MSCP will focus on detecting short-term change in land uses or land-use intensities, land ownership, preserve status, and the extent and configuration of County roads and sewers. At intervals determined by the availability of appropriate products (most notably the National Land Cover Dataset) Pima County will analyze changes in land cover across the entire County or portions of the County for which data is available. In addition to the National Land Cover Dataset, the County will use other remote sensing products, especially multi-spectral, high-resolution satellite imagery, as they are made available to enumerate finer-scale changes in land-cover types throughout the County.

*Threats monitoring* will focus on on-the-ground activities at County preserve lands including the extent and severity of: ORV use, invasive species, groundwater pumping, vandalism and littering, and toxic chemical spills.

*Climate monitoring* will seek to leverage data from a variety of sources (e.g., Arizona Meteorological Network, National Weather Service Cooperative Observer Program, and Remote Automated Weather Station Network) and supplement where needed with precipitation monitoring sites within the County preserve network.

#### Covered Species Information Database

Monitoring activities will form the foundation of the program and will be used to determine permit compliance and effectiveness. Yet the program will benefit from the fact that Tucson is a regional center for ecological research and monitoring activities, much of which could contribute to an understanding of the distribution and abundance of Covered Species. To provide an effective means of collecting and summarizing this information, Pima County will develop the Covered Species Information Database. Pima County will periodically query researchers, governmental entities, and non-governmental organizations regarding any data collected on Covered Species. If deemed appropriate and if acceptable to the entity contributing the data, information from these sources will be part of the annual report to the Service. Participating researchers and government and non-governmental entities would be encouraged to participate through public outreach activities, but the program would be on a voluntary basis.

#### **Adaptive Management**

Pima County will employ two types of adaptive management: (1) those decisions for which a single management action is needed (responsive management actions) and (2) decisions that require recurrent actions (recurrent decisions). Responsive management actions take place in situations where there is little or no uncertainty about the causes of observed resource change or where there is only a single management action to pursue, such as the purchase of additional lands or a specific treatment of non-native species. Recurrent management actions will be employed in those situations where monitoring data contribute to management actions that are repeated over time, including species reintroductions that take place in multiple iterations.

Pima County will implement the adaptive management provisions in Chapter 6 of the MSCP when changes in management practices are necessary to achieve the MSCP's biological objectives, or to respond to monitoring results or new scientific information. Pima County will make the changes without awaiting notice from the Service, and will report to the Service on any actions taken.

If the Service determines that one or more of the adaptive management provisions in the MSCP have been triggered and that the County has not changed its management practices in accordance with Chapter 6 of the MSCP, the Service will so notify the Parties and will direct the County to make the required changes. Within 30 days after receiving the notice, the responsible Party will make the required changes and report to the Service on its actions. The changes are provided for in the MSCP, and hence do not constitute unforeseen circumstances or require amendment of the permit or MSCP, except as provided in the MSCP.

Pima County will not implement adaptive management changes that may result in less mitigation than provided for Covered Species under the original terms of the MSCP, unless the Service first provides written approval. The County may propose adaptive management changes by notice to the Service, specifying the adaptive management modifications proposed; the basis for them, including supporting data; the anticipated effects on Covered Species; and other environmental impacts. Within 120 days of receiving the notice, the Service will approve the proposed adaptive management changes, approve them as modified by the Service, or notify the County that the proposed changes constitute the need for permit amendments that must be reviewed under Section 11.2 of the Implementing Agreement.

### **Analysis of Effects and Incidental Take**

Because of the scale of the MSCP, both geographically and for its number of Covered Activities and Covered Species, the analysis of effects of the Covered Activities on individuals or even populations of the Covered Species is complex and difficult. For these effects, including the incidental take of Covered Species for which Pima County is seeking coverage, quantification of take of individuals is difficult, if not impossible. This is due to a number of reasons, but includes factors like small body size; behavior (nocturnal, secretive, occupying remote areas of habitat, hibernation or estivation, etc.); cryptic coloration; the fact that losses may be masked by normal seasonal fluctuations in numbers and other causes (predation, migration, starvation, etc.); natural events (runoff, floods, scavenging, decomposition, etc.) may remove, bury, or destroy dead or injured individuals, making them difficult to detect; and the difficulty of finding rare species in a very large action area.

