United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Arizona State Office
One North Central Avenue, Suite 800
Phoenix, Arizona 85004-4427
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EMS TRANSMISSION 10/22/2015
Instruction Memorandum No. AZ-2016-004
Expires: 9/30/2019

To: District Managers and Field Managers

From: State Director

Subject: Desert Tortoise Conservation Agreement Implementation

Purpose: The purpose of this Instruction Memorandum (IM) is to articulate management policy for the Sonoran desert tortoise (*Gopherus morafkai*) and its habitat on public lands managed by the Bureau of Land Management (BLM) in Arizona, in a consistent manner between the District and Field Offices. In June 2015, the BLM-Arizona entered into a *Candidate Conservation Agreement* (CCA) *for the Sonoran Desert Tortoise in Arizona* (Attachment 1). This CCA includes conservation and reporting commitments, which the BLM has agreed to, in order to ensure the conservation of the Sonoran desert tortoise on Federal lands in Arizona (Attachment 2). The conservation measures are included in, and/or are in conformance with, all Resource Management Plans (RMPs) in the State, as well as Manual Section 6840, Special Status Species Management.

Because the Mohave desert tortoise (*Gopherus agassizii*) is listed as a threatened species in the Arizona Strip District and in the Colorado River District, west of the Colorado River, the requirements of Section 7 of the Endangered Species Act (ESA) invoke policies specific to listed species. The attached conservation measures may, nonetheless, be useful for those District and Field Offices managing the Mohave desert tortoise.

Policy/Action: This document reiterates BLM policy and intent to conserve the Sonoran desert tortoise and its habitats in Arizona so that its listing as a threatened or endangered species is not warranted, to coordinate BLM conservation efforts with the signatory agency partners to the CCA through the Arizona Interagency Desert Tortoise Team (AIDTT), and to document the implementation of BLM conservation efforts and to share that documentation with AIDTT partners.

Field Managers will ensure that the conservation measures contained in the CCA are implemented, documented, and shared (reported) annually with our signatory partners through the AIDTT and keep District Managers informed of implementation progress. A SharePoint site will be created and all Field Office Wildlife Biologists will be given access to upload documentation of conservation measure implementation. The Arizona State Office will consolidate uploaded data into one report to the AIDTT. Documentation of conservation measure implementation can be uploaded at any time, but must be completed for each fiscal year by January 1, annually.

The Sonoran desert tortoise and its habitat south and east of the Colorado River will be conserved and managed as described in Manual Section 6840 and consistent with the CCA conservation commitments. Mitigation for the Sonoran desert tortoise will follow the guidance provided in IM No. AZ-2012-031 (*Desert Tortoise Mitigation Policy*) or subsequent revised guidance.

Timeframe: This IM is effective immediately.

Budget Impact: None. The conservation commitments in the CCA are included in, and/or are in conformance with, all RMPs in the State.

Background: In 1988, the strategic plan, *Desert Tortoise Habitat Management on Public Lands: A Rangewide Plan*, was signed by the BLM Director. In 1989, the Mohave population of the desert tortoise (that portion of the known distribution north and west of the Colorado River) was emergency listed as endangered under the ESA. In 1990, after a review of the conservation status, its status was changed and it was listed as a threatened species. That same year, the U.S. Fish and Wildlife Service (USFWS) issued a "12-Month Finding" that the Sonoran population of the desert tortoise did not warrant listing at that time. In October 1990, the BLM Arizona State Director issued the *Strategy for Desert Tortoise Habitat Management on Public Lands in Arizona* (IM AZ-91-16). Since that time, the Sonoran desert tortoise has been managed as a BLM-sensitive species, and all RMPs developed have included conservation measures for the Sonoran desert tortoise. Additionally, numerous policy guidance documents were issued to maintain or improve the conservation status of the species.

In 2008, WildEarth Guardians and Western Watersheds Project petitioned the USFWS to list the Sonoran population of the desert tortoise as threatened or endangered. In 2010, the USFWS concluded that listing the Sonoran population of the desert tortoise was warranted, but precluded and it was placed on the list of Candidate Species. In 2011, the Sonoran population of the desert tortoise was formally described as a distinct species, the Sonoran desert tortoise (*Gopherus morafkai*). As a result of a litigation settlement agreement, the USFWS conducted a species status assessment and on October 6, 2015, published a Proposed Rule (Federal Register Vol. 80, No. 193, Pages 60321-60335) which determined that listing the Sonoran desert tortoise as threatened or endangered was not warranted at this time, and the species was removed from the list of Candidate Species. The determination that listing was "not warranted at this time" was

due in part to conservation commitments made by the BLM and other signatory agency partners to the CCA.

Directives Affected: Special Status Species Management, Manual Section 6840.

Coordination: None.

Contact: For additional information concerning this guidance, please contact Tim Hughes, Endangered Species Coordinator, at 602-417-9356, or email thughes@blm.gov.

SIGNED BY:
Deborah K. Rawhouser
for Raymond Suazo

AUTHENTICATED BY:
Susan Williams
Staff Assistant

2 Attachments:
1 - Final Sonoran Desert Tortoise CCA (133 pp)
2 - SDT Conservation Implementation Reporting (5 pp)

CANDIDATE CONSERVATION AGREEMENT FOR THE SONORAN DESERT TORTOISE (*GOPHERUS MORAFKAI*) IN ARIZONA

Between the

U.S. Fish and Wildlife Service
and
Cooperating Agencies comprising
the
Arizona Interagency Desert Tortoise Team

May 27, 2015

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ACRONYMS

AIDTT	Arizona Interagency Desert Tortoise Team
ARS	Arizona Revised Statutes
ADOT	Arizona Department of Transportation
AGFD	Arizona Game and Fish Department
ASLD	Arizona State Land Department
AZARNG	Arizona Army National Guard
BANWR	Buenos Aires National Wildlife Refuge
BLM	Bureau of Land Management
BMGR	Barry M. Goldwater Range
BMP	Best Management Practice
BWRNWR	Bill Williams River National Wildlife Refuge
CBP	Customs and Border Protection
CCA	Candidate Conservation Agreement
CCAA	Candidate Conservation Agreement with Assurances
CFR	Code of Federal Regulations
CNF	Coronado National Forest
CPNWR	Cabeza Prieta National Wildlife Refuge
DOD	U.S. Department of Defense
ESA	Endangered Species Act of 1973 (as amended)
FMR	Florence Military Reservation
FOIA	Freedom of Information Act
FS	Forest Service
FWCA	Fish and Wildlife Coordination Act of 1974
INRMP	Integrated Natural Resource Management Plan
LAFB	Luke Air Force Base
LTMP	Long-term monitoring plot
MCAS	Marine Corps Air Station Yuma
MOU	Memorandum of Understanding
NEPA	National Environmental Policy Act
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NWR	National Wildlife Refuge
OPCNM	Organ Pipe Cactus National Monument
ORV	Off-road vehicle
PECE	Policy for Evaluation of Conservation Efforts
PNF	Prescott National Forest
SDT	Sonoran desert tortoise
SNP	Saguaro National Park
SSA	Species Status Assessment
TNF	Tonto National Forest
URTD	Upper Respiratory Tract Disease
USC	U.S. Code
USFWS	United States Fish and Wildlife Service
YPG	Yuma Proving Ground

DEFINITIONS

Arizona Interagency Desert Tortoise Team

Formal team of biologists and resource managers representing various land/resource management agencies that provide a collaborative approach to the conservation of the Sonoran population of the desert tortoise in Arizona and that will assume responsibility over the ongoing implementation of the Sonoran Desert Tortoise Candidate Conservation Agreement.

CCA Parties

Signatories to the Candidate Conservation Agreement that are providing commitments to implement conservation actions for Sonoran desert tortoise in Arizona.

Enhancement of Survival Permit (Permit)

Permits issued by the USFWS under section 10 of the ESA used to promote endangered species conservation on non-federal lands in conjunction with Safe Harbor Agreements and Candidate Conservation Agreements with Assurances. The enhancement permit and Agreements allow landowners to improve habitat for candidate or listed species without incurring additional restrictions if the size of the area occupied by the species increases or the species number increases.

1. Introduction and Purpose

In 1989 the Mohave population of the desert tortoise (*Gopherus agassizii*) (that portion of the known distribution north and west of the Colorado River) was emergency listed as 'endangered' under the Endangered Species Act (ESA) of 1973, as amended (USFWS 1989). Based on the best data available and a review of conservation actions having been implemented up to that time, its status was changed to 'threatened' in 1990 (USFWS 1990). In the following year, the US Fish and Wildlife Service (USFWS) issued a 12-Month Finding that stated the Sonoran population of the desert tortoise (i.e., those populations south and east of the Colorado River) did not warrant listing, citing both a lack of evidence for pandemic disease, and existence of disjunct populations that should limit the spread of disease (USFWS 1991). Because there are ecological differences between Mohave and Sonoran populations, disturbance to habitat was thought to be less severe to the Sonoran population, and evidence of healthy populations in Mexico also contributed to the 1991 USFWS Finding.

The Arizona Interagency Desert Tortoise Team (AIDTT) was formed in 1985, and formalized planning efforts in 1995. This team was assembled to engage the various land/resource management agencies to provide a cooperative and collaborative planning approach to conservation of the Sonoran population of the desert tortoise. AIDTT cooperation is intended to: (1) ensure the perpetuation of the species and (2) prevent loss and improve quality of habitat in Arizona. The AIDTT is also open to participation by other federal, state, or tribal agencies interested in the conservation of the desert tortoise in Arizona. AIDTT completed a management plan for the Sonoran population of the desert tortoise in 1996 (AIDTT 1996). In 2000, an AIDTT status report concluded that tortoise populations in Arizona's Sonoran Desert were stable, but warned of many threats on the horizon (AIDTT 2000). A standardized monitoring plot protocol was developed in 2000 (Averill-Murray 2000).

In 2002, Forest Guardians (now known as WildEarth Guardians) petitioned numerous agencies for Sonoran desert tortoise-related data under the Freedom of Information Act (FOIA). The basis for their request was to evaluate the data and to develop a petition to list the Sonoran population of desert tortoises under the ESA. In response to the 2002 FOIA request, the AIDTT revisited the 1996 management plan and monitoring protocol and collectively agreed that it 1) lacked meaningful goals and objectives, 2) lacked political willpower in the absence of legal protection for the Sonoran population, 3) failed to designate Sonoran Desert Management Areas (as required in the plan), and 4) was poorly funded which hampered implementation of threat minimization activities outlined in the plan. Based on this evaluation, the AIDTT began development of a State Conservation Agreement (SCA) designed to provide an enforceable management strategy for desert tortoises in Arizona aimed at conserving existing populations of the Sonoran desert tortoise and to be considered in the decision of whether or not to list the species under the ESA in the future. In 2008, WildEarth Guardians and Western Watersheds Projects petitioned the USFWS to list the Sonoran population of the desert tortoise. In 2009 USFWS issued a positive 90-day finding (Finding) that the petition presented substantial scientific information indicating that listing the Sonoran population of the desert tortoise may be warranted (USFWS 2009). The subsequent status review (Review) concluded that listing the Sonoran population of desert tortoises was warranted, and it became a Candidate (USFWS

2010). Finally, Murphy et al. (2011) formally described the Sonoran population of desert tortoises as a distinct species, Sonoran desert tortoise (SDT; *Gopherus morafkai*).

This Candidate Conservation Agreement for the Sonoran Desert Tortoise (CCA) carries forward the same conservation initiatives developed for the State Conservation Agreement among involved agencies and other participating land or resource management entities, and is intended to complement existing conservation and management plans that are designed to conserve SDT populations and habitat in Arizona. USFWS has established policy and provided guidance to facilitate development of conservation agreements for ESA candidate species. This guidance involves combining existing tools under sections 7 and 10 of the ESA to provide development and implementation of conservation efforts for candidate, at-risk species in an effort to preclude ESA listing of the species. Recognizing that it is not always possible to preclude the need to list a candidate species, the secondary goal would be to integrate processes available under ESA sections 7 and 10 so as to reduce uncertainty about potential changes in land/resources uses that might be necessary if the covered species is listed in the future. Federal agencies have special obligations for the conservation of listed species, as specified in section 7 of the ESA, and CCAs are primarily developed by federal agencies to cover species conservation on federal lands.

This CCA has been developed as a cooperative effort among federal and state agencies to provide effective conservation of this candidate species in Arizona. Agencies and other entities electing to participate in this CCA will be referred to as "Parties" to the agreement and will be viewed as cooperating members of the AIDTT. The purpose of this CCA is to collectively identify practical conservation measures and provide a comprehensive mechanism for implementing proactive SDT conservation measures across its range in Arizona. With this CCA, the Parties (identified in Section 3) intend to organize a cooperative, range-wide approach to SDT management and conservation that will be considered in the Species Status Assessment (SSA) being developed to inform the pending listing decision. This CCA will further allow the Parties to leverage knowledge and funding within a comprehensive, statewide conservation framework in Arizona that can also be extended to potential non-federal landowner partners. The SDT CCA is voluntary and flexible in nature, and has been developed to identify and direct effective conservation and management actions among the Parties throughout the species' range in Arizona.

