Pima County Off-highway Vehicle (OHV) Monitoring Protocol

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PIMA COUNTY
SUSTAINABILITY & CONSERVATION

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Cover photo: Pima County Regional Flood Control District's Diablo Estates property. Pima pineapple cactus (within circle) adjacent to an OHV track

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Abstract

In Pima County, the iconic and variable landscapes that sustain many native species are often the same that attract people seeking opportunities for outdoor recreation. Off-highway vehicle (OHV) use is a common mode of recreation in Pima County, as it is nation-wide. Like other kinds of recreation, OHV use is not always compatible with conservation goals, including sustainable management of threatened and endangered species. Where operators leave established roads and trails that are authorized for OHV use, the result can be significant destruction of vegetation, increased soil erosion, impaired water quality, noise that disturbs wildlife movements, and even the directly mortality of organisms. The Pima County Multi-Species Conservation Plan (MSCP) outlines conservation measures that the County is undertaking to preserve and enhance 44 species and the habitats that support them. Under the MSCP, the County is committed to avoiding and minimizing impacts of its disturbances. This protocol describes the geographic and regulatory environment of Pima County's fee lands and grazing leases, the processes by which data on unauthorized OHV use and impacts will be collected, and the channels of communication that will be used to report violations and needs for a management or enforcement response.

Acknowledgements

We thank our colleagues in Pima County, particularly staff within Natural Resources, Parks and Recreation and the Regional Flood Control District for their ongoing passion and diligence in working towards the best conservation and stewardship of Pima County conservation lands. We thank Brian Powell, NRPR, and Marisa Rice, RFCD, for providing helpful comments and review. We thank Pima County IT staff, particularly Pankaj Jamwal for his continued efforts to support staff's digital data collection and database needs.

Background and Objectives

Recreation involving off-road or off-highway vehicles (OHV) continues to grow throughout lands open to the public, especially in the western United States. The wide interest and demand for areas to recreate in this manner means that many land managers need to include OHV recreation management in land management plans. The Arizona Motor Vehicle Division (Department of Transportation) governs the use of OHVs, including requiring a registration and licensing system (except on private lands), and various state laws regulate the operation of OHVs in Arizona. Funding from this licensing system goes to support the three State departments that manage, enforce, and liaise with the OHV community in Arizona: Arizona State Parks, Arizona Game and Fish Department, and the Arizona State Land Department. Only the latter two departments perform law enforcement as it pertains to OHV use.

The State of Arizona defines an OHV as being a motorized vehicle that is used primarily on a natural terrain and including any "two-wheel, three-wheel, four-wheel vehicle, motorcycle (greater than 49cc), dune buggy, amphibious vehicle, ground effects or aircushion vehicle and any other means of land transportation deriving motive power from a source other than muscle or wind." However, for the purposes of this protocol the County includes potential impacts from off-road use of ANY motorized vehicle, including jeeps, trucks, cars, or any other otherwise street-legal vehicle that may be used on Pima County open space lands.

Pima County's Multi-species Conservation Plan (MSCP) is the County's way to remain in compliance with its Section 10 Incidental Take Permit issued by the U.S. Fish and Wildlife Service (USFWS) in 2016 (Pima County 2016). The MSCP covers 44 species of plants and animals (Covered Species), including eight federally listed species. A key part of the MSCP is Pima County's ecological monitoring program (EMP), which is tasked with tracking the effectiveness of the County's conservation and stewardship of the MSCP-covered species and their habitats across Pima County lands. Though the scope of the EMP includes most County lands, the majority of the EMP is focused towards existing and potential mitigation lands that Pima County has allocated or may allocate as mitigation under its MSCP. An important part of the EMP highlights the commitment to track various types of threats that may directly or indirectly impact Covered Species or their habitats. Impacts stemming from OHV use (primarily unregulated use) on County lands may be an especially detrimental threat.

The objective of this protocol is to address how Pima County will assess the threat that OHV traffic poses to potential or existing Pima County MSCP mitigation lands and the natural resources that they contain. Where appropriate and feasible, Pima County will work to identify and address OHV activity that is damaging these lands or the natural resources therein, through outreach, education, deterrence, and by working with law enforcement.