However, all species rely upon habitat (the place where species live and can include such characteristics as landform, elevation, soil, water, and vegetation). Each species has a unique template of what constitutes habitat for it, and therefore the presence, absence, and abundance of a species on the landscape is largely determined by that habitat template. If key elements of a species' habitat are missing in an area, it can result in the loss of that species even if other environmental components necessary for a species' survival (e.g., food) are present. Consequently, most conservation actions that seek to promote populations of a species focus

attention on maintaining or improving habitat. Conversely, effects to individuals or species are most often a result of the loss, reduction, or alteration of that species' habitat. Effects to habitat, therefore, often equate to effects to individuals or populations of a species. Because of the difficulty of detecting effects to individuals or populations as described above and because effects to habitat have a demonstrable tie to effects to species and populations, we used acres of habitat impacted by Covered Activities (see Table 3.3 in the MSCP) as a surrogate for effects (including incidental take) to the Covered Species.

Effects resulting from Covered Activities in the MSCP can generally be classified as those associated with urban growth and development. Habitats can be completely lost as they are replaced with urban developments. However, fragmentation of habitat also affects individuals and populations by reducing habitat to patches that are inadequate to meet the life history needs of the species, including the need to be able to make necessary movements within and among habitat patches, home ranges, and populations. Fragmentation can result in landscapes with many small habitat patches rather than a few large patches. Small habitat patches tend to have altered species composition, reduced community diversity, and smaller population sizes for individual species. Species with greater susceptibility to the effects of reduced habitat patch size are more likely to be extirpated from these small patches. Reduced community diversity and altered species composition can change natural ecological functions, which can result in unpredictable effects given the complexity of community dynamics. Smaller populations are more susceptible to extirpation due to random fluctuations in population dynamics or catastrophic events. Small habitat patches also have high perimeter-to-area ratios, which increases edge effects that can result in even smaller populations. If small populations are isolated from nearby populations, they will be susceptible to deleterious genetic effects of inbreeding depression, and extirpated populations may not be replaced by dispersing individuals from other populations.

The deleterious effects of conversion of natural habitats to other land uses often extend beyond project footprints resulting in "edge effects." The biological integrity of habitats adjoining development can be diminished by adverse effects of noise, lighting, exotic plant and animal invasion, predators, parasitism, disturbance from human activities, changes in fire regimes, and other factors. The severity of these effects depends on distance to land alteration boundaries, source of disturbance, and the affected species. Species that are particularly vulnerable to edge effects, known as interior species, require large patches of habitat that are relatively free from edge effects.

Urbanization may result in changes to local (and regional) hydrology, run-off, and sedimentation. Increased urban run-off into natural habitats and channelization for flood control could result in highly erosive rain flows and increased rates of scouring, which could result in downstream habitat loss. Urban runoff may also increase sediment loads that could result in downstream habitat degradation. Conversely, reduced flow caused by water diversion may reduce scouring events that maintain appropriate habitat for flood plain-dependent species.

Urban runoff may also contain contaminants that may impact downstream habitat and/or species.

Roads and associated infrastructure are one of the most common elements of urbanization. Placement of roadways within the natural landscape and maintenance of existing roadways can cause direct loss of habitat and individuals, alter quality of adjacent habitats, disrupt hydrologic regimes, cause roadkills, and fragment habitat. This in turn can result in the decline of certain species populations (particularly smaller populations that can be more susceptible to genetic isolation and local extinction), a loss in species diversity near roadways, and impede animal movements.

Hydrologic alteration is one of the largest causes of habitat degradation, fragmentation, and species imperilment in aquatic systems. The channelization of streams for irrigation, industrial use, recreation, power generation, and to maximize land development has increased with human population growth. Once developed, flood control channels often require maintenance of vegetation and sediment, which can compound the impacts of the initial construction by periodically (sometimes annually) removing riparian vegetation and sediment, thereby suppressing riparian habitat functions for many species, particularly those species that require vegetative structural diversity.