This CCA is an example of a cooperative conservation approach. The terms of this CCA shall be governed by and construed in accordance with applicable federal and state law. Nothing in this CCA is intended to limit the authority of the USFWS to fulfill its responsibilities under federal laws. Additionally, nothing in this CCA is intended to supersede or limit applicable state agency authorities. All activities undertaken pursuant to this CCA are intended to be in compliance with all applicable state and federal laws and regulations. Consistent with the specific commitments by, and the available resources of, the Parties, conservation actions set forth in this CCA will be implemented and will remain in effect for the duration of the CCA.

2. CCA Goals and Objectives

The goals and objectives of this CCA fall into the following main categories:

1. Range-wide conservation and management of the SDT by assessing and directing lasting conservation measures in Arizona. The CCA is designed to provide a comprehensive

conservation framework for deploying effective SDT conservation and management actions, such that:

a. SDT populations and habitats are more effectively identified, inventoried and conserved through time;

b. The Parties can develop and implement conservation measures aimed at maintaining or enhancing SDT habitat and populations; and,

c. The ability of the Parties to monitor the response of the species to conservation and management actions is enhanced as a result of the cooperative/comprehensive framework provided through the CCA.

2. Initiate and facilitate ongoing cooperation and collaboration among the various agencies and entities that can potentially serve a productive role in species conservation. The CCA is designed to encourage, facilitate and direct effective tortoise conservation actions across multiple agencies and entities having the potential to directly influence species conservation in Arizona. Parties to the CCA intend to identify existing tortoise conservation measures and efforts, while sharing conservation expertise and information across a broad range of organizations. This also allows for an organized conservation approach that encourages coordinated actions and uniform reporting, integrates monitoring and research efforts with management, and supports ongoing conservation partnership formation.

3. Provide an administrative and conservation framework for incorporating the participation of non-federal landowners into the statewide conservation construct for SDT over the long-run. This CCA is designed to more immediately facilitate a cooperative conservation effort among identified state and federal agencies, but is also developed in a manner to accommodate the development of an associated Candidate Conservation Agreement with Assurances (CCAA) that provides the required regulatory means for involving willing non-federal landowners in SDT conservation in Arizona.

The Parties to this CCA are confident that by striving for and achieving these goals and objectives that the SDT and its distribution of populations and habitat can be conserved in Arizona, and that accompanying threats to the species will be effectively reduced and mitigated across its Arizona range. These conservation measures will be considered in any future determinations relating to the Candidate-species status of SDT and any decisions to list the tortoise under the ESA. Accordingly, the Parties involved in the implementation of the CCA seek to preclude the necessity of having to list the SDT in the foreseeable future. In the event that the SDT is listed under the ESA, this CCA can be used as a model for recovery planning and consultations through section 7 of the ESA.

This document is designed to meet USFWS requirements of Candidate Conservation Agreements (CCAs) by providing land/resource management participants in Arizona a mechanism to voluntarily commit to implement specific actions designed to remove or reduce threats to a Candidate species in an effort to preclude listing of the species. As specified in the USFWS Policy for the Evaluation of Conservation Efforts (PECE) (USFWS 2003), these

conservation measures/criteria are designed to ensure the certainty that the conservation efforts will be implemented and that when implemented, the conservation efforts will be effective. To ensure compliance with PECE in making species listing decisions, USFWS cooperators contributed extensively during the development of the CCA and associated conservation plans by serving on the AIDTT.

3. Parties to the CCA

3.1 Arizona Interagency Desert Tortoise Team Composition

This CCA has been developed as a collaborative and cooperative effort among land and resource management agencies to facilitate implementation of conservation measures for the SDT in Arizona. The AIDTT is an interagency team assembled, initially in 1985, to engage the various land/resource management agencies to provide a comprehensive and collaborative planning approach to SDT conservation. The AIDTT is open to participation by other federal, state, tribal or county agencies interested in advancing the conservation of SDT in Arizona. The following subsections outline the various agencies that comprise the AIDTT and are Parties to this CCA.

3.2 Participating Federal Agencies

- Bureau of Land Management
  - Arizona State Office
- Bureau of Reclamation (Phoenix, AZ)
- Fish and Wildlife Service
  - Arizona Ecological Services Office
  - Bill Williams River National Wildlife Refuge
  - Buenos Aires National Wildlife Refuge
  - Cabeza Prieta National Wildlife Refuge
  - Havasu National Wildlife Refuge
  - Imperial National Wildlife Refuge
  - Kofa National Wildlife Refuge
- National Park Service
  - Organ Pipe Cactus National Monument
  - Saguaro National Park
- Department of Defense
  - Air Force, Luke Air Force Base
  - National Guard Bureau, Arizona Army National Guard
  - Army, Yuma Proving Ground
  - Marine Corps, Marine Corps Air Station Yuma
- Customs and Border Protection
- Forest Service
  - Coronado National Forest
  - Prescott National Forest
  - Southwestern Regional Office (Albuquerque, NM)
  - Tonto National Forest (Cave Creek and Mesa Districts)
- Natural Resources Conservation Service

3.3 Participating State Agencies

- Arizona Department of Transportation
- Arizona Game and Fish Department

4. Role of Non-Federal Landowners

To meet the goals and objectives of this CCA, the Parties acknowledge and recognize that SDT occupy habitat on federal and non-federal lands. Significant conservation opportunities exist on these intermingled lands across the range in Arizona, and the overall status and trend of SDT populations and habitat will benefit from contributions by non-federal landowners. Accordingly, the Parties have identified the opportunity for non-federal landowners to expand conservation beyond this CCA through development of an accompanying CCAA framework. The CCAA framework extends necessary regulatory assurances to participating non-federal landowners that if they engage in certain conservation actions for the species covered by CCAA, no additional resource use restrictions or conservation measures on non-federal lands will be required by the USFWS beyond those in the CCAA without their consent. This approach provides a consistent management framework for non-Federal landowners to voluntarily participate in tortoise conservation across its range in Arizona.

The CCAA program is an aspect of the USFWS's implementation of the ESA that is intended to facilitate proactive conservation of candidate species, and species that may become candidates, by giving non-federal property owners incentives to implement conservation measures for declining or at-risk species. Under a CCAA framework involving non-federal landowners in SDT conservation, AGFD will work with USFWS and non-federal landowners to ensure implementation of appropriate conservation measures and actions that address threats to the species relevant to those properties being enrolled into the CCAA. Please see Section 6.4 for details on CCAA expansion.

5. CCA Party Authorities

The Parties enter into this CCA under authority provided by Federal and State law. Nothing in this CCA is intended to limit the authority of the USFWS to fulfill its responsibilities under Federal laws. Nothing in this CCA is to imply that any Party is in any way abrogating or ceding any responsibility or authority inherent in its sovereign ownership of, jurisdiction over, and control of its property interests or wildlife. All activities undertaken pursuant to this CCA must be in compliance with all applicable state and federal laws and regulations. The signatory parties hereto enter into this CCA under federal and state laws as applicable, including but not limited to, section 6(c)(1) of the ESA of 1973, as amended and Arizona Revised Statutes (ARS) 17-231.B-7. This CCA is subject to and is intended to be consistent with all applicable federal and state laws and international compacts.

5.1 Federal Agencies

5.1.1 Bureau of Land Management

No specific authority is needed for the BLM to re-state its existing commitments to SDT conservation measures by entering into this CAA, while those commitments are themselves authorized by various provisions of the Federal Land Policy and Management Act of

1976 (FLPMA; 43 U.S.C. 1701, *et al.*) and applicable implementing regulations. Relevant FLPMA provisions must include the Declaration of Policy in Section 102, the Land Use Planning requirements in Section 202, and the management directives contained in Section 302. Entering into this CAA also is consistent with applicable provisions of the Resource Management Plans referenced at 9.2.1. and various policy statements, including BLM Manuals 1786 (Memorandums of Understanding) and 6840 (Special Status Species Management).

Notably, BLM Manual 6840 establishes specific procedures for managing the SDT as a BLM sensitive species, which BLM has done since 1988, with the goal of conserving the SDT and its habitat on BLM-managed lands in cooperation with other agencies.

5.1.2 Bureau of Reclamation

The ESA of 1973 (ESA; 16 U.S.C. 1531) and the USFWS Coordination Act of 1974 (FWCA; 16 USC 661-666c) provide direction to protect all species of wildlife, endangered and threatened species, resources thereof, and their habitat. Pursuant to the FWCA, the Secretary of the Interior may enter into cooperative agreements to provide assistance to, and cooperate with, federal, state, and public or private agencies and organizations.

Within the Reclamation Manual (RCD P03, RCD 03-01) the conservation of fish, wildlife, and their habitat fall under the NEPA (ENV P03), the ESA (ENV P04), and Environmental Mitigation policy (ENV P07). The Environmental Mitigation policy directs implementation and completion of all mitigation requirements and commitments included in Clean Water Act permits, Finding of No Significant Impact or Record of Decision, Biological Opinions, Resource Management Plans, or other environmental mitigation compliance requirements.

5.1.3 Fish and Wildlife Service

Sections 2, 7, and 10 of the ESA, as amended, allow the USFWS to enter into this CCA. Section 2 of the ESA states that encouraging interested parties, through federal financial assistance and a system of incentives, to develop and maintain conservation programs is a key to safeguarding the Nation's heritage in fish, wildlife, and plants. Section 7(a)(1) of the ESA requires the USFWS to review programs that it administers and to utilize such programs in furtherance of the purposes of the ESA. By entering into this CCA, the USFWS is using its Candidate Conservation Programs to further the conservation of the Nation's fish and wildlife. In the event that a CCAA is developed for SDT, and accompanying regulatory assurances and incidental take provisions are extended to participating non-federal landowners, section 10(a)(1)(A) of the ESA further authorizes the issuance of permits to "enhance the survival" of a listed species.

The ESA recognizes the State's authority to manage resident wildlife and that implementation of the ESA through the cooperative conservation programs between state fish and wildlife agencies and the USFWS is essential:

> *Sec. 2.(a) FINDINGS. (5) encouraging the States and other interested parties, through Federal financial assistance and a system of incentives, to develop and maintain conservation programs which meet national and international standards is a key to meeting the Nations international commitments and to better safeguarding, for the benefit of all citizens, the Nation's heritage in fish, wildlife, and plants.*

In development of the ESA, Congress realized it was critical that the Secretary of the Interior cooperate to the maximum extent possible with the States in order to effectively implement the provisions and intent of the ESA. Section 6(c)(1) of the ESA provides encouragement to the State and other interested parties, through federal financial assistance and a system of incentives, to develop and maintain conservation programs that meet national and international standards. Section 6(c)(1) of the ESA is key to meeting the United States' international commitments and to better safeguard, for the benefit of all citizens, the Nation's heritage in wildlife and plants. Section 6 of the ESA provides the authority for the Secretary to enter into cooperative agreements with the States which establish and maintain an adequate and active program for the conservation of endangered and threatened species:

> *Sec. 6.(a) GENERAL. In carrying out the program authorized by this Act, the Secretary shall cooperate to the maximum extent practicable with the States.*
>
> *Sec. 6.(c). COOPERATIVE AGREEMENTS. In furtherance of the purposes of this Act, the Secretary is authorized to enter into a cooperative agreement in accordance with this section with any State which establishes and maintains an adequate and active program for the conservation of endangered species and threatened species…he shall enter into a cooperative agreement with the State for the purpose of assisting in implementation of the State program.*

In addition to the ESA, the Fish and Wildlife Act of 1956 provides that the Secretary shall "...take such steps as may be required for the development, advancement, management, conservation, and protection of fish and wildlife resources..." The Fish and Wildlife Coordination Act states that the Secretary is authorized "to provide assistance to, and cooperate with, Federal, State, and public or private agencies and organizations in the development, protection, rearing, and stocking of all species of wildlife, resources thereof, and their habitat..." Lastly, the Sikes Act requires Department of Defense (DOD) installations to develop an Integrated Natural Resource Management Plan (INRMP) to support the military mission in cooperation with USFWS and state fish and wildlife agencies.

Perhaps the largest driving force behind the USFWS's authority to conserve wildlife and habitat is the National Wildlife Refuge System and the laws and regulations that established and manage this system. Refuges are special places where the USFWS and its partners restore, protect, and manage habitat for America's wildlife. In addition, The National Wildlife Refuge System Improvement Act of 1997 requires the USFWS to maintain the ecological health, diversity, and integrity of refuges, and the Wilderness Act of 1964 also provides guidance on the management of applicable National Wildlife Refuges lands.

5.1.4 National Park Service

The National Park Service (NPS) was established by an act of Congress passed in 1916 generally referred to as "The Organic Act" (16 USC I). Congress created the NPS to care for national parks and monuments with the directive that "[t]he service thus established shall promote and regulate the use of the [parks] hereinafter specified by such means and measures as conform to the fundamental purpose of the said parks . . . which purpose is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same

in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."