Geographic scope and context

Pima County's open space lands are made up of > 250,000 acres of fee (County-owned) and leased lands (for which the County holds a grazing lease) surrounding the City of Tucson (Figure 1). The County's Range program oversees eleven active ranches. In most cases, these ranches are made up of a combination of land that Pima County owns and land that the County leases either from the Arizona State Land Department (ASLD), or the Bureau of Land Management (BLM). The County has the greatest latitude for management of its fee lands. In contrast, on the County's leased lands, most management (outside of those actions directly tied with the County's grazing program) lies with either BLM or ASLD. This is an important distinction because on leased lands, any OHV violations and related management or enforcement needs would be reported to the appropriate contact at the state (ASLD or Arizona Game and Fish Department) or federal (BLM) level. However, on fee lands, reports would go directly to the Pima County Sheriff's Department.

This protocol makes a distinction between otherwise legal operation of motorized vehicles on trails and roads versus illegal operation of motorized vehicles. See Appendix A for a summary of OHV regulations by land manager. It is the impacts associated with the latter, illegal use and operation of OHVs that are the focus of this document. Important to note is that US Border Patrol operations and other types of law enforcement and rescue operations may, and often do, involve traveling off-road, including extensively in desert washes. While there may be negative impacts associated with these actions, they are done during legal duty operations.

Illegal operation of motorized vehicles includes:

- Traveling on trails or roads that are closed to motorized traffic
- Driving across open lands not demarcated with a road or trail
- Creating new roads
- Traveling through desert washes and streams