Recreational activities authorized by Pima County are Covered Activities. Developed recreation facilities, by design, focus use in specific areas. Therefore, areas in and adjacent to these sites generally exhibit signs of habitat degradation. Habitat degradation may include trampling of vegetation, direct removal of habitat during maintenance activities, invasion of nonnative species, habitat losses due to escaped campfires, development of exploratory trails fanning out from developed sites, human-induced alteration to hydrological patterns, and soil compaction. Direct impacts of trampling and habitat destruction can also occur from associated recreational activities such as cross-country motorized vehicle use and trash dumping by recreationists.

Recreational use can directly impact birds and other animals by bringing human activity into sensitive areas. Increased recreational access afforded by trails may cause native fauna to avoid potential foraging and breeding sites and alter patterns of parental care. Chronic disturbance during the breeding season may lead to higher predation and/or nest abandonment rates and thus reduced reproductive success. Some disturbance, injury, or loss of individuals could occur as a result of domestic pets that may accompany humans in recreational areas.

When located in occupied habitats, the maintenance of recreational and ranch facilities can also have adverse effects on species through the disturbance of vegetative cover and mineral soil, which may cause habitat loss or degradation. The maintenance activity may destroy burrow systems and other fossorial habitats along with surface cover used for hiding and protection from predators. Disturbance and possible displacement of individuals may occur due to lights and recurring noise from people and equipment. Maintenance of existing facilities and trails can also result in direct loss of individual plants or habitat due to removal of vegetative cover growing alongside the recreational facility site or trail, as well as within the trail itself. Indirect

effects from maintenance include the introduction of nonnative weeds into habitat from ground-disturbing activities. Compaction of soils, which may increase runoff and sedimentation in adjacent stream habitat, and pollution of water, due to runoff from paved surfaces of products such as gasoline, diesel, and oil, may also result in a loss of habitat and individuals.

Vegetation management activities on lands owned by Pima County can have both positive and negative effects on species, which may be temporary or permanent. “Let burn” policies can result in loss of vegetative cover and organic litter, while fire suppression may require soil disturbance to establish fire breaks during and after fires, which may fragment habitat for some species. Disturbance and possible displacement of individuals may occur due to prescribed and natural fires, along with changes in habitat quality that may last several, if not more, years. Invasive species management may inadvertently disturb individuals, and alter soil conditions at least temporarily.

It is appropriate to use acres of affected habitat as surrogate for effects to and incidental take of individuals because effects to habitat generally lead to effects to individuals and populations such as the following: abandonment of young due to noise, activity, light, etc.; injury or death of young if they are abandoned or forced to move; being forced into suboptimal habitat; increased predation; starvation and reduced reproductive output due to reduced habitat quality and increased competition; loss of crucial habitat elements (roosts, nests, burrows, perches, breeding sites, etc.); collisions with and crushing by vehicles and equipment; effects to drainage patterns causing mortality or loss of forage resources; increased occurrence of nonnative competitors and predators (e.g., bullfrogs and crayfish); increased erosion and sedimentation affecting life history requirements; or the loss of aquatic vegetation as breeding, feeding, and sheltering habitat. The identification of habitat within the action area for each of the Covered Species relies upon both habitat models developed by the STAT and the PCAs identified by species experts (see Section 3.7 of the MSCP for information on the development of use of these habitat elements).

To summarize, the general effects to Covered Species from the Covered Activities can be attributed to habitat loss, alteration, and fragmentation. Therefore, the approach being taken by Pima County to address these effects is the development of system of conservation lands that will include the range of habitats affected by the Covered Activities, as well as an appropriate ratio of protected habitats needed to meet the life history requirements of each of the Covered Species.

As detailed in Section 3.7 of the MSCP, Pima County estimated habitat loss for Covered Species relative to the impacts on the PCAs or modeled habitat (high and medium quality; MSCP Table 3.3). Take estimates also include loss of habitat that exists within the built environment. Occurrences of the talussnail species are too localized to model using geographic information system (GIS) (see MSCP Appendix A).