Section 4.1.4 of NPS Management Policies encourages parks to pursue opportunities to improve natural resource management within parks and across administrative boundaries by cooperating with public agencies and interested parties. The NPS recognizes that cooperation with other resources and land managers can accomplish ecosystem stability and other resource management objectives when the best efforts of a single manager might fail. Therefore, parks will develop agreements with federal, tribal, state and local governments and organizations, and private landowners, when appropriate, to coordinate plant, animal, water and other natural resource management activities in ways that maintain and protect, not compromise, park resources and values. Such cooperation may involve coordinating management activities in two or more separate areas, integrating management practices to reduce conflicts, coordinating research, sharing data and expertise, exchanging native biological resources for species management or ecosystem restoration purposes, establishing native wildlife corridors, and providing essential habitat adjacent to, or across, park boundaries (NPS 2001 Management Policies, 4.1.4).

NPS Management Policies for Biological Resources (NPS 2006 Management Policies 4.4.1) provide similar guidance for NPS to cooperate with states, tribal governments, the USFWS, NOAA Fisheries, and other countries, as appropriate, to participate in local and regional scientific and planning efforts, identify ranges of populations of native plants and animals, and develop cooperative strategies for maintaining or restoring these populations in the parks. Policy 4.4.2 (*Management of Native Plants and Animals*) further directs NPS to consult, as appropriate, with other Federal land-management agencies, the USFWS, the NOAA Fisheries, state wildlife management agencies, other appropriate state agencies, tribal governments, and others. Such consultation will address (1) the management of selected animal populations, (2) research involving the taking of animal species of interest to these agencies, and (3) cooperative studies and plans dealing with the public hunting and fishing of animal populations that occur across park boundaries. Applicable policy subsections provide the following guidance to NPS in managing native and endangered species.

Authority to enter into cooperative agreements is found in the National Parks Omnibus Management Act of 1998, the Organic Act of 1916, as amended, and the ESA of 1973, as amended.

A variety of other federal laws and/or agency policies and guidelines provide additional mechanisms for NPS to pursue effective conservation of natural resources, which are referenced below:

- Wilderness Act of 1964
- National Park System Resource Protection Act (1990)
- Department of Interior Departmental Manual, Section 505 – "Using Procurement Contracts, Grant Agreements and Cooperative Agreements"
- National Park System Management Policies, 2006 (http://www.nps.gov/policy/mp/policies.html)
- National Park System Reference Manual 75 (http://www.nature.nps.gov/nps75/nps75.pdf) – Natural Resource Inventory and Monitoring

- National Park System Reference Manual 77 (http://www.nature.nps.gov/rm77/) – Natural Resource Management
- NPS Director's Order 12 - Conservation Planning, Environmental Impact Analysis, and Decision-Making (http://www.nps.gov/policy/DOrders/DO-12.pdf)
- NPS Directors Order 20 - Agreements (http://www.nps.gov/policy/DOrders/DOrder20.html) - The *NPS Agreements Handbook*, supplements Director's Order 20, and provides detailed guidance to all who have a role in the development, administration, and closeout of agreements such as cooperative agreements, interagency acquisition agreements, and other types of agreements.

Saguaro National Park (SNP) and Organ Pipe Cactus National Monument (OPCNM) are the two NPS lands in Arizona that support SDT habitat. Saguaro National Monument was established by Presidential Proclamation 2032, in 1933; enlarged by Presidential Proclamation 3439 in 1966, Public Law 94-578 in 1976, and Public Law 102-61 in 1991; and enlarged and designated a national park by Public Law 103-364 in 1994, due to its "outstanding scientific interest…exceptional growth... of various species of cacti, including the so-called giant cactus, …remarkable display of relatively undisturbed lower Sonoran Desert vegetation,… diversity of desert vegetation,… outstanding riparian corridor,… important archeological and historic sites,… important habitat for the desert tortoise, Gila monster, javelina and other species of reptiles, mammals, and birds." OPCNM was established by Presidential Proclamation 2232 in 1937 to preserve approximately 330,689 acres of Sonoran Desert for the public interest. In 1978, 312,600 acres of the monument was designated as wilderness by Congress.

5.1.5 Department of Defense

The Sikes Act, 16 United States Code (U.S.C.) §§ 670a-670o, requires the Secretary of Defense to prepare and implement an INRMP for the conservation and rehabilitation of significant natural resources on military installations. These plans reflect mutual agreement between the USFWS and the head of each appropriate state fish and wildlife agency concerning conservation, protection, and management of fish and wildlife resources. DOD may enter into cooperative agreements with states, local governments, organizations and individuals to provide for the maintenance and improvement of natural resources on, or to benefit natural and historic research on, DOD installations.

An INRMP is a comprehensive plan used to manage installation natural resources by providing and ensuring the sustained use of a landscape necessary to support the military mission in accordance with accepted stewardship principles. It replaces the need for separate management plans for particular natural resources (for example, endangered species management, forest management, wetlands management, and fish and wildlife management). The INRMP describes how natural resources will be managed for military mission needs and in compliance with applicable laws and regulations. It ensures that management of natural resources does not result in a "net loss" of mission training land and describes how ecosystems will be managed to create and maintain certain landscape characteristics needed to enhance military training opportunities.

Department of Defense Instruction 4715.03, *Natural Resource Conservation Program*, (2011) provides guidance to the Services for the integrated management of natural resources on property under DOD control. It also states that natural resources under the stewardship and control of the

DOD shall be managed to support and be consistent with the military mission, while protecting and enhancing those resources for multiple use, sustainable yield, maintenance of ecosystem services and biological conservation. Enclosure 3, Section 3a(3) of this document encourages the evaluation and engagement of local and regional partnerships beneficial in meeting the goals and objectives of the INRMP. DOD Manual 4714.03 dated 25 November 2013 further provides procedures to prepare, review, update, and implement INRMPs in compliance with sections 670-670o of the Sikes Act. Additionally, Section 2684(a) of Title 10 U.S.C., known as the buffering authority, authorizes the Services to enter into partnerships with private conservation organizations or state and local governments to preserve land and prevent incompatible development around military installations. A MOU between DOD, USFWS and the Association of Fish and Wildlife Agencies "For a Cooperative Integrated Natural Resource Management Program on Military Installations" (DOD 2013) furthers a cooperative relationship between the U.S. DOD and USFWS, and state fish and wildlife agencies acting through the Association of Fish and Wildlife Agencies in preparing, reviewing, revising, updating and implementing INRMPs for military installations.

Air Force

The primary objective of Air Force (AF) natural resources programs is to sustain, restore and modernize natural infrastructure to ensure operational capability and no net loss in the capability of AF lands to support the military mission of the installation. AF Instruction 32-7064 *Integrated Natural Resources Management* addresses the management of natural resources on AF properties to comply with federal, state and local standards. This instruction provides Major Commands and installations a framework for documenting and maintaining AF natural resources management programs. It also provides guidance for the developing and implementing an INRMP, the primary tool for managing military installation natural resources.

Army

Sections of Department of the Army Regulation (AR) 200-1, *Environmental Protection and Enhancement,* set forth policy, procedures, and responsibilities for the conservation, management, and restoration of land and natural resources consistent with the military mission and in consonance with national policies. In fulfilling their conservation responsibilities, paragraph 4-3d(5)(v) authorizes installations to participate in regional/habitat-wide efforts to conserve candidate species and Army-designated species at risk (SAR). Paragraph 4-3d(6) provides authority for managing SAR and their habitats. Specific SAR guidance is found in *Army Species at Risk Policy and Implementing Guidance*, dated 15 September 2006. An update to this list completed in June 2011, identifies the SDT as a priority Army species at risk. The SAR policy encourages proactive management efforts for SAR and their habitats, before Federal protection under the ESA is necessitated, and further encourages installations to capitalize on partnerships and agreements when managing for such species.

The DOD buffering authority mentioned above is implemented by the Department of the Army with the Army Compatible Use Buffer (ACUB) Program. Installations with approved ACUB plans have authority to work with partners to protect and restore habitat outside the installation if those activities are deemed beneficial to sustaining the installation's military mission. Installations with pending or approved ACUB plans within the geographic extent of this CCA include Fort Huachuca.

The Army's execution of this authority is through cooperative agreements and subject to DOD 3210.6-R, the DOD Grant and Agreement Regulation. Such agreements are for the purposes of limiting incompatible development near installations, as well as preserving habitat that is compatible with environmental requirements and that may eliminate or relieve environmental restrictions that would restrict, impede the military mission of the installation. The *Interim Army Implementation Guidance for Encroachment Authorities* memorandum dated 24 February 2012 establishes an encroachment management framework and enables the Army to address encroachment issues.

Marine Corps

The U.S. Marine Corps manages military lands maintaining land, air, and water resources to sustain realistic military training and testing. Marine Corps environmental programs preserve training areas, enhance operational readiness, protect public health, and preserve the environmental quality of the installation and adjacent communities. Failure to achieve environmental compliance and protect natural resources may compromise the mission by limiting Marine Corps access to areas necessary to sustain military readiness.

Marine Corps Order P5090.2A W/CH 1-3 is the primary manual which implements the substantive requirements of DOD environmental policy, outlines the requirements for compliance with Federal environmental regulations, and establishes Marine Corps policy for funding, evaluating, and continually improving environmental compliance and protection programs. The manual covers programs relative to land, fish and wildlife, and resource-based outdoor recreation management. In addition, it outlines the preparation and implementation of the INRMP, the planning document that directs the management and conservation of natural resources under Marine Corps control. MCO P5090.2A W/CH 1-3 applies to all Marine Corps active and Reserve installations, Commands, detachments, components, and is communicated to all military and civilian employees and supporting contractors.

5.1.6 Customs and Border Protection

U.S. Customs and Border Protection (CBP), pursuant to various authorizing statutes, including the Homeland Security Act of 2002, Pub. L. 107-296, codified at 6 U.S.C. Parts 101 *et seq*., and other Acts amendatory thereof and supplementary thereto, is statutorily mandated to control and guard the borders and boundaries of the United States, including the Nation's southwest border, through the enforcement of customs, immigration, and agriculture laws and regulations, while at the same time facilitating legitimate trade and travel. In carrying out its primary mission, CBP promotes the conservation of natural resources and protects and enhances the quality of the environment, to include carrying out programs for the conservation of threatened, endangered, or candidate species such as the SDT, pursuant to a variety of federal laws, regulations, and agency-specific policies, including the ESA, NEPA, Executive Order 11514 – Protection and Enhancement of Environmental Quality, and Department of Homeland Security Directive 023-01 – Environmental Planning Program.

5.1.7 Forest Service

Under the National Forest Management Act (NFMA, 16 U.S.C. §§ 1600-1614) and U.S.D.A. Forest Service policy the Forest Service (FS) is directed to "manage habitats for all existing

native and desired nonnative plants, fish, and wildlife species in order to maintain at least viable populations of such species" and to "avoid actions which may cause a species to become threatened or endangered" (Forest Service Manual [FSM] 2670.12, 2670.22). The Regional Forester may designate species as Sensitive as described in the FSM 2670. The objectives of management for such species are to ensure their continued viability throughout their range on National Forest lands, and to ensure that they do not become threatened or endangered because of FS actions. The SDT is designated Sensitive on the Regional Forester's Sensitive list.

5.1.8 Natural Resources Conservation Service

The Soil Conservation Act of 1935 provides the basic authority for programs of the Natural Resources Conservation Service (NRCS), formerly the Soil Conservation Service. This act declares that it is the policy of Congress to control and prevent soil erosion and thereby preserve the natural resources on farm, grazing, and forest lands of the Nation. The Act further authorizes the NRCS to carry out conservation measures on the land and to assist land users in conducting conservation activities (Public Law 46, 74th Congress). The NRCS works with private landowners through conservation planning and assistance designed to benefit the soil, water, air, plants, and animals that result in productive lands and healthy ecosystems. The NRCS's conservation programs help people reduce soil erosion, enhance water supplies, improve water quality, increase wildlife habitat, and reduce damages caused by floods and other natural disasters. Public benefits include enhanced natural resources that help sustain agricultural productivity and environmental quality while supporting continued economic development, recreation, and scenic beauty.

5.2 State Agencies

5.2.1 Arizona Department of Transportation

ADOT is responsible for planning, building, operating and maintaining a complex transportation system that includes construction of new infrastructure as well as reconstruction and maintenance of existing highways, bridges, and drainage features. ADOT is also responsible for the Grand Canyon Airport. ADOT maintains thousands of acres of right-of-way throughout Arizona, including easements and right-of-way across lands managed by federal agencies and other state agencies. Many of these lands contain and/or are adjacent to suitable habitat for the SDT. In accordance with the NEPA and the ESA, ADOT identifies suitable habitat, conducts surveys, assesses impacts, and coordinates mitigation efforts for the SDT on these lands. ADOT also coordinates with the Arizona Game and Fish Department (AGFD) regarding strategies and conservation actions to protect the SDT per AGFD's State Wildlife Action Plan (SWAP) (AGFD 2012a). ADOT enters into this CCA pursuant to Arizona Revised Statutes §28-332, §28-334, §28-401 and other relevant Arizona law.