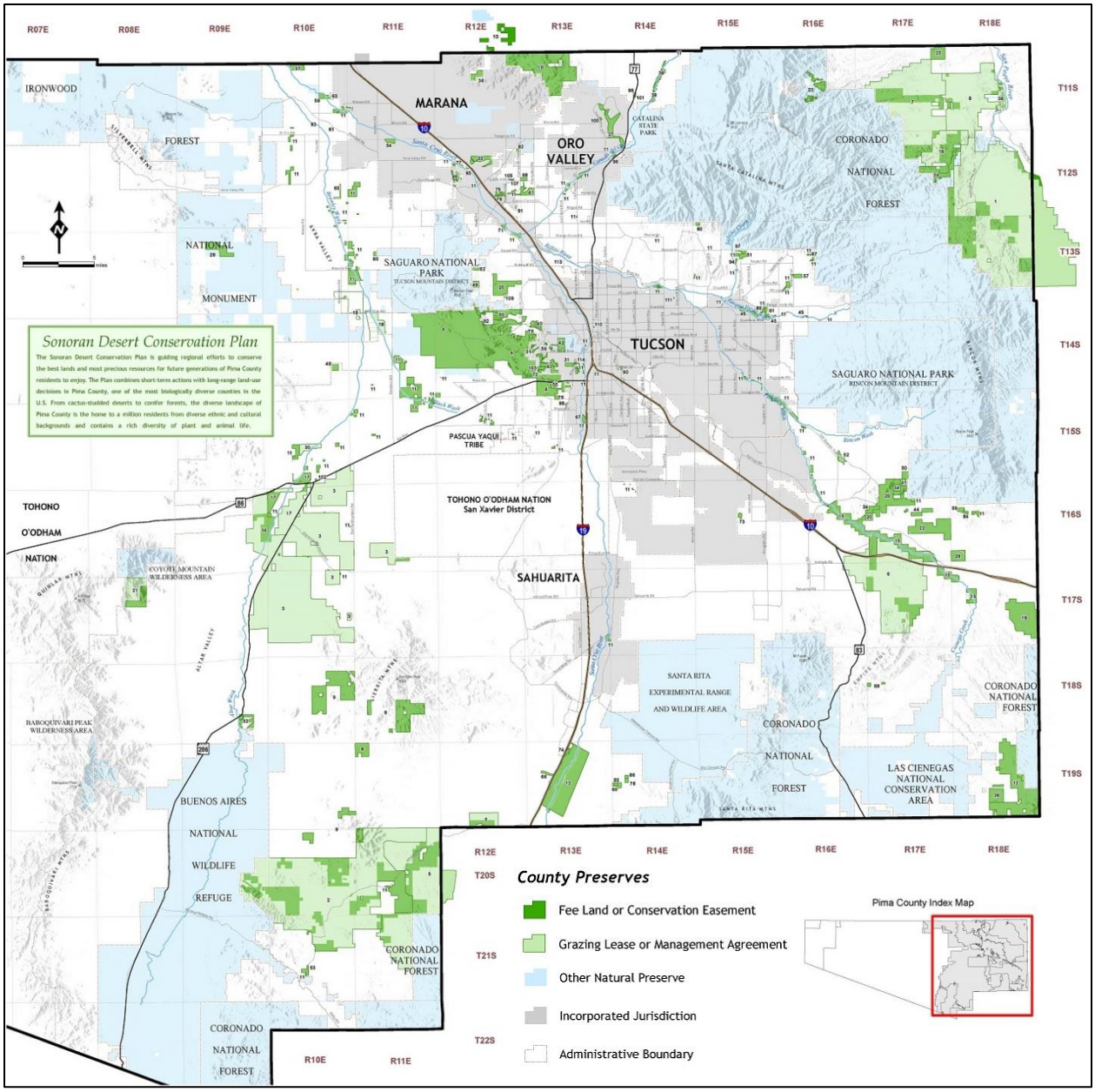

Figure 1. Map of Pima County's conservation lands in eastern Pima County, including fee lands (dark green) and lands held under grazing leases or some other management agreement (light green).

Summary of OHV regulations by agency

Pima County

For some of its ranches, Pima County has cooperative stewardship agreements with the Arizona Game and Fish Commission to maintain recreational access on existing roads that have been historically used by the public, are indicated in the relevant agreement, and that traverse County-owned ranch lands. Under these agreements, Pima County has the ability to close roads due to public health and safety concerns, as well as for protection of ecological values. Pima County does not allow OHVs, or any use of motorized vehicles, within its extensive trail system

in Tortolita and Tucson Mountain Parks or within Cienega Creek Natural Preserve. Pima County ordinance 9.12.020 stipulates that OHVs may not be used in any publicly owned washes (except for cases where an otherwise legal road or trail crosses a wash) as well as prohibiting any OHV operation that contributes visible dust pollution that extends across property lines into areas including recreational, residential, or business areas, among others. Furthermore, Pima County does not permit use of motorized vehicles on trails, cross-country, or on unsurfaced roadways where restrictions have been posted or signed at Pima County parks and recreation areas (see Pima County Parks Rules, Ch. 4, Sec. 040; https://webcms.pima.gov/UserFiles/Servers/Server_6/File/Government/Natural%20Resources%20Parks%20and%20Recreation/Rules/Park_Rules.pdf). Where OHV use is allowed on the County's leased lands and where ownership lies with either the Arizona State Land Department or Bureau of Land Management (additional details are provided below), operators may not drive off-road, through washes, or through otherwise closed areas as indicated by signage. To report any OHV violations within unincorporated Pima County call the Pima County Sheriff's non-emergency number at 520.351.4900.

One area on Pima County lands where OHV use is encouraged (on trails) is on Pima County's Southeast Regional Park (https://webcms.pima.gov/cms/One.aspx?pageId=77130), located near the Pima County Fairgrounds. The Southeast Regional Park offers recreation ranging from shooting sports (i.e., shooting and archery ranges) to a variety of motorsports. At this park there are a variety of trails where OHV riders of all skill levels can enjoy the sport in a safe and regulated environment.

City of Tucson

The City of Tucson does not permit any operation of an OHV off of the roadway that is within ¼ mile of a structure (occupied or not)(Tucson, AZ Code of Ordinances, Section 11-70.1). In this case a 'roadway' is any dedicated street, alley, road, or parking lot that is generally open for vehicular use. Here, a 'roadway' also covers any private property or driveway that is used for any purpose (with permission from the private property owner) except for access or entry into a wash.

Town of Marana

The Town of Marana's code prohibits the use of any motorized vehicle on any property owned or leased by the town other than a public roadway. Similar to Pima County ordinances, motorized vehicles may not be operated in any publicly owned wash with the exception of instances where an otherwise legal and open roadway crosses such a wash. Also, operation of a motorized vehicle that contributes visible dust pollution that then crosses into other residential, recreational, or business areas is prohibited (Marana Town Code Chapter 12-4-2).

Town of Oro Valley

The Town of Oro Valley does not permit the use of off-road motorized vehicles on any undeveloped public or private property, including washes, desert areas, and non-paved empty lots (Oro Valley Town Code Section 11-3-17). Some exceptions are permitted for the use of

OHVs off of the roadway on private property, including with written permission of the land owner, use for farming or ranching purposes, and others. However, these exceptions for use on private property do not include allowing the operation of an OHV within a wash closer than ¼ mile to any structure.