The habitat loss projected by MSCP ranged widely, depending on the species. For a few species (southwestern willow flycatcher, desert and Sonora suckers, and longfin dace), habitat

loss was quantified to be zero acres; while habitat loss for four species (Pima pineapple cactus, Tumamoc globeberry, lesser long-nosed bat, and rufous-winged sparrow) was quantified at over 15,000 acres for each species (see MSCP Table 3.3). Appendix A of the MSCP provides individual maps of projected habitat loss for each species and, where appropriate, explains why take is anticipated for those species where no habitat loss is projected. Using habitat loss as a surrogate for anticipated take of the Covered Species in the MSCP is appropriate due to the direct connection that habitat loss or fragmentation has to a species' ability to survive, reproduce, and move within the landscape to meet its life history requirements. See MSCP Appendix A for a discussion of how effects to habitat are related to the anticipated take of individual Covered Species.

A detailed analysis of the effects of issuance of the proposed ITP and approval and implementation of the MSCP is found in the Effects of the Action section of our BCO for the MSCP (AESO/SE 22410-2006-F-0459). Take statements are included in the BCO for all listed and Covered Species in the MSCP. We have determined that the effects likely to result to listed and unlisted Covered Species as a result of the issuance of the ITP and approval of the MSCP would not jeopardize or reduce the likelihood of recovery of the Covered Species nor adversely modify designated or proposed critical habitat for the Covered Species. It is anticipated that, through the implementation of the MSCP, levels of incidental take would be minimized and mitigated to the maximum extent practicable. Adverse effects are not expected to affect the Covered Species at a population level, although some individuals may be adversely affected or taken.

## II. PUBLIC COMMENT

A Notice of Availability and Notice of Public Meetings for the Draft MSCP and Environmental Impact Statement (EIS) were posted in the *Federal Register* on December 7, 2012 (77 FR 73045). The Service posted the *Federal Register* notice and announced the availability of the Draft MSCP/Draft EIS on the Arizona Ecological Services website (<http://www.fws.gov/southwest/es/arizona/HCPs.htm>). The formal comment period for the Pima County Draft MSCP/Draft EIS was from December 7, 2012 to March 15, 2013. Pima County hosted five public meetings for the Draft MSCP in January 2013. The Service held one public comment meeting for the EIS on February 21, 2013 (4:00 P.M. to 6:00 P.M.) in Tucson, Arizona.

During the public comment period, including the six public meetings as described above, 20 letters and written comments were received. Of the comments received during the Draft MSCP/Draft EIS public comment review period, the topics of primary concern were:

- planning and decision making process;
- natural resources management;
- social and economic concerns;
- cumulative effects; and
- MSCP specific issues

Detailed information concerning public involvement and a record of comments received during scoping and public comment periods, as well as our response to those comments, are provided in Chapter 6 of the Final EIS.

### **III. INCIDENTAL TAKE PERMIT CRITERIA – ANALYSIS AND FINDINGS**

#### **1. The taking will be incidental to otherwise lawful activities.**

We find that the taking of Covered Species under the MSCP will be incidental to otherwise lawful activities and not the purpose of such activities. Pima County is a legally recognized municipality with granted authority and jurisdiction to carry out the Covered Activities. The take of individuals of Covered Species will be primarily due to indirect impacts of habitat destruction and/or alteration resulting from the lawful Covered Activities under the legal authority and jurisdiction of Pima County and such taking will be incidental to, and the purpose of, these lawful activities.

#### **2. The Permittees will, to the maximum extent practicable, minimize and mitigate the impacts of such taking.**

The effects of the incidental take of each of the Covered Species anticipated under the MSCP is described under Section I, Analysis of Effects; in Chapter 4 of the Final EIS; and in our BCO. Measures to avoid, minimize, and mitigate for the anticipated effects are found in Chapter 4 and Appendix A of the MSCP and are summarized and analyzed in our BCO. We find that Pima County will minimize and mitigate the effects of incidental take of the Covered Species to the maximum extent practicable.