5.2.2 Arizona Game and Fish Department

An important component to AGFD's mission, as detailed in AGFD's Strategic Plan (AGFD 2012b) Nongame Wildlife Program narrative, is to manage rare species to maintain biological diversity and to maintain and restore native species diversity, population numbers and habitats. Additional documents such as SWAP (AGFD 2012a) further support these species conservation objectives. The activities described in this CCA are consistent with the objectives outlined in

those documents, and will be supported to the extent practicable by the AGFD. ARS 17-231.B.7 authorizes the Arizona Game and Fish Commission to enter into this CCA through its administrative agency, the AGFD.

AGFD's authority for managing ESA-listed species resides in Arizona Revised Statute (ARS) Title (17), Section 6 of the ESA, a cooperative agreement between the USFWS and AGFD granting AGFD full authorities under Section 6 of the ESA, and a Memorandum of Understanding (MOU) with Region 2 of the USFWS. The purpose of the MOU is to facilitate joint participation, communication, coordination, and collaboration between the USFWS and AGFD regarding the implementation of the ESA. Through the MOU, AGFD and USFWS share the responsibilities of Candidate, Threatened, and Endangered Species management as is relevant to the ESA.

6. CCA Management and Administration

In order to meet the objectives of this CCA, the Arizona Interagency Desert Tortoise Team (AIDTT) will manage, administer, and periodically review the implementation of species conservation outlined in this CCA. The responsibility of this team is to coordinate the implementation and administration of the CCA without superseding the jurisdictional authorities of any party. In addition, the AIDTT will develop and make recommendations for the conservation and research needs of the SDT to improve management/conservation effectiveness, and identify any additional threats to the species.

6.1 Arizona Interagency Desert Tortoise Team Organization

The AIDTT was formalized through an MOU in 1995, and serves as the primary channel for interagency coordination on SDT management and research activities in Arizona. The existing MOU for the AIDTT will be revised and updated to reflect new Parties to the CCA. The AIDTT will consist of one or more designated representatives from each Party to this CCA and may include technical and legal advisors and other members as deemed necessary. The AIDTT will be co-chaired by AGFD and USFWS. The AIDTT's organizational structure is outlined below in Figure 6.1 and will be updated as needed.

The Parties to this CCA shall designate a representative to serve on the AIDTT. Designated representatives or their alternates shall attend a minimum of two meetings of the AIDTT annually for the life of this CCA to review progress, coordinate management, and prioritize conservation actions. The AIDTT shall coordinate the implementation of the CCA and provide a forum for exchange of information. The AIDTT shall in no way make recommendations to or serve as an advisory group to any federal agency.

6.2 CCA Implementation and Management

The AIDTT is responsible for coordination of the conservation activities and monitoring of the conservation actions being conducted by the Parties to encourage all actions to be in accordance with the CCA. The AIDTT will develop an annual assessment of the Parties' progress towards implementing the conservation actions described in this CCA. This assessment will comprise an annual report and recommendations for CCA revisions and actions. The annual report will be

based on input provided to the AIDTT by the Parties. The AIDTT will devise a standardized reporting format for the Parties to use when providing input. Following the annual assessment, the AIDTT will publish an announcement that details the progress made to date on implementation of conservation actions described in the CCA. The AIDTT will develop a mechanism to share information on SDT conservation research, information, AIDTT meetings, and reports that is accessible to the CCA Parties. This repository will include items such as SDT research, habitat management strategies, population densities, resources, and outreach materials.

Parties to this CCA recognize that they have specific statutory responsibilities that cannot be delegated, particularly with respect to the management and conservation of wildlife. Nothing in this CCA is intended to abrogate any of the Parties' respective responsibilities.

Figure 6.1. Arizona Interagency Desert Tortoise Team's Organizational Structure

6.3 Education and Outreach

The AIDTT will assess the need to develop and/or distribute outreach materials to promote SDT conservation. Parties that develop new outreach materials related to the SDT and/or its habitat will share the materials with other AIDTT members. The AIDTT will coordinate the development and dispersal of public education and outreach materials. Outreach materials include, but are not limited to, pamphlets, newsletter articles and announcements, fact sheets, and

other educational materials. In addition, the AIDTT will reach out to and utilize partnering organizations such as Partners in Amphibian and Reptile Conservation (PARC) for support.

Each Party to this CCA will post SDT information and/or links to other appropriate sites on their own websites if applicable.

6.4 CCAA Expansion

CCAs are primarily developed for federal agencies to cover species conservation on federal lands. Federal agencies have special obligations for the conservation of listed species, as specified in section 7 of the ESA. To provide an incentive for voluntary conservation of species-at-risk on non-federal lands, USFWS adopted a policy and regulations in 1999 for Candidate Conservation Agreements with Assurances (CCAAs) under the authority of section 10 of the ESA. Under the provisions of section 10 and related regulations for CCAAs, USFWS will issue an enhancement of survival permit to property owners who commit to a CCAA, which becomes effective if the species is listed under the ESA in the future. Permit issuance criteria and conditions are provided at 50 CFR 17.22(d)(2) and (3), respectively, and the permit includes assurances that no additional resource use restrictions or conservation measures on non-Federal lands will be required by the USFWS beyond those agreed upon in the CCAA (see 50 CFR 17.22(d)(5) for the specific text of assurances). The permit also authorizes a prescribed amount of incidental take of the covered species that may result from the participant's actions covered by the CCAA. Implementation of the stated CCAA's conservation measures should produce a level of benefit that could preclude or remove any need to list the covered species, assuming that conservation measures are also implemented on other properties necessary for the conservation of the species.

The primary goal of this CCA for the SDT is to guide implementation of conservation measures and efforts that will make SDT listing under the ESA unnecessary. The CCA is intended to facilitate a comprehensive agreement among the Parties to direct meaningful conservation for SDT, which includes measures that address threats existing on both federal and non-federal lands. Any associated CCAA involving non-federal landowners would be programmatic in nature (available to multiple non-federal landowners across the species range) and would include direct participation of USFWS and the AGFD. Under a CCAA framework involving non-federal landowners, AGFD and USFWS will work with other AIDTT members and participating non-Federal landowners to ensure implementation of appropriate conservation measures and actions that address threats to the species relevant to those properties being enrolled into a programmatic CCAA.

Accordingly, this CCA is structured such that any subset of the CCA covering activities of non-federal property owners on non-federal lands will satisfy the standard for a CCAA. AIDTT will provide the necessary administrative and management oversight over the deployment of this CCA, which serves to identify and guide conservation actions across various land ownerships in Arizona. Identified members of AIDTT will encourage and lead the development of a programmatic CCAA with participating non-federal landowners, and will also provide administrative and management over the accompanying CCAA (including Enhancement of Survival Permit administration).

7. Background and Current Status of Sonoran Desert Tortoise

The following is a summary of information regarding natural history, habitat, distribution and current status on SDT in Arizona. For a detailed description on background, current status of SDT, and complete literature cited, please refer to the 2013 Candidate Notice of Review (CNOR) (USFWS 2013) and SSA report (USFWS *in prep*). This section will be updated with new or additional information as it becomes available.

7.1 Description and Natural History

Description

The SDT is a member of the Class Reptilia, Order Testudines, and Family Testudinidae, and is one of five North American tortoise species (Genus Gopherus). SDT is a moderately-sized terrestrial turtle, averaging 20-38 centimeters in length. The species is identified by its stocky and elephantine hind feet, and flattened shovel-like forelimbs adapted for digging. The carapace (top shell) is dome-shaped, usually brownish in color marked with a prominent growth lines. The plastron (bottom shell) is tan to yellowish and is not hinged. Male SDTs are differentiated from females by having elongated gular (throat) shields, and a concave plastron.

NATURAL HISTORY

The SDT is slow to reach sexual maturity, has low fecundity, and a long life span. Females reach sexual maturity at approximately 26 years of age, and reproductive activity is highly influenced by winter and spring precipitation. The breeding season is generally July through October. Females store sperm, and one summer's matings produce the next summer's clutches of eggs. Females excavate nests, often inside soil shelters, from early June to July, and only one clutch is produced annually. Clutch size is usually 1 to 12 eggs, with an average of 5. Eggs hatch in September and October, and some hatchlings may overwinter in nests. Predation on nests and hatchlings is high in some populations.

As adults, SDTs are relatively protected from natural predation because of their size and hard shells. Mountain lions (*Felis concolor*) appear to be the primary natural predator with the jaw strength required to puncture or crack the shells of adult tortoises. The complex habitat structure of Arizona Upland Sonoran Desert limits birds' ability to detect tortoises, and there are likely very low rates of avian predation. Gila monsters (*Heloderma suspectum*) are a primary predator on tortoise eggs, coachwhips (*Coluber* (=Masticophis) *flagellum*) and gophersnakes (*Pituophis catenifer*) have been reported to consume juvenile tortoises.

SDTs feed primarily on herbs, grasses, woody plants, and succulents, and are known to eat 199 species of plants. In addition, SDTs are highly attracted to sites with calcium carbonate-rich soils and have been observed congregating at these sites year after year eating these soils presumably to supplement dietary mineral needs.

Home range size varies with precipitation levels, contracting during wet years and expanding during dry years in response to the availability of forage plants, habitat type, and season, and depending on the sex of the tortoise. Annual average home ranges for males have varied from 9.2 to 25.8 ha. Females generally have smaller home ranges, with averages ranging from 2.6 to 23.3 ha. SDTs exhibit high fidelity to their home ranges, with the exception of dispersal movements to new areas. SDTs often use a group of relatively closely located shelters as focal areas of

activity in their home range. Location and dimension of shelters varies by habitat type, season, sex, and size class.

The SDT is diurnal, but may emerge at night in response to rainfall. Peak activity is late June through September; however SDTs may be surface-active every month of the year. In the winter dormancy period, surface activity is in response to thermoregulatory needs, movements between shelters, or to rehydrate during or after rainfall.

7.2 Habitat

The SDT occurs primarily on rocky slopes and bajadas of Mohave desertscrub and Arizona Upland and Lower Colorado River Valley subdivisions of Sonoran desertscrub. They most often occur in paloverde-mixed cacti associations, but have been documented in semi-desert grassland, interior chaparral, oak woodland, ponderosa pine-dominated coniferous forests, and thorn-scrub habitats.

Population densities and movements are correlated with available or potential shelter sites. Tortoises escape temperature extremes by retreating to their shelters, which stay cooler in summer and warmer in winter than outside temperatures. Most often, SDTs excavate burrows in loose soils at the base of boulders and rock outcrops. Natural rock cavities, caliche caves in incised cut banks of washes, and packrat middens are also used for shelter-sites. Tortoises occasionally dig soil shelters on more or less open slopes or under vegetation, or may rest directly under live or dead vegetation without constructing a shelter. Shelter-sites are rarely found in shallow soils.

7.3 Distribution in Arizona

The SDT occupies portions of western, northwestern, and southern Arizona in the United States, and the Mexican State of Sonora, south to approximately the Rio Sonora (Figure 7.3). Arizona represents the largest portion of the total range of this species. Distribution is influenced by habitat and climatic characteristics (vegetation), soil and substrate characteristics (for shelter), and precipitation pattern (for water availability).The CCA will be implemented on approximately 13,000 square miles, approximately 54%, of the Sonoran desert tortoise habitat in Arizona (Table 7.3; USFWS in prep).

Table 7.3. Landownership with the distribution of the Sonoran desert tortoise. Data compiled by the Branch of Technical Support, USFWS, Albuquerque, NM, May 2015.