State of Arizona

Arizona Department of Transportation and Arizona Game and Fish Department

By law, all OHV operators need to have a valid OHV decal (issued by the Arizona Motor Vehicle Division) when on any public or State trust lands within Arizona (https://www.azgfd.com/OHV/). This decal applies to any vehicle weighing ≤ 1,800 pounds and/or with an engine > 49 cubic centimeters. It is the operator's responsibility to have the appropriate registration and license plate which in turn indicates where the OHV may be operated (i.e., is it 'street-legal' to allow operation on roads and trails where this registration is required). The Arizona Game and Fish Department supports an OHV recreation program and provides OHV-related law enforcement. See their website for additional information (https://www.azgfd.com/OHV/Rules/).

Arizona State Land Department

ASLD allows OHV operators with a valid OHV decal to cross State lands on existing roads, designated routes, and trails (unless otherwise indicated as closed). Importantly, in most cases washes are not considered to be open and existing roads or trails and subsequently are not areas where OHV users may operate. Beyond this travel, having the OHV decal does not permit users to engage in any other activities on State lands, such as picnicking, parking, staging, camping, or operating support vehicles. Separate recreation permits are required for these activities (https://land.az.gov/faqs).

US Forest Service, Coronado National Forest

A number of Pima County open space lands are adjacent to large expanses of US Forest Service lands spread across three ranger districts (Sierra Vista, Nogales, and Santa Catalina Ranger Districts) of the Coronado National Forest. The Travel Management Rule mandates that all national forests need to have a sustainable roads management plan that includes the minimum roads network required to serve the needs of constituents and maintain the ecological integrity of the national forest. To that end, the Coronado National Forest has created a Motor Vehicle Use Maps, by district, that indicate which routes are open to motorized traffic, during which seasons, and to which types of motorized traffic (https://www.fs.usda.gov/detailfull/coronado/maps-pubs/?width=full&cid=FSEPRD585913). It is the responsibility of the motorized vehicle user to understand what is allowed, based on where they are. An interactive map published by the US Forest Service includes information detailing where and what types of motorized travel are allowed across all Forest lands (https://www.fs.fed.us/ivm/index.html).

In many cases, roads that are considered to be "motorized roads" for otherwise legally operated OHVs on the Coronado National Forest continue onto lands that Pima County either

manages directly (fee lands) or lands for which Pima County holds the grazing lease from the BLM or ASLD (leased lands) for which the respective agency land holders would manage. In some cases, there is not an evident gate or signage signaling a change in land ownership. None of Pima County's grazing leases include any leased US National Forest lands.

US Bureau of Land Management

OHV operators on BLM lands must comply with all relevant state rules and regulations (i.e., in Arizona users must follow State rules and maintain a valid OHV decal, motorcycles must be outfitted with an approved spark arrester and muffler). The BLM designates its lands as either open, limited, or closed. Open areas are those for which any legally operated vehicle is allowed at all times at any location, while a limited area means that there are restricted times, areas, or particular kinds of vehicular use. Closed areas are those places for which off-road vehicles are not permitted. BLM does not allow any off-trail OHV use, even for hunters retrieving big game. These designations and other information regarding OHV use on BLM lands are addressed in a particular area's Resource Management Plan. Users are advised to consult with the appropriate state or local BLM field office for additional information. More information is available online (https://www.blm.gov/programs/recreation/recreation-activities/arizona).

Impacts from OHV use on natural resources

Impacts of OHV use on natural resources are wide-ranging and well-documented (e.g., Ouren et al. 2007). They include impacts to soils, vegetation, wildlife, water quality, and air quality that is affected by dust and exhaust (Ouren et al. 2007; Howard et al. 2014; Switalski 2018). Particularly where OHVs deviate from roads and trails, soils are compacted and water infiltration is reduced, leading to reduced primary productivity and increases in erosion in affected areas. In many cases the impacts of cross-country ORV use on soils and vegetation are visible and measurable after a single pass of an OHV; repeated use leads to cumulative impacts that can persist on the landscape for decades. OHVs can serve as vectors for spreading invasive plants (Ouren et al. 2007; Switalski 2018). In addition to the widely-recognized negative impacts on vegetation and wildlife, OHV use can damage cultural resources and interfere with other forms of recreation (Switalski 2018). Noise pollution can disrupt the activities of both people and wildlife (Ouren et al. 2007; Switalski 2018).

