



MEMORANDUM

Date: June 3, 2016

To: The Honorable Chair and Members
Pima County Board of Supervisors

From: C.H. Huckelberry
County Administrator

A handwritten signature in black ink, appearing to be "CHH", is written over the typed name "C.H. Huckelberry".

Re: **Multi-species Conservation Plan Species Recovery and Assessment**

The U.S. Fish and Wildlife Service (Service) is the federal agency in our area responsible for threatened and endangered species decisions, including listings, delistings, and critical habitat designations. These are decisions that can have wide-ranging effects on new development.

One important benefit that an approved Multi-species Conservation Plan (MSCP) provides is that the Service must consider the conservation benefits brought forward by our MSCP in their future decisions about species. While habitat conservation plans like Pima County's MSCP are not required to recover the species included in the plan (i.e., Covered Species), the various conservation mechanisms and outcomes of our plan may, in fact, contribute meaningfully to the recovery of Covered Species that are already federally listed, as well as helping to keep other Covered Species off of the Endangered Species list. Either of these two scenarios will benefit not only Pima County but other, surrounding jurisdictions in Arizona.

Pima County's actions will continue to play a role in benefiting the recovery of endangered species and our economy. It strikes a balance between the two. For these and other reasons included in the attached report, Pima County's MSCP stands out above the rest.

CHH/dr

Attachment

c: Linda Mayro, Director, Sustainability and Conservation
Julia Fonseca, Environmental Planning Manager, Sustainability and Conservation
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Ian Murray, Conservation Biologist, Sustainability and Conservation

Pima County's Multi-Species Conservation Permit – Promoting the Recovery of Threatened and Endangered Species

Ian Murray and Brian Powell
Pima County Office of Sustainability and Conservation

Pima County's Multi-Species Conservation Plan

The USFWS is soon to issue Pima County and the Pima County Regional Flood Control District (hereafter collectively referred to as the County) a Section 10 Incidental Take Permit, formalized under the County's Multi-Species Conservation Permit (MSCP). This is an important milestone for the County and is an approach that seeks balance between maintaining and preserving Pima County's ecological resources and promoting economic growth in the region. Although it will indirectly benefit all of the species across the permit area, the MSCP formalizes the agreement addressing 44 species of conservation concern (Covered Species) and their associated habitat, including nine federally endangered or threatened species, in exchange for the authorization to "take" the covered species (primarily using the loss of habitat) during the 30-year permit. While the goal of the County's MSCP is not to recover endangered species, the plan will promote species recovery through a variety of additional mechanisms and benefits, which is the focus of this paper.

Species recovery under the Endangered Species Act

The Endangered Species Act is a body of legislation that was passed to conserve the habitat of threatened and endangered species and to enact programs to prevent the extinction of these species. Recovery is the process that stops the decline of an endangered or threatened species by removing or reducing threats. Recovery ensures the long-term survival of the species in the wild. At that point, the species is recovered, and protection of the ESA is no longer necessary.

The question of what exactly is species recovery is a complex topic, but the U.S. Fish and Wildlife Service uses the general criteria of resiliency, redundancy, and representation of populations to assess progress towards species recovery (Evans et al. 2016). Tools used to recover endangered and threatened species include restoring and acquiring habitat, removing invasive species, conducting surveys, monitoring individual populations, and breeding species in captivity to release them into their historic range.

Significant species recovery successes have occurred as a result of the Endangered Species Act, including the population recovery and de-listing of the Bald eagle, peregrine falcon, and the American alligator. Perhaps more importantly, countless other species have been saved from extinction via this legislation; by one estimate 99% of listed species have been saved from extinction (Suckling et al. 2012).

The MSCP's landscape-level approach towards conservation

A core tenet of the MSCP is that our biological resources are best conserved by using a broad-scale, landscape-level approach towards the management and preservation of viable species populations across connected landscapes. A key feature of the County's Sonoran Desert Conservation Plan (SDCP)—and thus of the MSCP—is the Maeveen Behan Marie Conservation

Land System (CLS), which establishes a biological reserve system based on key biological features such as the occurrence of species of conservation interest. The MSCP in fact, reflects the core values of the SDCP already implemented for many years, and designed to protect and preserve the County's biological and cultural heritage. Notably, during the SDCP planning process and development of the CLS, the key tenets of recovery noted earlier (resiliency, redundancy, and representation) were explicitly built into the framework and recognized as being critical for the preservation of the entire array of species in Pima County.

Implementation of the CLS has promoted connectivity of habitat and watersheds, has supported a trend toward a more compact zone of urban development, and increased the representation of certain key habitats in protected areas. By operating within this geographic framework, the MSCP is already poised to benefit all of the Covered Species, as well as to maximize species recovery for covered and listed species.