Landowner	Habitat Suitability Rank			Total Sq. Miles	Percentage of Total
	High	Medium	Low		
Federal	5642	5513	1874	13,029	54%
State	1212	2078	506	3,796	16%
Local	175	74	2	251	1%
Private	659	1712	457	2,828	12%
Private Conservation	2	1	0	3	0%
Tribal	935	3096	257	4,288	18%
			Total Sq. Miles	24,195	

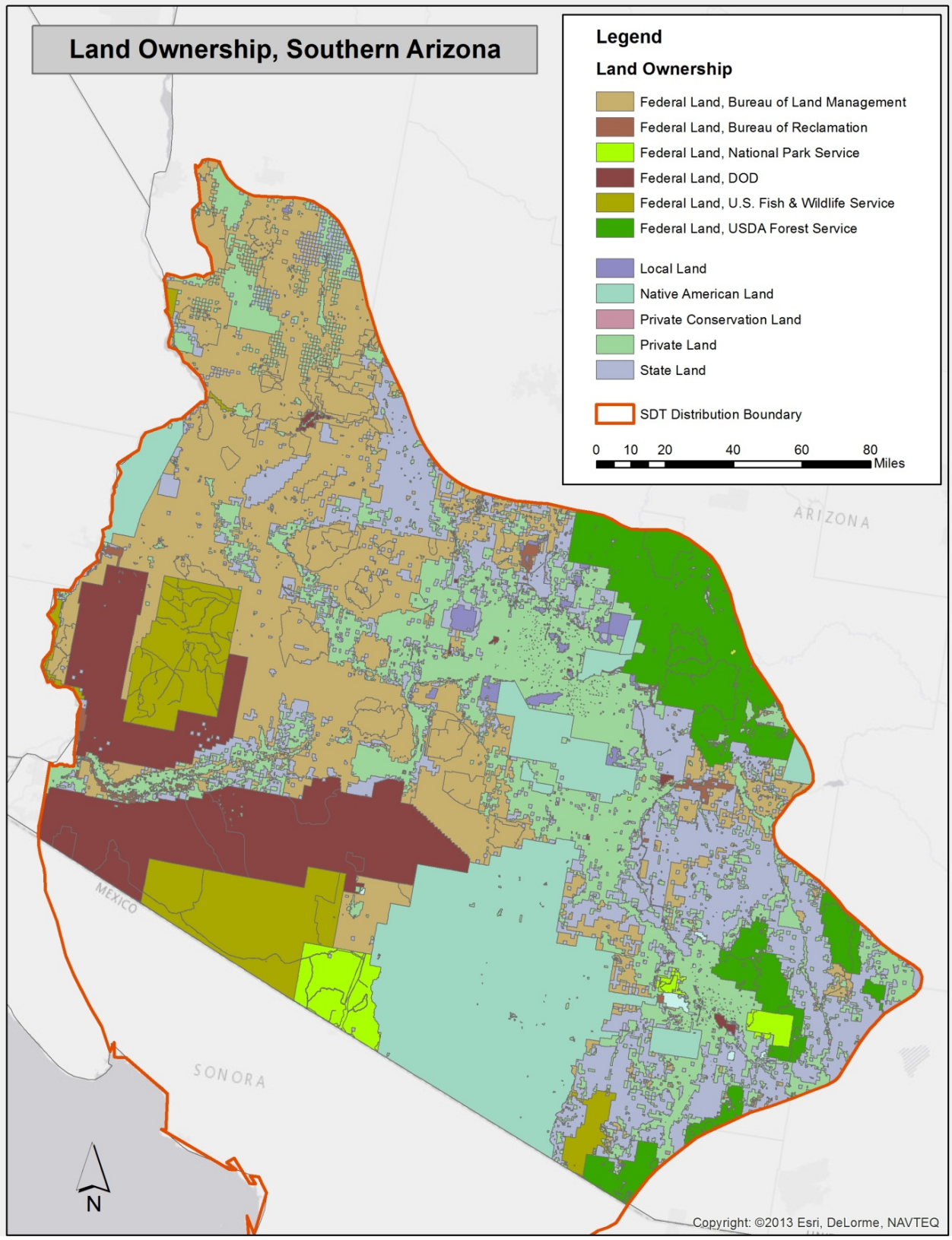

Figure 7.3. Current distribution of the Sonoran desert tortoise. Data compiled by the Branch of Technical Support, USFWS, Albuquerque, NM, February 25, 2015.

7.4 Species Status

Population Estimates

A long-term monitoring program started in Arizona in 1987, resulting in establishment of 25 long-term monitoring plots (LTMPs). Fifteen of these plots were surveyed regularly from 1987-2008, and the resulting dataset contains 77 survey-years of capture-recapture data from 1,186 unique tortoises across the species' range in Arizona. Annual survival estimates for adult SDTs on these 15 LTMPs averaged 92% (range 87-97%). Annual survival varied across the range from 85 to 95% when additional long-term monitoring site data were included. Annual juvenile survival varied from 70 to 89% across the State, although survival might have been overestimated due to a limited sample of small juveniles (<70mm midline carapace length).

Another analysis using capture-recapture data from 16 LTMPs from 1987-2008, indicated most populations are stable, with a rate of change >1 across 62% of their range in Arizona, but the rate varied geographically between 0.95 and 1.04. Probability of extirpation analyses found that even small SDT populations (<100 individuals) may persist for 100 years or more across most of the state. All results indicated that populations are more vulnerable to extirpation in northwestern Arizona.

Lincoln-Peterson estimates and an increase in carcasses at 4 LTMPs suggested periodic, localized, and in one case, substantial population declines. There are no records of extirpations of SDTs from any of the monitored populations.

Status

The ESA requires the USFWS to identify wildlife and plant species that may become Endangered or Threatened, based on the best available scientific and commercial information. As part of this responsibility, the USFWS maintains a list of species that are being considered for listing. The SDT was established as a Candidate for listing in December 2010 by USFWS, and a final decision is required by the end of federal fiscal year 2015 according to terms in the USFWS's Multi-District Litigation settlement.

NEPA (42 U.S.C. 4321 et seq.) requires Federal agencies to consider the environmental impacts of their actions. Most actions taken by the USFS, BLM, and other federal agencies that affect SDT and other Candidate or ESA-listed species are subject to NEPA. NEPA requires federal agencies to describe the proposed action, consider alternatives, identify and disclose potential environmental impacts of each alternative, and involve the public in the decision-making process. However, federal agencies are not required to select the alternative having the least significant environmental impacts. A federal action agency may select an action that will adversely affect sensitive species provided that these effects were known and identified in a NEPA document. Bureau of Land Management has designated the SDT as a "Bureau sensitive" species for purposes of planning and directing management activities on BLM lands in Arizona. SDT has also been established as a Category 1 species at risk by DOD, a priority 2 Army species at risk, and Regional Forester Sensitive status for planning and analysis purposes for the FS.

The SDT is identified as a Tier 1A Species of Greatest Conservation Need (SGCN) in Arizona's SWAP (AGFD 2012). Tier 1A includes, in part, those species that are closed season (as identified by Arizona Game and Fish Commission Order), currently listed under the ESA as

endangered or threatened, including those populations considered essential or nonessential experimental under section 10(j) of the ESA, or are candidates for listing. The purpose of the SWAP is to inform development of annual work plans, to inform strategic planning at all levels within the AGFD, and to inform conservation strategies of external partners. Additional benefits include providing a foundation for directing wildlife conservation within a collaborative framework that engages state/federal agencies and other conservation partners to think strategically about individual and coordinated roles in prioritizing conservation efforts (AGFD 2012a). Tier 1A species also represent those species requiring conservation actions aimed at improving conditions through intervention at the population or habitat level.

8.0 Threats Affecting the Sonoran Desert Tortoise

SDTs in Arizona are generally stable range-wide. In the 2013 CNOR (USFWS 2013) the following potential threats to SDT were listed: invasive nonnative plant establishment and altered fire regimes, urban and agricultural development, and factors associated with human population growth which collectively and cumulatively affect core tortoise population areas and create barriers to dispersal and genetic exchange. For a detailed description of stressors and potential threats, please refer to the 12-Month Finding (USFWS 2010) and SSA report (USFWS *in prep.*).

It is important to note that threats vary geographically throughout the range of SDT, and the specific threats potentially impacting a geographic area will be evaluated separately. Using the USFWS five-factor analysis as a guide to evaluate a species for listing under the ESA, the threats summarized below are those currently observed in occupied SDT habitat and/or are likely to occur in the future. The five factors are as follows: A) the present or threatened destruction, modification, or curtailment of its habitat or range; B) overutilization for the commercial, recreational, scientific, or educational purposes; C) disease or predation; D) the inadequacy of existing protection; and E) other natural or manmade factors affecting its continued existence (50 CFR part 424). Please refer to the Species Status Assessment for a comprehensive discussion of the potential threats and stressors facing SDT.

As previously noted in Section IV, the overarching conservation goal of the SDT CCA is to achieve conservation that is needed to preclude listing of SDT through reduction or amelioration of threats in Arizona. The success of any conservation or recovery effort depends on reducing or eliminating threats to the continued existence of the species. The following summarizes the five listing factors identified in section 4(a)(1) of the ESA which must be considered by the USFWS in evaluating current threats to the SDT.

The involved parties in the CCA will implement actions to reduce or eliminate current threats. The primary needs for short-term conservation and long-term maintenance of viable populations and functional processes of the SDT have been identified based on the existing information found in the Stressor/Conservation Measure Matrix (Appendix A). As a better understanding of threats to the SDT and its conservation needs are developed, the management strategy for the tortoise will be revised through an adaptive management process.

The success of any conservation or recovery effort depends on reducing or eliminating threats to the continued existence of the species. The following summarizes the five listing factors

identified in section 4(a)(1) of the ESA which must be considered by the USFWS in evaluating current threats to the SDT.

8.1 Present or Threatened Destruction, Modification or Curtailment of the Species' Habitat or Range

The primary threats to SDT in Arizona are habitat destruction, fragmentation, and degradation. Causes of these threats include, but are not limited to: invasive nonnative plant establishment, an altered fire regime, urbanization and development, human-constructed barriers to movement, off-road vehicle use, and livestock grazing. Because there is little overlap in the habitat shared by livestock and SDT in most areas in Arizona, and because livestock grazing in Arizona is actively managed by land management agencies, livestock grazing is not currently thought to affect populations in Arizona. Most SDT habitat is on Federal and State lands, rendering threats to habitat quality an important issue for federal and state land managers and therefore is the focus of this agreement.

Refer to Stressor/Conservation Measure Matrix (Appendix A) for the conservation measures and threat reduction strategy under this CCA.

8.2 Overutilization for Commercial, Recreational, Scientific or Educational Purposes

This factor has little to no impact on SDT. A majority of SDT habitat is in remote rugged terrain with little to no direct recreational use. Research suggests that a very small percentage of motorists in Arizona who detect a SDT will attempt to collect it, and existing Arizona regulations prohibit the direct take of individuals without a permit. Furthermore, captive SDT are available through AGFD's tortoise adoption program. Also, the potential negative effects of a member of the public handling a wild tortoise to move it out of harm's way from a highway or other roadway are far less detrimental than a vehicle strike. Finally, established AGFD handling protocols minimize potential risks to individual tortoises by researchers conducting field work. Overall, overutilization of SDT is not thought to be detrimental to the species.

Refer to Stressor/Conservation Measure Matrix (Appendix A) for the conservation measures and threat reduction strategy under this CCA.

8.3 Predation or Disease

This factor, which includes potential predation by ravens and feral or off-leash dogs, as well as human predation and vandalism, and upper respiratory tract disease (URTD) and shell disease has little to no negative impacts on SDT populations. While ravens occur throughout tortoise habitat, no predation on SDTs has been documented in Arizona. While URTD has been documented in wild and captive populations, no fatalities have been linked to this disease, and it does not appear to be a threat to Arizona SDTs. Additionally, no SDTs have been documented to have succumbed to Cutaneous Dyskeratosis even though it has documented in virtually all SDT LTMPs in Arizona. Overall, predation and disease of SDT is not thought to impact the species.

Refer to Stressor/Conservation Measure Matrix (Appendix A) for the conservation measures and threat reduction strategy under this CCA.

8.4 Inadequacy of Existing Regulatory Mechanisms

The existing regulatory mechanisms of all Parties have been determined to be adequate and sufficient to reduce threat and protect the SDT on each Party's respective land in Arizona. Below is a summary of the existing regulatory mechanisms for all Parties; these are also incorporated into the Stressor/Conservation Measure Matrix (Appendix A).

Bureau of Land Management (BLM)

Directed by FLPMA, the BLM manages public lands for multiple use and sustained yield and in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use. Regulations governing allowable uses of the public lands are described in 43 CFR, Subtitle B, Chapter II.

The SDT is designated as a BLM Sensitive Species and is managed according to BLM Manual Section 6840 (2008), Special Status Species Management. The 6840 Manual directs BLM to implement measures to conserve the SDT and its habitat, to promote their conservation and reduce the likelihood and need to be listed as threatened or endangered by managing the SDT and its habitat to minimize or eliminate threats affecting the status of the species or to improve the condition of its habitat.

To implement these regulations and policies, through the land use planning process BLM has incorporated SDT conservation as a priority in resource allocations, setting resource objectives and prescribing management. SDT conservation is a priority when evaluating discretionary activities to determine consistency with multiple use and sustained yield goals and resource objectives.

BLM has adequate regulatory authority and the mechanisms in place to address potential threats to the SDT and its habitat on public lands.

Bureau of Reclamation (Reclamation)

Protection for the SDT conforms to the ESA and the FWCA of 1974. The FWCA directs Federal agencies such as Reclamation "to provide assistance to, and cooperate with, federal, state, and public or private agencies and organizations in the development, protection, rearing, and stocking of all species of wildlife, resources thereof, and their habitat, in controlling losses of the same from disease or other causes." Section 2 (5)(c)(1) of the ESA also directs all federal agencies to conserve endangered and threatened species and to utilize their authority in furtherance of the purposes of the ESA.