In the Southwest especially, washes and streambeds are often used for unauthorized OHV travel because they traverse the landscape and, combined with roads, provide a network of pathways. Where washes are incised, they also provide opportunities to travel unseen as steep banks can obscure the line of sight from a distance, making it much more difficult to detect intrusions while they are happening. The popularity of washes and streambeds as travel corridors for OHVs puts a number of MSCP Covered Species at risk, including birds nesting in riparian/xeric-riparian vegetation that may be disturbed by noise as well as physical damage to vegetation. Desert washes and their associated vegetation communities, which are often more structurally complex with higher primary productivity, are used by a variety of animal species, and OHV activity may negatively impact the use of these areas by some of these species, as well

as degrade the natural vegetation structure. Additionally, during hot summers, OHV use may prevent some wildlife species from utilizing shaded and cooler microhabitats that are often primarily available in these washes. On top of these concerns, OHV traffic has the potential to impact wildlife through the mortality of individuals that are run over. For example, the giant spotted whiptail is one of many species that inhabit riparian washes and may be crushed by OHVs. Also of concern are native fish, amphibians, and other riparian species (many of which are also MSCP covered species), which may suffer mortality directly or have their habitat damaged via changes in stream and pool morphology caused by tires, which may also degrade water quality and potentially be a means for the dispersal of some invasive species.

Individual plant species may also be negatively affected by OHV traffic through a variety of mechanisms. For example, the MSCP covered species Pima pineapple cactus grows in the same open and largely level areas that may be used by OHV operators. The locations of many known Pima pineapple cacti populations (*Coryphantha sheeri* var. *robustispina*; PPC) are in areas where Pima County staff has observed OHV use in the past (see cover photo), and where there is easy access for OHVs via washes and roads, irrespective of whether use of these access routes is authorized for the general public. PPC is particularly vulnerable to off-road and off-trail travel; its small stature makes it difficult to see and subsequently avoid. If seen, it may still be crushed by travel because, unlike large cacti, it poses very little threat to vehicles and operators that may run over it. Furthermore, off-road travel may cause harm to ground-nesting bees, such as *Diadasia rinconis*, that pollinate PPC (McDonald 2005). OHV-related impacts may also enhance surface erosion, alter the natural hydrological function of an area, negatively impact potential nurse plants for germinating cacti, and generally degrade the habitat for this and other species.

MSCP Changed Circumstances

All USFWS Habitat Conservation Plans (HCP), of which the MSCP is one, are required to identify 'changed circumstances' that could be anticipated to come about during the duration of the conservation plan. These changed circumstances are any processes or developments that could be reasonably anticipated to impact a covered species, covered species habitat, or the geographic area included in the conservation plan. In addition to identifying potential changed circumstances, the conservation plan's proponent, here Pima County, must indicate the potential response or reaction to the changed circumstance. A complete list is included in Table 7.1 of the MSCP (Pima County 2016). One of the MSCP's changed circumstances is any loss or degradation of habitat that off-road vehicle use may have on potential or allocated mitigation lands, as well as any negative and direct impacts that off-road vehicle use may have on covered species (i.e., direct mortality).

Importantly, not every observation or instance of OHV use rises to the level of a changed circumstance. Indications that OHV use on allocated or potential Pima County mitigation lands has resulted in impacts to MSCP covered species or their habitats would trigger subsequent assessment and discussion with the Service about whether a changed circumstance has occurred. The following situations could constitute an MSCP changed circumstance as it relates to OHV activity:

- Evidence that OHV activity has resulted in direct 'take' or mortality (i.e., individuals run over) of covered species
- Evidence to suggest that OHV activity has significantly and negatively impacted a covered species or a local population of a covered species or its habitat

In some cases, such as in discretely bound aquatic habitats, or other areas containing sensitive or small populations of covered species, observations of illegal OHV activity and the resulting assessment of whether a changed circumstance has been met may be relatively straightforward. This assessment should include evaluating whether the OHV impacts have resulted in a negative impact to the continued persistence or status of one or more covered species or populations. For example, if OHVs were found to be impacting nesting success or territory occupancy of cactus ferruginous pygmy owls (an uncommon species that does not occur widely across all County lands) on lands that the County manages, then there could be a clear case of a changed circumstance being triggered. This observation would then subsequently trigger an assessment of whether it was a 'significant' impact. In this or a similar case, prudence calls for being conservative when evaluating if a changed circumstance has occurred (i.e., a relatively lower bar for making the determination that there may be significant impacts to a species or its habitat). Less straightforward would be observations of OHV impacts that occur in areas with widespread or relatively 'common' covered species. In many of these cases, it is unlikely that an evaluation of the impact would meet the threshold determining that a changed circumstance has been triggered (i.e., a relatively higher bar for making the determination that there may be a significant impact). Scattered cases of OHV tracks in Pima pineapple cactus habitat would be an example where the threshold necessary to attain a changed circumstance may not be met for this relatively widespread MSCP covered species on County lands. See Appendix B for a summary of the relative threat that OHV-related impacts may have on covered species and their habitats across County lands.