Pima County has developed the MSCP, pursuant to the ITP requirements codified at 50 CFR 17.22(b)(1) and 17.32(b)(1), which require measures to minimize and mitigate the effects of issuing the ITP. Under the provisions of the MSCP, the effects of take will be minimized, mitigated, and monitored to the maximum extent practicable in accordance with the permit requirements of Permit No. TE-84356A. To make a finding that the MSCP minimizes and mitigates the effects of the take to the maximum extent practicable, we must first find that the minimization and mitigation measures provided under the MSCP are rationally related to the level of incidental take anticipated under the MSCP. In effect, the minimization and mitigation measures need to address the biological needs of the Covered Species in a manner that is commensurate with the effects to the species allowed under the MSCP. The minimization measures proposed by Pima County were developed based on a comprehensive evaluation of effects to Covered Species that would result from Covered Activities that will occur in the Permit Area. From 1999 through its application in 2010, Pima County has tested and adopted various measures to avoid, minimize, and mitigate impacts of the effects of urban growth and development in Pima County. The process of incremental revision of policies and adoption of guidelines and revisions to ordinances have demonstrated what has been practicable at the level of land-use policy. The MSCP formalizes avoidance and minimization measures currently

being implemented (see Table 4.1 of the MSCP) and provides additional species conservation measures (MSCP Appendix A) that will avoid, minimize, and mitigate impacts associated with take of Covered Species and impacts to their habitats.

The mitigation for the MSCP is based on the commitment from Pima County to acquire, protect, manage, and monitor approximately 116,000 acres as mitigation to offset impacts from Covered Activities that occur over the life of the permit (see MSCP Table 4.2). Applying the landscape-level mitigation tool, mitigation for Covered Activities will be calculated based on the projected acres of impact and its location relative to the CLS. Therefore, the level of mitigation is commensurate with the level and location of impacts of the Covered Activities.

As previously described, Pima County will monitor the effectiveness of the MSCP and associated avoidance, minimization, and mitigation measures over the life of the ITP. We have determined that the effects of incidental take will be adequately monitored and reported and, through adaptive management, Pima County will implement the MSCP in such a way as to avoid, minimize, and mitigate to the maximum extent practicable for the effects, including incidental take, likely to occur to the Covered Species. While not required to contribute to the recovery of listed species, many of the measures to be implemented by Pima County are consistent with recovery actions in the existing recovery plans for the listed species and will, therefore, contribute to the conservation and maintenance of viable populations of these species in the Permit Area. Therefore, we find that the long-term benefits of the minimization and mitigation measures are rationally related to, and commensurate with, the levels of incidental take anticipated for the Covered Species.

In addition to evaluating the effectiveness of the minimization and mitigation provided under the MSCP, we must also evaluate whether these measures minimize and mitigate the effects of incidental take “to the maximum extent practicable.” The Service does not believe that feasibility or practicality can be divorced from considerations of proportionality; that is, the mitigation under the MSCP must be proportional to the effects of incidental take under the MSCP. Thus, when considering whether additional minimization and mitigation measures are feasible, the Service, first and foremost, must consider the adequacy of the mitigation provided to compensate for the effects of incidental take and determine that the mitigation is sufficient and fair. As discussed above, we find that incidental take of Covered Species will be avoided and minimized to some extent and, where take cannot be avoided, Pima County will mitigate the impacts of take to the maximum extent practicable. In the case of mitigation, Pima County will fully compensate for impacts associated with take. Conservation measures aimed at avoiding, minimizing, and mitigating take of listed species will also avoid and minimize impacts to various physical and biological resources detailed in the Affected Environment of the Final EIS (e.g., water quality, native wildlife, migratory birds) and, in some cases, may produce a net conservation benefit. The Final MSCP provides for management, monitoring, reporting, and an adaptive management strategy that will minimize uncertainty and risk to species. The Service believes that the MSCP prescribes all practicable means to avoid, minimize, and mitigate take and adverse impacts to Covered Species and the affected environment. In evaluating the various alternatives included

in the EIS, Pima County has shown that measures related to mitigation beyond those included in the Preferred Alternative would be impracticable from an economic perspective and also from the perspective of the availability of additional conservation lands that the County could acquire and manage.