Reclamation does not manage an agency sensitive species list, but instead works cooperatively with the USFWS, BLM, AGFD, and other entities to conserve fish and wildlife and their habitat. At times that cooperation is a result of Reclamation projects located on private, local, state,

tribal, and other federal lands. Within Arizona some federal lands have been withdrawn from the public domain under BLM administration and made available to Reclamation for authorized project purposes. Withdrawn lands remain managed by the BLM under an agreement signed in 1978. Reclamation activities on those withdrawn lands would be subject to BLM policy concerning Special Status Species Management, as well as the ESA and FWCA.

Fish and Wildlife Service (USFWS)

The National Wildlife Refuge System is the only federally-administered system of lands managed primarily for the conservation of fish, wildlife, and plant resources. The Refuge System mission was clarified and formalized in October 1997, by passage of the National Wildlife Refuge System Improvement Act (P.L. 105-57). This Act ensures that the Refuge System is effectively managed as a national system of lands, waters, and interests for the protection and conservation of our nation's wildlife resources.

One of the main components of the National Wildlife System Improvement Act is the requirement to maintain the biological integrity, diversity, and environmental health of the Refuge System. More specifically, the Fish and Wildlife Service Manual (601 FW) states a primary goal of the Refuge System is to preserve, restore, and enhance in their natural ecosystems (when practicable) all species of animals and plants that are endangered or threatened with becoming endangered.

In addition to the preceding, the following regulation is aimed at conserving refuge wildlife resources:

- Collecting, possessing, molesting, disturbing, injuring, destroying, removing, or transporting any plant or animal or part thereof (alive or dead) is prohibited, except for legally taken game.

National Park Service (NPS)

U.S. Congress legislation created the NPS to care for national parks and monuments with the directive that "[t]he service thus established shall promote and regulate the use of the [parks] hereinafter specified by such means and measures as conform to the fundamental purpose of the said parks . . . which purpose is to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations." NPS regulations that govern resource protection and public use and recreation on NPS lands are generally described in CFR 36. The following outline summarizes CFR 36 (Chapter I, Part 2) regulations applicable to all NPS lands that provide general protection to NPS wildlife resources:

§2.2 Wildlife protection - The regulations contained in this section apply, regardless of land ownership, on all lands and waters within a park area that are under the legislative jurisdiction of the United States.

1. The taking of wildlife is prohibited, except by authorized hunting and trapping activities conducted in accordance with … hunting that is allowed in park areas where such activity is specifically mandated by federal statutory law if the Superintendent determines that such activity is consistent with public safety, enjoyment and sound resource management principles. Such hunting shall be allowed pursuant to special regulations.

2. The feeding, touching, teasing, frightening or intentional disturbing of wildlife nesting, breeding or other activities is prohibited.
3. Possessing unlawfully taken wildlife or portions thereof is prohibited.
4. Trapping shall be allowed in park areas where such activity is specifically mandated by Federal statutory law. Where hunting or trapping or both are authorized, such activities shall be conducted in accordance with federal law and the laws of the state within whose exterior boundaries a park area or a portion thereof is located. Non-conflicting state laws are adopted as a part of these regulations.
5. The Superintendent may:
    a. Establish conditions and procedures for transporting lawfully taken wildlife through the park area. Violation of these conditions and procedures is prohibited.
    b. Designate all or portions of a park area as closed to the viewing of wildlife with an artificial light. Use of an artificial light for purposes of viewing wildlife in closed areas is prohibited.

Air Force, Luke Air Force Base (LAFB)

The Military Lands Withdrawal Act of 1999 (MLWA), which renewed the 1.7 million acres Barry M. Goldwater Range (BMGR), assigned natural resource management responsibilities to the Secretaries of the Air Force and Navy for the BMGR East and West, respectively. This authority was subsequently delegated to the installation commander at Luke AFB, where the 56th Range Management Office is responsible for executing the program. The Air Force and Marine Corps, in partnership with the Department of the Interior and AGFD, prepared an INRMP for the BMGR in 2007 in accordance with the MLWA, the Sikes Act (16 U.S. Code [U.S.C.] 670a *et seq*.), NEPA, and other applicable laws. The 2007 INRMP was updated in 2012 in accordance with the five-year review cycle as provided by the Sikes Act and MLWA.

The INRMP is the principal tool for managing military installation natural resources. The purpose of the INRMP is to provide an integrated comprehensive plan for managing the natural resources of the BMGR and for managing sustainable public use of the those resources to the extent that such management and use is consistent with the military purposes of the range. Further, management prescribed by the INRMP benefits threatened and endangered species on the BMGR consistent with the federal and state recovery actions for these species under the ESA.

Army

The Sikes Act and Army Regulation 200-1 direct the U.S. Army installations to manage Army lands in a manner which sustains the military mission on the installation while maintaining the ecological health of natural resources. In accordance with Army Regulation 200-1, *Environmental Protection and Enhancement*, INRMPs support the Army mission through stewardship of Army lands and are the primary tool for managing species and their habitats at Army installations. Garrison commanders utilize INRMPs for the conservation, rehabilitation, and enhancement of natural resources to ensure readiness. The Army Species At Risk Policy and Implementing Guidance Memorandum, dated 15 September 2006, and updated list dated June 2011, identifies the SDT as a high priority Species at Risk (SAR). The Army's SAR policy encourages proactive management efforts for SAR and their habitats, before federal protection under the ESA is necessitated, and further encourages installations to capitalize on partnerships

and agreements when managing for such species. The Army has programmed funds for the management of key species at risk.

At all applicable installations, the Army follows the regulations set forth in AR 200-1 in managing SDT as a SAR. These regulations specifically call for the following management actions:

A) Manage species at risk and habitats to prevent listing that could affect military readiness.
B) Program and plan for environmental conservation critical funding for designated Army species at risk.
C) Incorporate species at risk management in the INRMP.
D) Implement management plans for species at risk to include, but not limited to, survey, monitoring, habitat enhancement, and protection.

Marine Corps Air Station, Yuma, AZ (MCAS)

Natural resource management responsibilities for the BMGR West and East, were assigned to the Secretaries of the Navy and Air Force, respectively, through the Military Lands Withdrawal Act of 1999 (MLWA). The authority was subsequently delegated to the installation commander at Marine Corps Air Station and is executed through the Conservation Program of the Range Management Office.

The Marine Corps and Air Force, in partnership with the DOI and AGFD, prepared an INRMP for the BMGR in 2007 in accordance with the MLWA, the Sikes Act, NEPA, and other applicable laws. The 2007 INRMP was updated in 2012 in accordance with the five-year review cycle as provided by the Sikes Act and MLWA. The INRMP is the principal tool for managing military installation natural resources. The purpose of the INRMP is to provide an integrated comprehensive plan for managing the natural resources of the BMGR and for managing sustainable public use of the those resources to the extent that such management and use is consistent with the military purposes of the range. Further, management prescribed by the INRMP benefits threatened and endangered species on the BMGR consistent with the Federal and State recovery actions for these species under the ESA.

Additionally, natural resources, fish and wildlife to include species at risk, and outdoor recreation on BMGR West are managed in accordance with MCO P5090.2A W/CH 1-3. Natural resources protection measures are incorporated into MCAS Yuma Station Order 3710.6J (Range and Training Areas Standard Operating Procedures) and other documents.

Customs and Border Protection

CBP is not a land or resource management agency and, accordingly, does not direct a regulatory framework specifically aimed at conserving wildlife or wildlife habitats. In carrying out its primary mission, however, CBP cooperates with USFWS, BLM, NPS and other signatories to this CCA to ensure that, to the extent practicable, CBP advances the goal of conservation and, where possible, minimizes or avoids impacts to threatened, endangered, candidate, sensitive or special status species and their habitats.

Forest Service

Under 36 CFR §219 subpart A and §241, the FS is directed to develop and implement a Land Management Plan (LMP). The development of LMPs requires cooperation with the Fish and Game Department or other constituted authority of the State concerned, with special consideration given to rare and/or sensitive species. Therefore, conservation measures for a given species, such as the SDT, will often be in the form of a plan component(s).

Forest Service Manual (FSM) 2670 provides specific direction and guidance for managing rare species on national forests, and allows the Regional Forester to designate species as Sensitive (FSM 2670.22, 2670.32). The SDT is designated Sensitive on the Southwestern Regional Forester's list. The authority to develop the concept of partnerships and enter into specific agreements is outlined in FSM 1580 (1580.1). Regional Foresters, Station Directors, and the Area Director are designated as signatory officials for cooperative agreements, and other FSM 1580 agreements for programs under their jurisdiction (FSM 1580.41d).

Natural Resources Conservation Service (NRCS)

All NRCS conservation programs are voluntary and offer technical assistance and may offer financial incentives for implementing conservation systems.

NRCS is neither a regulatory nor a land management agency, and its role in farm and range management issues is largely advisory at the invitation of individual clients. Technical advice and planning alone do not constitute a federal nexus, as the NRCS has no control over the conservation plan and the client is the decision maker for the conservation plan. However, beginning with the 2002 Farm Bill, clients can now obtain financial assistance directly from NRCS to implement their conservation plan, establishing a federal nexus for the agency. Most financial assistance programs consist of a term contract between a client and the NRCS where the client agrees to install and maintain a suite of conservation practices to improve natural resource management, and receive a reimbursement of a portion of the cost as an incentive for completing each practice to NRCS standards and specifications. When the term of the contract expires, the federal nexus for NRCS also expires, as this is the end of the action authorized, funded, or carried out by NRCS. However, the contract recipient agrees to maintain the conservation practices for their expected lifespan.

Arizona Department of Transportation (ADOT)

All projects involving ADOT that are eligible for reimbursement by the Federal Highway Administration must meet the requirements of NEPA. In addition, the Arizona Division of Federal Highways Administration requires analysis of project effects on species listed as Candidates and those protected by CCAs under the ESA. Avoidance, minimization and mitigation measures are regularly enacted for these species on ADOT projects.

ADOT also complies with Arizona laws on all projects, except in cases where Arizona law is superseded by federal or tribal law. In the context of complying with applicable Arizona laws, ADOT will appropriately refer to state laws similar to those outlined in the AGFD summary of Arizona laws.

Arizona Game and Fish Department (AGFD)

Legal protections are afforded to the SDT in Arizona by state laws (i.e., Arizona Revised Statute Title 17) and regulations imposed by the Arizona Game and Fish Commission (Commission).

Unless otherwise prescribed in Title 17, it is unlawful to "[t]ake, possess, transport, buy, sell or offer or expose for sale wildlife except as expressly permitted by this title" (ARS 17–309). It is also unlawful to release wildlife into the wild except as authorized by the Commission or as defined in Title 3 (see ARS 17-306). As restricted live wildlife (R12-4-406), SDTs cannot be imported, exported, or possessed without special license or lawful exemption.

Before April 28, 1989, AGFD allowed collection and possession of one lawfully captured SDT per person. Under Commission Order 43, after that date, AGFD closed the season on SDTs and prohibited take and possession of desert tortoises from the wild, except under special permit (i.e. scientific or educational). Refer to section 5.2.2. for other state regulatory protections covering SDT. Arizona State laws providing legal protections to SDT are included in the following:

- <u>ARS Title 17 Game and Fish</u>
  - ARS Sec. 17-101- Definitions:
    A.21. *Wildlife means all wild mammals, wild birds, and the nests or eggs thereof, reptiles, amphibians, mollusks, crustaceans, and fish, including their eggs or spawn.*
  - ARS Sec. 17-306 – Importation, transportation, release or possession of live wildlife: *"No person shall import or transport into the state or sell, trade, or release within the state or have in his possession any live wildlife except as authorized by the Commission."*
  - ARS Sec. 17-331 – Licenses required to take wildlife:
    "… a person shall not take any wildlife in this state without a valid license".
  - ARS Sec. 17-454 – Prohibition against vehicle travel
    "No person shall drive a motor operated vehicle cross-country on public or private lands where such cross-country driving is prohibited by rule or regulation or, in the case of private lands, by proper posting."

- <u>ARS Title 28: Transportation</u>
  - ARS Sec. 28-1174. Operation restrictions; violation; classification:
    A person shall not drive an off-highway vehicle: 2. Off of an existing road, trail or route in a manner that causes damage to wildlife habitat, riparian areas, cultural or natural resources or property or improvements. A person shall drive an off-highway vehicle only on roads, trails, routes or areas that are opened as indicated in rules or regulations of a federal agency, this state, a county or a municipality. C. A person shall not operate an off-highway vehicle in a manner that damages the environment, including excessive pollution of air, water or land, abuse of the watershed or cultural or natural resources or impairment of plant or animal life, where it is prohibited by rule, regulation, ordinance or code.
  - ARS Sec. 28-1180. Race or organized event; authorization required:
    No person may organize, promote or hold an off-highway vehicle race or other organized event on any land or highway in this state, except as authorized by the appropriate agency that has jurisdiction over the land or highway or the landowner.