County staff collect data on instances of unlawful OHV use (particularly cases where OHV users are driving off of pre-existing roads or trails) on Pima County fee lands and report these to relevant land managers within the County. The County would only then report these observations to the USFWS only if observed OHV use is determined to be potentially triggering a changed circumstance. For these cases, Pima County will work with the USFWS on the best response strategy as the situation may dictate, ranging from pursuing enhanced enforcement to implementing road and habitat restoration efforts. The status of land ownership (i.e., County-leased versus County-owned) of the potential or allocated mitigation land will also have bearing on the available scope of management responses. Additionally, whether the OHV impacts are occurring on otherwise legal and open roads and trails, or are occurring in areas closed to OHVs and/or off of any established roads or trails, will influence how or what Pima County's response may be. Ongoing efforts in Pima County include identifying all existing unimproved roads on County lands, especially on ranch lands, and creating a data layer within a GIS to manage those data. This information could then be used in property or area specific

management plans and to monitor change over time for this type of land use and its associated impacts.

Methods

County staff will rely largely on incidental collection of data on occurrences of unlawful OHV incursions and associated impacts. Some MSCP-covered species and their habitats may have a relatively high potential to be impacted by OHV activity based on patterns of recreational use and locations of particular County conservation lands relative to the Tucson metro area and major travel routes. Staff will record data on OHV activity during routine property assessments and inventories, as well as ancillary to several species-specific monitoring protocols, such as Pima pineapple cactus monitoring and cactus ferruginous pygmy owl monitoring.

Property assessments

County staff regularly conduct property assessments and inventories on County lands. These visits occur on both new acquisitions and on established County conservation lands, and so include a combination of first-time visits and repeated visits to the same general area. Property assessments have a variety of objectives including gaining a better understanding of the distributions of Covered Species and other species of conservation concern; documenting the occurrence and status of sensitive habitat elements such as springs, riparian vegetation, and key plant communities; and generally enhancing knowledge of the biodiversity and natural resources contained on County lands. Further, staff document the status of infrastructure on County lands and a host of threats (e.g., presence of invasive species, vandalism, hazards such as open mine shafts, broken fences on range lands, and any illegal use of the land or its resources). Observations of this sort are shared with the appropriate land managers within the County and/or law enforcement.

Though this protocol primarily addresses the work of EMP staff, staffs from multiple County departments collect information on and respond to illegal OHV incursions. Pima County Regional Flood Control District, and Pima County Natural Resources, Parks and Recreation both have staff who regularly spend time in the field; they monitor the condition of various resources, assess management needs, and implement management on mitigation lands (allocated and potential), as well as throughout the County's preserve system. For example, these departments have already implemented measures to keep unlawful OHV traffic out of County lands, such as Tortolita Mountain Park, Cienega Creek Natural Preserve, and Bar V Ranch.

Other field monitoring protocols

EMP will leverage time spent implementing other monitoring protocols to collect data on OHV intrusions. When they conduct field monitoring for a number of monitoring elements, EMP staff are already required to be in parts of the County's conservation lands where monitoring OHV incursions is a continual need. Some of these endeavors are species-specific monitoring efforts where observations of OHV activity can be easily incorporated into overall data collection. For

these species in particular, OHV impacts have been identified as potentially harmful to their habitats; for some species, OHV activity may even result in direct take.

For example, EMP will leverage time spent monitoring Pima pineapple cactus (PPC) to concurrently monitor OHV use and impacts. County staff will record observed indicators of OHV use and impacts while implementing distance sampling at PPC monitoring plots. During regularly scheduled monitoring, surveyors will look for the signs and impacts of OHV use, including OHV tracks, damaged vegetation, and cut fences. Using a field tablet and digital datasheet, surveyors will collect data on the extent and geographic location of OHV incursions, and ensure that the appropriate land manager receives these observations.