### **3. The Permittees will ensure that adequate funding for the HCP and procedures to deal with unforeseen circumstances will be provided.**

The Service finds that the Permittees will ensure funding adequate to carry out the implementation of the MSCP. Through general obligation bonds and the RFCD tax levy as described in Chapter 8 of the MSCP, Pima County has already funded the acquisition of conservation lands that provide for mitigation in advance of the actual impacts anticipated in the MSCP. The Permittees have committed to securing approximately 116,000 acres of land for mitigation credit, depending on the exact extent and location of permitted development relative to the Maeveen Marie Behan CLS and species-specific mitigation needs. Acres needed for mitigation also depend on the mitigation credits available as determined by the stewardship levels on mitigation lands as described in Section 4.4 of the MSCP. In addition to the land acquisition and dedication, funding will be provided by the Permittees, through the funding elements described below, to manage, monitor, and administer these approximately 116,000 acres of mitigation lands. Pima County currently has actually gained control of more than 116,000 acres as described above, but given the mitigation framework as outlined in the MSCP, Pima County currently has approximately 110,000 acres of mitigation credits. Management and monitoring of these mitigation acres will be accomplished with existing staff, supplemented as necessary to meet the obligations set forth in the MSCP. Management, monitoring, adaptive management, and program administration will be financed primarily through general funds derived from County taxes as described in Section 8.2 of the MSCP, and supplemented through funds provided from RFCD tax levies.

#### Funding Strategy

The Permittees will ensure that adequate funding will be available to implement the acquisition, management, monitoring, and reporting activities identified in the MSCP. Highlights of the mechanisms for achieving adequate and consistent funding are provided below.

*General Funds:* Pima County's General Fund will be the primary source that already funds and will continue to pay for the ongoing responsibilities related to management and monitoring of mitigation land. Until or unless the other sources of funding identified in Chapter 8 of the MSCP are realized, the General Fund will cover the cost of the County's commitments under the MSCP. The General Fund comes from the primary tax rate on property. All costs, except those allocated to Pima County RFCD, and a portion of those described below as private sector costs, will be derived from the County's General Fund. If other sources of funding become available, they may be used to reduce the General Fund share. Projected costs are based on existing personnel and resources that will be used to implement the MSCP and its activities, except for the new monitoring program, which represents additional costs.

*General Obligation Bonds:* Voter-approved bonds have been the primary assured funding mechanism for purchase of mitigation lands. Pima County has spent approximately \$159 million since June 2004 on the acquisition of approximately 175,000 acres of mitigation lands (approximately 48,000 acres of fee-simple lands and 127,000 acres of lease lands; see MSCP Table 8.2; see MSCP Figure 4.1). The bonds used to purchase and lease these lands are paid back over time with secondary property taxes levied by Pima County, not RFCD.

*Flood Control District Tax Levy:* RFCD operating funds, derived from a secondary property tax authorized under Title 48 of the Arizona Revised Statutes, are currently used to fund management and monitoring of RFCD owned lands, including all those identified as Floodprone Land Acquisition Program lands. Some of these RFCD owned lands will be used as mitigation land under the Section 10 permit. Ongoing funded activities include fencing, signage, and development of management plans.

*Development Agreements:* The MSCP highlights a number of development agreements made since the adoption of the County's Comprehensive Land Use Plan Update (2001). These and future agreements may be used by Pima County to fund the management and monitoring of mitigation lands.

*Permit Fees:* The Development Services Department is an enterprise operation; hence these permit fees are the primary source of funds that support departmental operations including the administration of those Zoning Code requirements and Comprehensive Plan Environmental Policies identified in Table 4.1 of the MSCP that result in avoidance and minimization actions.

*Termination:* The ITP provides only for joint, not individual, termination by the County or RFCD, in order to minimize the potential for inadequate funding.