During the 2014 Commission Rule Review of Article 4, Live Wildlife, AGFD proposed changes that would restrict captive propagation of desert tortoises held lawfully. These changes to Possession of Live Wildlife Taken Under an Arizona Hunting for Fishing License (R12-4-404), Importing, Purchasing, and Transporting Live Wildlife Without an Arizona License or Permit (R12-4-405), Restricted Live Wildlife (R12-406), and Exemptions from Special License

Requirements for Restricted Live Wildlife (R12-4-407) were approved by the Commission. The proposed rule changes will undergo the Government Regulatory Review Council process once the 2015 moratorium on rulemaking is lifted. Existing Commission Rules and Orders and Department policies providing regulatory protections to SDT are as follows:

- Commission Rules
  - R12-4-402 – Live Wildlife: Prohibited Acts :

    A. A person shall not import or transport any live wildlife into the state, or possess, offer for sale, sell, sell as live bait, trade, give away, purchase, rent or lease, display for any purpose, propagate, stock, or release within the state any live wildlife, or export any live wildlife, or kill any captive wildlife, or operate a shooting preserve, except as authorized by this Chapter or as defined in A.R.S. Title 3, Chapter 16. A person may exhibit lawfully possessed wildlife only as authorized by this Chapter or as defined in A.R.S. Title 3, Chapter 16.
  - R12-4-404 – Possession of Live Wildlife Taken Under an Arizona Hunting or Fishing License:
    - *An individual may take wildlife from the wild alive under a valid Arizona hunting or fishing license only if there is a Commission Order that prescribes a live bag and possession limit for that wildlife and the individual possesses the appropriate license.*[there is no live bag and possession limit for SDTs]
    - *An individual who possesses wildlife or offspring of wildlife under this Section shall only dispose of the wildlife or its offspring by giving it as a gift, exporting it to another state or jurisdiction, or as directed in writing by the Department. An individual shall not dispose of wildlife taken as prescribed by this Section or offspring of the wildlife by selling, bartering, trading, or exporting it for commercial purposes. Exported live wildlife and its offspring shall not be sold, bartered, purchased, rented, leased, offered for sale, or used for any commercial purpose.*
    - *An individual shall not export live desert tortoises (*Gopherus agassizii*) from the state without written authorization from the Department. The Department shall only authorize an individual to export live desert tortoises to another jurisdiction where they can be legally possessed.*
    - *An individual may propagate desert tortoises possessed under R12-4-407(A)(1), and may hold offspring in captivity for 24 months from the date of hatching. An individual shall dispose of desert tortoises at the end of the 24 months by giving them as gifts or as directed in writing by the Department.*
  - R12-4-406 – Restricted Live Wildlife:

    I. Reptiles listed below are restricted live wildlife as defined in R12-4-401.

    2. The following species of the order Testudines. Common names include: turtles and tortoises;

    a. All species of the family Chelydridae. Common name: snapping turtles; and

    b. All species of the genus Gopherus. Common name: gopher tortoises, including the desert tortoise.
  - R12-4-407 – Exemptions from Special License Requirements for Restricted Live Wildlife:
    - *An individual is not required to possess a special license to lawfully possess restricted live wildlife under the following exemptions*

1. *An individual may possess, transport, or give away a desert tortoise (*Gopherus agassizii*) without a special license if that individual possessed it before April 28, 1989. An individual who possessed a desert tortoise before this date may propagate it, and hold offspring in captivity for 24 months from the date of hatching. The individual shall dispose of the offspring of desert tortoises before or at the end of the 24 months by giving them as a gift or as directed in writing by the Department.*
2. *An individual who receives a desert tortoise that is given away under this Section is also exempt from the special license requirements.*
3. *An individual shall not export a desert tortoise from this state unless authorized in writing by the Department.*

- Commission Orders (bag and possession limits)
  - Commission Order 43 – No open season and zero bag/possession limits for SDT (*Gopherus morafkai*).
- Department Operating Manual – contains AGFD policy that (among other things) establishes standards and expectations for employee conduct.
  - Prior to implementing any activity that might affect wildlife in Arizona, including biological management actions or construction, AGFD staff are required to evaluate the potential environmental effects of that action through the Project Evaluation Program Environmental Assessment Checklist process. Part of this requirement is captured in in the following:
    - Department Policy I2.2 - National Environmental Policy Act Compliance: *The Arizona Game and Fish Department will comply with the National Environmental Policy Act of 1969. This requires that every proposed Federal Aid... project be examined objectively to determine the effects it will have on the environment in accordance with NEPA in Federal Aid NEPA Guidelines. Further, the Department will comply with the objectives of NEPA on any other project or program that may have an effect on the environment. (Contact the Habitat Branch for procedures and guidelines for EAC compliance).*
  - To reduce the risk of accidental wildfire (including within SDT habitat) AGFD has implemented the following policy:
    - *D4.9 Hot works - This policy establishes minimum requirements for performing hot work activities during facility maintenance, roadway maintenance, construction activities, wildlife capture, or any other hot work activities conducted outside of a designated area.*
      - *This program is designed to prevent injury and loss of property from fire or explosion as a result of hot work in all Department activities and property.*
      - *The policy covers welding, brazing, soldering, heat treating, grinding, powder-actuated tools, torch applied roofing, hot riveting, wildlife capture with the aid of rockets, and all other similar applications producing a spark, flame, or heat.*
      - *No hot work activities will occur in a wildland area during times of "high" or "extreme" fire danger, or at any time during a Red Flag Warning/Watch without a written permit from the land management agency with jurisdictional control of the project area. In addition, no hot work activities will occur in a wildland area during times when an official fire restriction or proclamation prohibiting activities that could start a fire are in effect without written permission from the*

> *land management agency with jurisdictional control of the project area. In the case of Commission-owned properties, only the Director or his designee may provide an exemption to activities prohibited within an official proclamation.*

8.5 Other Manmade or Natural Factors Affecting the Species' Continued Existence

SDTs may be vulnerable to the effects of environmental contamination; ingestion of trash, including balloons, and substances from illegal solid waste dumps. However these threats are not currently known to be affecting populations and specific reports of affected individual tortoises are rare.

The combined effects of global and regional climate change, along with the effects of long-term drought, are unknown. While these may potentially play a role in the long-term persistence of the species, we are not able to quantify, with certainty, how the direct and indirect effects of climate change will affect SDT populations. Climate change is not currently a threat to the SDT, but it has the potential to be a threat in the foreseeable future.

Refer to Stressor/Conservation Measure Matrix (Appendix A) for the conservation measures and threat reduction strategy under this CCA.

9. Conservation Strategy and Commitments

The strategy for organizing a cooperative, range-wide approach to SDT management and conservation is focused on establishing a baseline of conservation commitments to which all CCA Parties agree, and then collectively accounting for specific agency conservation actions across the state. It also establishes an effective conservation framework for non-federal landowner involvement in tortoise conservation and management activities. Key components of this strategy are based on the premise that this CCA, in the near term, is focused on reducing any deteriorating status of the species by improving, organizing, and implementing specific conservation actions across its range; and in the long term, facilitating the development of a network of affected landowners/managers that can positively influence SDT habitat and population management across the species' range in Arizona.

The commitment and actions outlined in this Section focus on conservation, improvement, and ongoing management of SDT status and habitat. The landscape and local level conservation actions are designed to be adaptable and effectively implemented by all Parties within a comprehensive and collaborative conservation framework. The agency-specific actions describe the specific conservation measures that each Party will deploy to effectively manage the species, including adequately reducing species threats as well as habitat and population loss (Appendix A). The results of these actions will be evaluated through ongoing monitoring of tortoise populations and habitat conditions.

Information obtained from surveys and monitoring will increase the understanding of tortoise population trends and management needs. This knowledge will be applied using the concepts of Adaptive Management that the AIDTT will periodically assess and use to appropriately modify conservation actions.

9.1 Habitat Conservation Commitments

Each of the Parties to this CCA is bound by certain guiding agency requirements which establish their mission, goals, and responsibilities while also managing and conserving the habitat of various species (e.g., the SDT) in Arizona. This section addresses general measures that will be taken by the Parties to conserve SDT and its habitat at the landscape and local level. Best practices for habitat management and monitoring of tortoises are also outlined in Stressor/Conservation Measure Matrix (Appendix A).

There is a high level of certainty that the Parties to this agreement will continue or begin to put into action all identified conservation measures and will obtain the necessary funding and authorization to implement the SDT CCA. Each Party to this agreement, as described below, is dedicated to eliminating or reducing threats to the SDT. However, emergency actions, Congressionally-mandated actions, or future funding allocations could result in a Party's inability to conduct one or more of the proposed conservation measures as described. These circumstances are examples of what is meant when a party states an action will be conducted "when or where feasible" or "where practicable." The language is not meant to indicate a lack of commitment by the Party(ies), but to candidly note that there may be instances where due to circumstances beyond a Party's control, conservation measures or commitments need to be modified or other means of management identified. If Parties need assistance in developing additional or new proposed conservation measures this could be done in cooperation with the AIDTT to ensure that SDT conservation occurs as intended in the CCA.

9.1.1 Landscape Level Conservation Measures

This section describes general conservation efforts that all Parties agree to implement at the landscape level, in accordance with their respective authorities and their individual missions. These common and comprehensive efforts and actions include:

- Identifying suitable or potentially suitable SDT habitat/sites/areas and documenting those areas that are known to support high biodiversity and/or assemblages of federal and state listed threatened and endangered plant and animal species.
- Identifying areas occupied by SDT (for estimating SDT populations following AIDTT protocols/approaches).
- Identifying areas of potential conflict between agency mission and SDT habitat.
- Identifying and reducing or otherwise mitigating dispersal barriers between SDT populations.
- Developing and implementing best management practices (BMPs) for avoiding, minimizing and/or mitigating impacts to suitable and occupied SDT habitat.
- Identifying and collaborating with landowners (private and public) on conservation/management efforts that contribute to reducing or mitigating impacts to SDT habitat (or sustaining same).
- Appropriately sharing SDT information and data among CCA parties to promote the intended conservation partnership and support accompanying adaptive management processes.

- Assessing and evaluating SDT habitat and/or population trends related to conservation actions implemented by CCA partners or otherwise associated with efforts to mitigate identified threats to the species.

9.1.2 Local Level Conservation Measures

This section describes general conservation efforts that all Parties agree to implement at the local, installation or property level, consistent with their respective authorities and in accordance with their individual missions. These common and site-specific efforts and actions include:

- Considering the effects of actions on SDT during the planning process, and avoiding or minimizing impacts, or implementing mitigation measures to offset impacts to tortoise populations and habitat where practical and feasible.
- Identifying presence/absence of SDT in proposed-action areas where the action will disturb soils or other key habitat features in suitable habitat.
- Avoid when practicable, or minimize or mitigate unavoidable adverse effects on SDT populations and habitat during deployment of land management activities.
- Avoid, where practicable, or otherwise minimize or mitigate adverse effects of actions that could result in isolation of known SDT populations and/or landscape-level fragmentation of SDT habitat.

9.2 Agency-Specific Species and Habitat Conservation Actions

National Environmental Policy Act Compliance

This CCA is being developed for planning purposes. Before any on-the ground actions can occur on Federally managed lands, a determination must be made whether or not the conservation actions are consistent with the applicable agency's land use or land management plan and whether or not additional NEPA analysis is required. If conservation actions are determined not to be consistent with a land management plan, then these actions must be incorporated into the applicable agency's land use or land management plan through an amendment or maintenance process before they can be implemented. Actions on lands administered by the State or private lands might not be subject to NEPA analysis.

The following subsections outline specific SDT conservation and management actions that have been implemented, are being implemented, or will be implemented by the Parties. This CCA serves to consolidate and coordinate all current conservation commitments and make the Parties signatory to this CCA accountable for their efforts moving forward. The Stressor/Conservation Measure Matrix (Appendix A) summarizes the suite of conservation actions that will be deployed by CCA Parties to address identified threats facing SDT in Arizona.

9.2.1 Bureau of Land Management

The BLM manages a significant portion of the SDT habitat within the United States. BLM has actively managed the SDT and habitat since the mid-1980s. In the late 1980s, BLM conducted extensive surveys to determine the distribution and relative density of SDT in Arizona and began establishing LTMPs to collect more detailed population and habitat data. In 1988, BLM published a range-wide plan for the management of desert tortoise habitat on the public lands. Numerous policies addressing appropriate management for all land use authorizations, off-site

mitigation and best management practices for grazing and fire were subsequently published and have been incorporated in all land use planning documents developed since 1988. These land use plans classified SDT habitat, prescribed allowable uses within SDT habitat, established use restrictions and emphasized the conservation of SDT habitat during the implementation of all BLM authorized activities.