Pima Association of Governments staff and Pima County staff map surface water quarterly along Cienega Creek and Davidson Canyon in the Cienega Creek Natural Preserve. Additionally, EMP staff regularly monitors other stream reaches on a more infrequent schedule. During these 'wet-dry' mapping surveys, surveyors walk the stream corridor, collecting data on pools, flowing water, and dry areas. In addition, staff collect data on other observations of significance, such as MSCP-covered species detections and invasive species. These efforts will also include opportunistic data collection on OHV use and impacts, including OHV tracks and vegetation damage. Observations made by EMP staff will be collected via a digital database on a field tablet and routed in a timely manner to the appropriate land manager.

Lastly, EMP staff completes monitoring for cactus ferruginous pygmy-owls (CFPO) every three years. This monitoring occurs largely in the Altar Valley (i.e., southwestern portion of Pima County's conservation lands in an area that is already known have illegal OHV use). Woody vegetation, large trees, and scattered large saguaros are important components of CFPO habitat, and therefore monitoring transects are often located along desert washes where mesquite woodlands occur. Staff will opportunistically record observations on OHV use while implementing this protocol. As indicated above, observations will be collected via a digital datasheet and sent to the relevant land manager.

Data management and analysis

In most cases, data on incidental observations, including observations of OHV impact, extent, and location, are entered directly into a digital datasheet on a field tablet and 'synced' with the geodatabase once the tablet has viable wireless connectivity. However, in some cases, field data are recorded using a handheld GPS and paper datasheets, or are reported to EMP staff by others via other means. These data are downloaded and manually entered into a geodatabase (maintained by Pima County IT GIS) once the surveyor returns to the office, using the ArcGIS Collector app. After data are in the geodatabase, surveyors check the data for any inaccuracies or errors before the data are finalized. Proofed data in the geodatabase are available for County staff and external partners (as relevant) via several mechanisms, including visualization in an Enterprise geodatabase in ArcGIS Portal or sharing of exported shapefiles. County IT GIS staff are working to create a workflow such that time-sensitive data requiring a land manager's attention (i.e., damaged infrastructure, certain invasive species, some OHV incursions), and that

are collected by field staff using digital datasheets, are routed automatically to the appropriate County land manager on a daily basis through an automated script.

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Appendix A: A summary of OHV prohibitions by jurisdiction relevant to Pima County lands

Table A-1. Summary of relevant OHV prohibitions for land managers managing land among and near Pima County lands.

Jurisdiction	Prohibited use of OHVs	Enforcement	Code/Ordinance/Rule*
Pima County	• Publicly owned washes (except in legal road crossings) • Trails, cross-country, or on unsurfaced roadways where restrictions have been posted or signed in Pima County parks and recreation areas • Operation that contributes visible dust pollution that extends across property lines into other areas	Pima County Sheriff	• Pima County Ordinance 9.12.020 • Pima County Parks Rules Ch. 4, Sec. 040
Town of Oro Valley	• No use on any undeveloped public or private property, including washes and desert areas ○ See exceptions – including farming, ranching, with written property owner permission, etc. • Within a wash and closer than ¼ mile to any structure (for private property exception)	Oro Valley Police Department	• Oro Valley Town Code Section 11-3-17
Town of Marana	• No use on any property owned or leased by the Town other than a public roadway • Publicly owned washes (except in legal road crossings) • Operation that contributes visible dust pollution that extends across property lines into other areas	Marana Police Department	• Marana Town Code Chapter 12-4-2
City of Tucson	• Within ¼ mile of a structure while driving off of the roadway	Tucson Police Department	• Tucson Code Section 11-70.1

Jurisdiction	Prohibited use of OHVs	Enforcement	Code/Ordinance/Rule*
	• A roadway includes any private driveway or property used by the owner or one with permission of the owner for any purpose other than entry into a wash		
Arizona	• No use off of existing roads, designated routes, and trails	Arizona State Land Department Arizona Game and Fish Department	• Arizona Revised Statutes, Title 28, Article 20 Off-Highway Vehicles
U.S. Forest Service	• See relevant Motor Vehicle Use Maps by Forest District • No use in wilderness or other special designated areas	Coronado National Forest, U.S. Forest Service	• Title 36, Chapter II, Part 261 & Part 212 (Code of Federal Regulations)

Bureau of Land Management	• See relevant area's Resource Management Plan
	  ○ Consult with local BLM field office
	  ○ Areas are designated as open, limited, or closed
	• No use in wilderness or other special designated areas
		Tucson Field Office, U.S. Bureau of Land Management	• Title 43, Subtitle B, Chapter II, Subchapter H, Part 8340 (Code of Federal Regulations)

*All OHV users must follow AZ state laws and display a valid OHV decal to operate on public and state trust lands in Arizona.