The second key feature of the County's conservation approach is the extensive portfolio of County-owned or managed lands (almost 200,000 acres in all) that will be used for mitigation under the MSCP. While there will be some losses of habitat under the MSCP, analyses in the MSCP show the land portfolio provides at least one acre of mitigation for each acre of anticipated loss as a result of the activities covered under the permit. In fact, of the 32 species in this analysis (summarized in Table 4.4 of the MSCP), 26 species (81%) had at least five acres of mitigation for every acre of habitat projected to be lost.

Recent analyses suggest that as the area of land covered by an MSCP increases, the chances that a listed species will be considered as 'stable' or 'improving' increases (Langpap & Kirkvliet 2012). The County's MSCP permit area of about 1.3 million acres is among one of the larger habitat conservation plans to date (Rahn et al. 2006), maximizing the potential for contributing to species recovery.

Additional actions that promote species conservation and recovery

Implementation of the CLS guidelines and management of large land holdings are two key pillars of the County's conservation efforts. These "coarse" filter approaches help ensure the long-term success of species recovery efforts, but more "fine" filter, targeted actions are also an important component to the species recovery. Such actions under the MSCP mirror actions taken by the Service to support recovery of ESA species; these actions include:

- Support of studies that advance the state of knowledge regarding species' status, distribution, or life history.
- Partnership and collaboration with other resource management agencies working towards the common goal of species preservation and recovery which is beneficial due to the pooling of resources and creation of 'economies of scale.'
- Participation in re-introduction efforts and subsequent monitoring of select listed species (e.g., Chiricahua leopard frog) on County lands together with the enhancement of habitat features to best ensure the success and prosperity of these re-introductions.
- Monitoring and management of species that are currently not listed. The MSCP serves to promote these species' populations to keep them off the of the Endangered Species list.

- County's leadership in land management and monitoring activities that help leverage grant funds and inform other agencies to act on the behalf of Covered Species (e.g., our current work with the lowland leopard frog), as well as consider these resources in such actions as review of large-scale projects.
- Additional discretionary actions are concerned with incorporating means to address wildlife crossings in development projects which promote species recovery through the preservation of movement patterns important to resisting the dangers of population fragmentation and isolation, as well as reducing direct mortality.
- Incentives to improve the condition of species habitats on rangelands and in riparian areas.

Pima County – a long history of environmental awareness

Many of the policies and concepts written into the MSCP have in fact been operational policy for more than a decade. These measures can be considered avoidance and minimization measures that minimize the impacts on sensitive resources such as ground water and riparian habitats. Therefore, the MSCP relies on many existing County ordinances that are directly or indirectly beneficial to listed species and thus contribute towards species recovery primarily through the protection of specific habitats and/or ecosystem function that are critical to many Covered Species such as the continued existence of natural groundwater resources.

Additionally, these ordinances, policies and guidelines address a variety of impediments towards population recovery through the management and reduction of stressors such as invasive species, nest/roost site disturbances, off road vehicle traffic, free-ranging pets, or illegal dumping. These ordinances will not be exhaustively listed here, but may be found in Chapter 4 of the MSCP.

Avoidance and minimization measures such as those that Pima County has been operating under for many years also play an important role in species conservation because they factor importantly in keeping species off of the Endangered Species List. For example, in a recent high profile decision the USFWS decided that the Sonoran desert tortoise, which was a candidate species for ESA listing, did not need to be federally listed in part due to the ongoing conservation efforts, monitoring, research, as well as various avoidance and minimization measures that natural resource managers on the federal, state, and local level have already implemented. A decision such as this is not only beneficial from the perspective of species conservation, but also lends itself to a more effective and flexible management strategy for the species on a local level.

The MSCP also takes the critical step to address ongoing climate change and its potential threats and hindrances to species recovery. The predicted changes in temperature and precipitation dynamics are likely to present considerable challenges to the persistence and recovery of populations of many Covered Species. However, the guiding principles of maintaining landscape connectivity, preservation of key and sensitive habitat associations (e.g., talus slopes and riparian habitat), and creation and protection of open space lands serves to bolster the ability of the MSCP to contribute towards species maintenance under climate change. Another important part of maximizing species recovery under climate change is to manage and reduce other non-climate stressors that may impede species recovery. Indeed, the

MSCP's many avoidance, minimization, and mitigation measures also serve to maximize species' abilities to withstand climate change stresses and thus also maximize species recovery potential.

The achievement of species recovery goals is best done through a combination of species-specific conservation measures, monitoring, and innovative and adaptable land management practices. The MSCP contains all of these elements. The land management strategies include a framework for the preservation and restoration of both upland and riparian habitats, which can contribute towards the recovery of a number of listed species.