*Reporting:* Through an annual reporting process, the Permittees will provide updates on financial responsibilities and obligations. This annual report will be the primary document in support of Service-required status reports for permit continuance. The primary focus of the report will be to quantify impacts of Covered Activities, acres of mitigation lands and their location by way of the mitigation categories (Outside CLS, Biological Core Management Area, Multiple Use Management Area, and Important Riparian Area). The report will also provide updates on the implementation of the Pima County MSCP, including financial responsibilities and obligations. The results of the compliance monitoring report will be discussed with the Service in an annual meeting, followed by a presentation to the public. Financial expenditures will be reported annually to the Service as described in Appendix P of the MSCP. Once every three or more years, or as determined by the Service, the Service may conduct a formal financial audit.

#### Changed and Unforeseen Circumstances

The Service finds that the MSCP includes adequate procedures to address changed and unforeseen circumstances. The MSCP and Implementing Agreement include procedures for determining the occurrence of, and responses to, both changed and unforeseen circumstances.

Prior to submitting the application, the Permittees worked with the STAT to identify and describe a wide variety of changed circumstances that may affect Covered Species and their habitat, and can reasonably be anticipated and planned for in the MSCP. The MSCP's changed circumstances include involuntary loss of grazing leases, climate change, wildland fire, flood, drought, invasions by exotic species, the listing of a new species not covered by the plan, and many more. After submittal, the Permittees worked with the Service to refine how to respond to the specified changed circumstances events (see Chapter 7 of the MSCP for a detailed description of changed and unforeseen circumstances).

For the purposes of the Pima County MSCP, "unforeseen circumstances" are defined as any events that could not reasonably have been anticipated by Pima County and the Service at the time of the MSCP's negotiation and development, and that result in a substantial and adverse change in the status of the Covered Species. Table 7.2 of the MSCP lists examples of potential unforeseen circumstances for the Pima County Section 10 permit. During the 30-year permit period, the Service may determine that an event constitutes an unforeseen circumstance.

In accordance with the Service's "No Surprises" regulations in 50 CFR 17.22(b)(5) and 17.32(b)(5), in the event of an unforeseen circumstance, and assuming the MSCP is being properly implemented and additional conservation measures are required, any proposed additional conservation measures will not be the responsibility of Pima County to the extent allowed by law. The Permittees—in consultation with the Service—may choose to perform an expedited analysis of a Covered Species or its habitat affected by the alleged unforeseen circumstance and to modify or redirect existing conservation measures to mitigate the effects of the unforeseen circumstance, within the scope of existing funded conservation actions. To the extent that these modified or redirected conservation measures do not affect conservation of other species, habitats, or key areas, this may be deemed an adequate response to the unforeseen circumstance.

#### **4. The taking will not appreciably reduce the likelihood of survival and recovery of the species in the wild.**

We find that the incidental taking to be authorized under the proposed permit will not appreciably reduce the likelihood of the survival and recovery of the Covered Species in the wild. The ESA's legislative history establishes the intent of Congress that this issuance criterion be identical to a finding of "no jeopardy" pursuant to section 7(a)(2) of the ESA and the implementing regulations pertaining thereto (50 CFR 402.02). As a result, we have reviewed the MSCP under Section 7 of the ESA. In our BCO (USFWS 2015b), which is incorporated herein by reference, we conclude that the issuance of the proposed ITP is not likely to jeopardize the continued existence of the 44 species covered under the ITP. We also concluded that currently designated or proposed critical habitat for the Covered Species will not be destroyed or adversely modified. The Conclusion section for each of the Covered Species in the BCO provides additional details regarding our jeopardy and adverse modification analyses for the Covered Species.

**5. The Permittees agree to implement other measures that the Service requires as being necessary or appropriate for the purposes of the HCP.**

The Service has assisted Pima County in the development of the MSCP, commented on draft documents, and participated in numerous meetings and conference calls. The Service worked closely with Pima County during every step of the planning process and document preparation, so that conservation of the Covered Species would be assured and recovery would not be precluded by the Covered Activities. The MSCP incorporates the Service's recommendations for minimization and mitigation of impacts, as well as steps to monitor the effects of the MSCP and ensure success. Annual monitoring, as well as coordination and reporting mechanisms, has been designed to ensure that changes in conservation measures can be implemented if proposed measures proved ineffective (adaptive management) or impacts exceed estimates (changed circumstances). The Final MSCP provides commitments and procedures for on-going amendments to the conservation plan and ITP. It is the position of Service that no additional measures are required to implement the intent and purpose of the MSCP as detailed in the Final MSCP and its associated ITP.