Appendix B: Potential risk to Covered species or their habitats due to OHV activity as it relates to a MSCP changed circumstance

Table B-1. Summary of potential risk to MSCP-covered species or their habitats that OHV activity represents across Pima County lands. Low, medium, or high vulnerability bins are based on how widespread or common covered species may be and/or the sensitivity of covered species habitat elements. Bins are approximations only, and are meant to provide context for any assessments of whether a changed circumstance may have occurred, due to OHV-related impacts only.

Covered species	Habitat elements potentially impacted by OHV activity	Hypothetical vulnerability to changed circumstance trigger by OHV activity
Talussnails species • Widespread, but some species have restricted distribution	Talus slopes and rocky outcrops	low
Sonoran desert tortoise • Widespread in suitable habitat • Potential for localized impacts from OHV disturbance	Rocky slopes and washes	low
Pima pineapple cactus • Widespread across multiple County ranches and properties	Areas of known occurrences in desert-grassland and desert-scrub	medium
Needle-spine pineapple cactus • Widespread on County ranches and properties on E. side of Catalinas and near Vail	Areas of known occurrences in desert-scrub and desert-grassland	low
Tumamoc globeberry • Likely more widespread than currently known on County lands in and near Tucson Mountain Park, Avra and Altar Valleys	Areas of known occurrences in lower elevation desert-scrub	low-medium
Huachuca water umbel • No known wild populations on County lands	Any confirmed natural or translocated occurrence in riparian habitat	medium
Cactus ferruginous pygmy owl • Limited distribution on County lands; vulnerable to nesting disturbance	Large saguaros and mature xeric riparian vegetation in desert washes (Altar Valley)	medium-high

Covered species	Habitat elements potentially impacted by OHV activity	Hypothetical vulnerability to changed circumstance trigger by OHV activity
Swainson's hawk • No known nesting sites on County lands • Any nest sites would be vulnerable to OHV disturbance	Any confirmed nest sites/territories in desert grassland or desert-scrub	medium
Western burrowing owl • Nesting or roosting burrows vulnerable to OHV disturbance • No recently observed nest burrows on County lands	Any confirmed nesting or roosting burrows in open, desert grassland or desert-scrub, especially in Altar/Avra Valleys	medium
Rufous-winged sparrow, AZ Bell's vireo, Abert's towhee • Widespread across many County ranches and properties	Riparian vegetation (xeric- to meso-riparian) or desert-scrub (rufous-winged sparrow)	low
Aquatic and riparian species (frogs, fish, birds, reptiles)* • Key species may inhabit small, limited, or otherwise vulnerable sites	Streams, springs, ponds, mesic riparian vegetation	medium-high
Bats • Key roosts for some species vulnerable to disturbance • Agave and saguaro nectar resources may be vulnerable to disturbance • Riparian woodland integrity and structure potentially vulnerable to disturbance	Roosts, agave and saguaro nectar sources, riparian woodland vegetation	low-medium
Mesquite mouse • Widespread in suitable habitat on County lands • Species determination may be challenging	Xeric riparian woodlands, especially mesquite bosques	low

Covered species	Habitat elements potentially impacted by OHV activity	Hypothetical vulnerability to changed circumstance trigger by OHV activity
Groundsnake and Tucson shovel-nosed snake • Likely more widespread than currently known in upland properties (groundsnake) • Populations in lower elevation areas in the Avra Valley likely more vulnerable (groundsnake) • No known occurrences on County lands (Tucson shovel-nosed snake)	Any confirmed populations of Tucson shovel-nosed snake (Avra Valley) Groundsnake populations in the Avra Valley Groundsnake populations in upland properties like Tortolita MP, A7 Ranch, etc.)	high high low

*Here birds include southwestern willow flycatcher and western yellow-billed cuckoo; reptiles include desert box turtle, giant-spotted whiptail, and northern Mexican gartersnake.