The County's MSCP also mandates the scientifically-grounded grazing management of large expanses of ranch land which makes an important contribution to the preservation and potential recovery of those listed species in upland environments and helps to curb the damaging effects of habitat fragmentation and urban sprawl. These ranches are run as partnerships between local ranchers who maintain the daily operations of a working ranch, and the County. These ranchers have entered into legal agreements with Pima County to ensure that the ranches are run under conditions of land stewardship laid out in management agreements as written in the MSCP. The County's ranch management strategy is based upon resource use standards and methodologies grounded in the science of range management and widely accepted by those tasked with managing these resources on a federal and state level. Further, as resources permit, Pima County will develop models of sustainable ranch stewardship, or Coordinated Resource Management Plans for its ranches which are structured as a collaborative effort between ranch operators, natural resource agencies, and the public to plan the best grazing methods compatible with the particular rangeland resources, conditions, and goals for a given ranch.

The role of monitoring and adaptive management

The lack of monitoring data and an inability to adequately respond to monitoring information through adaptive management have both been cited as deficiencies in many species recovery programs (Evans et al. 2016). A key part of the County's MSCP is the Pima County Ecological Monitoring Program which will collect data on a wide range of resources so the data can be used to guide appropriate management actions best able to promote species retention and recovery. Unlike many HCPs, the County's program goes beyond monitoring at the species level and extends to additional areas that are also key elements of the species recovery process (indirectly or directly) including monitoring obligations associated with soils and vegetation parameters, tracking habitat and species threats, inventory and management of caves and mines, water and watershed health, tracking and managing for invasive species, and tracking of climate.

How to assess contributions to species recovery

As noted throughout this white-paper, Pima County has—and will continue to—develop conservation actions that support the recovery of listed species. A key question then is: How can these contributions to species recovery be measured?

Through the creation of a robust monitoring structure and the subsequent collection of monitoring data, the MSCP is inextricably linked with species conservation, and will play an integral role in species recovery grounded in a sound adaptive management framework. The

very structure of the County's ecological monitoring is targeted towards understanding and quantitatively estimating species population status and how these populations are impacted by factors such as habitat condition, climatic variables, and management actions. Through the action and structure of the monitoring program, the County will have the data (for example population abundance or occupancy data) necessary to inform the conservation strategies important to species conservation.

There are also additional dimensions to the species recovery process that may arise over the life of the MSCP and that can be measured. The U.S. Fish and Wildlife Service uses various metrics to assess progress towards species recovery that include measuring how resilient, redundant, and representative populations of a species are (Evans et al. 2016). Importantly, these criteria are all likely to improve when the area or extent of occupied habitat as well as the population size/number of populations increases, both of which can be explicitly measured.

One measure of the MSCP's contributions towards species recovery is the total acres of habitat protected versus acres lost through the MSCP, that is known to be used and or occupied by a recovering species, and that would not otherwise have been protected. Similarly, the total increase in population size or the number of additional populations that have been established or enhanced via mechanisms contained within the MSCP can also be estimated. Particularly if one can delineate those species populations, or estimate a number of individuals that would not exist or be legally protected if it were not for the body of the MSCP, then that is a meaningful and quantifiable contribution that the MSCP has made for recovery of that species.

Parties external to the County may also provide valuable input regarding the gauging of the role of the MSCP in contributing to species recovery. The USFWS itself is likely to be a source of information in this regard, in the form of species recovery assessments attached to any delisting process, as well as the input from local USFWS staff biologists who are intimate with the dynamics of the listed species and their habitats that are covered by the MSCP. Any such analysis will include data collected by Pima County, but also other entities working on the species throughout its geographic range.

How to assess contributions to species recovery – the intangible

There are also considerable intangible ways that the MSCP may contribute to species recovery that will be more difficult to measure, but nonetheless may benefit species recovery. For example:

- The use of an external review panel, the Science Technical Advisory Team (STAT) to provide scientific review and assess the effectiveness of the MSCP.
- The review and oversight of local stakeholders and special interest groups to monitor how well the MSCP is supporting efforts to establish new species populations in partnerships with others.
- Shared, long term monitoring data critical to the creation, amendment, or execution of species recovery plans.

The Multi-Species Conservation Plan – conservation in action

Society's use of habitat conservation plans to balance conservation with economic development under Section 10 of the Endangered Species Act is one that is becoming more widely used on both large and small scales. Through both its long-standing SDCP as well as the

MSCP, the County is well poised to contribute substantially to the conservation and potential recovery of a wide variety of plants and animals benefiting society, as well as contributing to a diverse and high-functioning ecosystem.

Literature Cited

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