**6. The Service has received the necessary assurances that the plan will be implemented.**

Pima County has had a history of implementing elements of the MSCP for a number of years prior to actually even applying for their ITP. This history shows a commitment by Pima County to assure that the MSCP will be implemented. The CLS and its governing policies and guidelines have been a part of Pima County's Comprehensive Plan since 2001. Based on previous affirmation from the Service, Pima County has, over the last decade or so, been actively acquiring a land portfolio to rely upon as mitigation for impacts resulting from Covered Activities (see MSCP Table 4.3 and Figure 4.1). Therefore, the County has secured mitigation lands prior to impacts and permit issuance. Taking into account the 25% mitigation credit for State Trust Land agreed to by the Service (see MSCP Section 4.4), Pima County has already acquired over 110,000 acres with which to mitigate future impacts (see MSCP Figure 4.1, Table 4.3, and Appendix H). This represents 95% of the mitigation projected to be needed over the 30-year permit (see MSCP Table 4.2).

The Service has received such other assurances as may be required that the MSCP will be implemented. Pima County has assured that the MSCP will be carried out as specified. Compliance with the MSCP is a condition of the permit. The authority of the permit is a primary instrument for ensuring that the MSCP will be implemented. Additionally, Pima County and the Service have developed an Implementing Agreement for the MSCP, which binds Pima County to fully implement and fund the MSCP.

**IV. MIGRATORY BIRD SPECIAL PURPOSE PERMIT**

The issuance of Pima County's Section 10 permit, in association with the Pima County MSCP, also constitutes a Special Purpose Permit under 50 CFR §21.27 for the take of ESA listed covered migratory bird species (see Covered Species above) to the extent outlined in the MSCP

and our BCO and subject to the terms and conditions specified herein. Any such take will not be in violation of the Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. §§703 – 12). The Special Purpose Permit shall be valid for the life of the ITP, provided the ITP remains in effect for that period and the Permittees remain in full compliance with the terms of the ITP, the Implementing Agreement, and the MSCP. Unlisted birds that are covered by the MSCP are not covered by the Special Purpose Permit and may be taken only if such take is not in violation of the Migratory Bird Treaty Act.

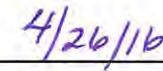
**V. GENERAL CRITERIA AND DISQUALIFYING FACTORS – ANALYSIS AND FINDINGS**

We have no evidence that the permit should be denied on the basis of the criteria and conditions set forth in 50 CFR 13.21(b)-(c). The Applicants have met the criteria for the issuance of the permit and do not have any disqualifying factors that would prevent the permit from being issued under current regulations.

**VI. RECOMMENDATION ON PERMIT ISSUANCE**

Based on the forgoing findings with respect to the Proposed Action, I recommend approval of the issuance of Permit Number TE-84356A in accordance with the MSCP and its supporting Implementing Agreement.

  
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Assistant Regional Director – Ecological Services  
U.S. Fish and Wildlife Service  
Southwest Region

  
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Date

## **REFERENCES CITED**

Pima County. 2015. Pima County Multi-Species Conservation Plan. Pima County, Arizona.

U.S. Fish and Wildlife Service (Service). 2015a. Final Environmental Impact Statement for the Pima County Multi-Species Conservation Plan, Pima County, Arizona. U.S. Fish and Wildlife Service, Region 2, Albuquerque, New Mexico.

U.S. Fish and Wildlife Service (Service). 2015b. Biological and conference opinion on the Pima County Multi-Species Conservation Plan, Arizona. Consultation No. 22410-2006-F-0459. U.S. Fish and Wildlife Service, Arizona Ecological Services Office, Phoenix, AZ.