Since the late 1980s, BLM has continued to collect data on SDT distribution, habitat quality and condition and continued funding of many of the LTMPs statewide. Since about 1990, BLM has reviewed all BLM authorized activities and implemented measures to avoid, minimize or mitigate impacts to SDT habitat. Renewable energy projects have been sited to avoid all occupied SDT habitat. Roads, pipelines and transmission lines have been designed to minimize impacts to SDT habitat or mitigated to achieve no net loss. Recreation and Public Purposes Act lease Plans of Development have been designed to emphasize conservation of SDT habitat and included mitigation for unavoidable impacts. Saleable minerals projects have been denied when impacts to SDT were unavoidable and locatable minerals projects have been mitigated consistent with applicable law and regulation. Livestock grazing permits and authorizations have been reviewed and modified to ensure adequate cover and forage for SDT are maintained or improved. Special Recreation Use Permits have been denied, modified, or mitigated to avoid or minimize impacts to SDT habitat. Since 2008, off-highway vehicle use has been evaluated, restricted to designated routes and mitigated as warranted to minimize impacts to SDT habitat. This route designation process is ongoing and expected to be complete by 2020. Since 2010, BLM has been inventorying and treating buffelgrass infestations on the Ironwood Forest National Monument. Since 1990s, BLM has funded public education efforts and research addressing recreation and human impacts, SDT population viability, and quantification of effects of fire and invasive species.

BLM administers the public lands, within the range of the SDT, through 10 approved Resource Management Plans (RMP) for 7 Field Offices and 3 National Monuments. BLM administrative units that manage SDT habitat and applicable RMPs include:

- Colorado River District
  - Kingman Field Office – Kingman RMP (1993)
  - Lake Havasu Field Office – Lake Havasu Field Office RMP (2007)
  - Yuma Field Office – Yuma RMP (2010)
- Phoenix District
  - Agua Fria National Monument – Agua Fria National Monument RMP (2010)
  - Hassayampa Field Office – Bradshaw – Harquahala RMP (2010)
  - Lower Sonoran Field Office – Lower Sonoran RMP (2012)
  - Sonoran Desert National Monument – Sonoran Desert National Monument RMP (2012)
- Gila District
  - Ironwood Forest National Monument – Ironwood Forest National Monument RMP (2013)
  - Safford Field Office – Safford RMP (1991)
  - Tucson Field Office – Phoenix RMP (1988)

The RMPs referenced can be accessed at: http://www.blm.gov/az/st/en/info/nepa/environmental_

library/arizona_resource_management.html.

While some of the BLM RMPs are less recent, the potential SDT stressors and conservation prescriptions identified to address those stressors have not changed significantly. The 1993 Kingman RMP and 1991 Safford RMP both include SDT conservation management decisions that have been and will continue to be implemented in order to manage for SDT. For example, the Kingman RMP includes designations of Areas of Critical Environmental Concern specifically to emphasize management of SDT habitat. That management remains valid for removing and/or minimizing stressors to the SDT.

On the other hand, our understanding of the magnitude of these stressors has changed and agency management has evolved to reflect the current understanding of conservation need. BLM has actively managed the SDT since the late 1980s. While the scope of existing BLM management for SDT may not have been fully considered in previous status and conservation assessments, implementation of these RMPs in SDT habitat has resulted in consistent proactive conservation of SDT habitat and reduction of threats for 25 years.

These RMPs contain resource allocations, desired condition objectives and management actions that conserve the SDT and habitat on public lands. These planning decisions include, but are not limited to:

- Designation of Areas of Critical Environmental Concern, Wildlife Habitat Areas, Tortoise Habitat Categories and Areas Managed for Wilderness Characteristics which contain management prescriptions or use restrictions that conserve SDT habitat.
- Desired Plant Community, Desired Future Condition, and habitat connectivity objectives that address the habitat needs of the SDT.
- Management decisions to prioritize management of SDT habitat and implement conservation activities including, vehicle route closure and reclamation, invasive plant treatments and maintenance or restoration of habitat connectivity.
- Policy objectives to emphasize and give priority to management of SDT populations and habitat in the event of conflicting resource management objectives, while managing for no net loss in quantity and quality of SDT habitat to the extent practicable and using off-site mitigation (compensation) for unavoidable residual habitat loss.

Through BLM's NEPA process for evaluating and permitting land and resource management activities, activities are evaluated for conformance with management objectives contained in relevant RMPs. In addition, standard operating procedures are described in the RMPs that direct BLM managers to:

- Inventory and evaluate all proposed activities on a case-by-case basis to determine potential impacts to the SDT and habitat.
- Avoid, minimize or mitigate impacts associated with all BLM authorized activities including mineral material sales, rights-of-way, recreational use, travel management, and livestock grazing through project design and modifications to allowable uses in order to achieve SDT management objectives.
- Mitigate impacts to SDT from locatable minerals activities to the extent allowable under 43 CFR Subpart 3809.

- Evaluate SDT habitat conditions relative to established objectives when considering livestock grazing permit renewal and adjust use to insure achievement or progress toward objectives.
- Implement full suppression of wildfire within SDT habitat and minimize impacts associated with fire suppression activities.
- Work with partners to control or eradicate invasive plant and wildlife species to achieve desired conditions.
- Educate the public land users on SDT conservation to increase compliance with regulations and minimize impacts from recreational activities.
- Monitor long term population trend range-wide and pursue alternative population monitoring methodologies to inform management.

9.2.2 Bureau of Reclamation

Reclamation is a water resource management agency with very little land under its jurisdiction in SDT habitat, but Reclamation also implements management actions on private, local, state, tribal, and other federal lands. Using the U.S. Geological Survey's Gap Analysis Program distribution data, approximately 134,101 ha of land managed by Reclamation occurs in SDT habitat. Not all is suitable habitat because some areas have been developed for water management purposes and fenced to exclude wildlife for safety and conflict avoidance purposes.

Offices within the Lower Colorado Region that manage SDT habitat and are responsible for projects on lands under the management of other entities include:

- Lower Colorado Regional Office
- Phoenix Area Office
- Yuma Area Office

Most Reclamation activities related to SDT habitat management are associated with construction projects or ongoing operation and maintenance activities. In Arizona, new and ongoing projects occurring within or near SDT include the Central Arizona Project, reservoir management, canal infrastructure upgrades and maintenance, quarry operations, and groundwater recharge. Potential impacts to SDT from Reclamation activities include habitat loss, fragmentation, displacement, and harassment.

Reclamation has not developed its own management policy for the SDT but guidelines from the DOI/BLM Desert Tortoise Management Policy, Recommended Standard Mitigation Measures for Projects in Sonoran Desert Tortoise Habitat, and those developed on a project specific basis are implemented and provide the management framework to conserve SDT and their habitat. Pursuant to requirements under the NEPA and the FWCA, measures are taken to preserve the desert tortoise and its habitat. Some of those measures include the following:

- Locate projects in previously disturbed areas.
- When appropriate, schedule habitat disturbing activities during the inactive season (generally November 1 to March 1).
- Require tortoise clearance surveys prior to project initiation.
- Limit vehicle speed and use to predetermined routes.
- Where appropriate, enclose project area with tortoise barrier fencing.

- Construct and maintain tortoise-accessible wildlife bridges.
- Maintain a clean vehicle policy while entering and leaving project areas to prevent the transport of noxious weed plants and/or seed.

9.2.3 Fish and Wildlife Service

The mission of the Refuge System is to manage a national network of lands and waters for the conservation, management, and where appropriate, restoration of fish, wildlife and plant resources and their habitat. The Refuge System maintains the biological integrity, diversity and environmental health of these natural resources for the benefit of present and future generations of Americans. The six NWRs that are Parties to this CCA are committed to conserving and enhancing the quality and diversity of wildlife habitat within the refuges, which includes habitat for the SDT. Invasive species removal, visitor education, and recreation management actions implemented by the refuges have and will continue to result in protection of habitat vital to the persistence of the SDT.

Bill Williams River National Wildlife Refuge (BWRNWR)

The following describes species and habitat management conducted on BWRNWR. These actions aid in the conservation of SDT and management of SDT habitat.

- Continue to educate refuge visitors on desert tortoise conservation to increase compliance with regulations and minimize impacts from recreational activities.
- Avoid effects to SDT habitat by conducting management actions occur outside of SDT habitat, in agricultural fields and riparian restoration areas.
- Continue to close the refuge closed to ORVs and keep the one access road through the refuge closed and gated.

Buenos Aires National Wildlife Refuge (BANWR)

The following describes invasive species management and habitat improvements conducted annually on BANWR. These actions aid in the conservation of SDT and management of SDT habitat.

- Invasive species crews in cooperation with Student Conservation Association, American Conservation Experience and Southern Arizona Buffelgrass Coordination Center survey the refuge for buffelgrass between March-May based on weather conditions. Annual monitoring is implemented prior to the "green up" period which is dependent on temperatures and crew availability.
- Monitoring is conducted on all sites treated in the previous year for early detection of new infestations and to look for regrowth from seed propagation resulting from the previous year's buffelgrass.
- Monitoring is continued throughout the growing season depending on crew availability.
- All sites are tracked in a GIS database using Trimble Juno units to monitor treatment results annually.
- Current year’s treatments are used to predict and plan surveys and herbicide treatments for the next year.
- Prescribed burns are conducted on grassland habitats following carefully planned burns to minimize negative impact to adjacent upland desert scrub communities.

- Burns are followed by aeration work to benefit habitat improvements and native seed dispersal.

Cabeza Prieta National Wildlife Refuge (CPNWR)
CPNWR was established as a 'Game Range' in 1939 to protect the natural resources of the Cabeza Prieta area for the protection of desert bighorn sheep. It was officially designated as a NWR in 1975 and currently encompasses 860,000 acres of Sonoran Desert and is the third largest NWR outside of Alaska.

CPNWR finalized a Comprehensive Conservation Plan in 2007 (CPNWR CCP, April 2007) which identified goals and objectives for managing and protecting the refuge's Sonoran Desert habitat. Under this document, the refuge identified four goals as guiding principles for refuge management direction and decisions. These goals are classified as: wildlife and habitat management, wilderness stewardship, visitor services management, and cultural resources management. Under the wildlife and habitat management goal the refuge will protect, maintain, enhance, and/or restore the diversity and abundance of wildlife species and ecological communities of the Sonoran desert.

In addition to SDT conservation and management on the refuge, Objective 17 of the CPNWR CCP dictates that the NWR will conduct surveys for SDT. The strategy for implementing SDT inventories on the refuge is to conduct surveys in suitable habitat following the guidance in the BLM's document "Desert Tortoise Habitat Management on Public Lands" (CPNWR CCP, April 2007).

Havasu National Wildlife Refuge (HNWR)
The following describes management conducted on HNWR. These actions aid in the conservation of SDT and management of SDT habitat.

- SDT habitat in the Needles Wilderness Area, is managed for the purpose of wilderness protection, in accordance with the Wilderness Act of 1964.
- Continue to educate refuge visitors on desert tortoise conservation to increase compliance with regulations and minimize impacts from recreational activities.

Imperial National Wildlife Refuge (INWR)
The following describes invasive species management and habitat improvements conducted on INWR. These actions aid in the conservation of SDT and management of SDT habitat.

- Monitor refuge uplands for establishment of nonnative plant species and prioritize infestations for treatment within the confines of the Wilderness Act of 1964.
- Minimize impacts of wild burros on SDT habitat by working with BLM to reduce wild burro populations in the adjacent Cibola-Trigo Herd Management Area (HMA) to or below the approved Appropriate Management Level (AML) of 165 burros.
- Work to educate refuge visitors on SDT conservation to increase compliance with regulations and minimize impacts from recreational activities.

Kofa National Wildlife Refuge (KNWR)
The following describes invasive species management and habitat improvements conducted on KNWR. These actions aid in the conservation of SDT and management of SDT habitat.

- Continue to work to with right-of-way owners to minimize impacts on SDT from maintenance activities.
- Minimize impacts of feral burros and horses on SDT habitat by working with BLM to reduce encroachment of these animals onto the refuge, which is outside of any Herd Management Area (HMA) and should not have them present.
- Continue to educate refuge visitors on SDT conservation to minimize impacts from recreational activities.
- Continue to enforce regulations within and outside of the wilderness areas of Kofa prohibiting OHV and off road travel and other prohibited activities that may negatively impact STDs.

9.2.4 National Park Service

The NPS policy mandates preservation of ecosystems, rather than singe species, in expectation that intact ecosystems will support an appropriate species spectrum of self-regulating populations. Current NPS policy permits, encourages, and fosters research on its lands, provided the investigator can demonstrate that such research is in the NPS's interest and/or that it cannot be effectively accomplished outside the park. The advantages of conducting tortoise research on NPS lands are clear (grazing control, known history, freedom from gross disturbance, etc.).

Research on SDT has taken place at both SNP and OPCNM since the 1980s. Numerous radio-telemetry studies have provided information regarding seasonal activity and movement patterns of SDT, and capture-recapture surveys of 7 LTMPS (4 at SNP, 3 at OPCNM) were used to estimate density. In addition, identification of areas important for the SDT has also influenced the allocation of efforts expended to control buffelgrass, which has become the highest resource management priority at the park. Published research from studies on NPS lands in Arizona has provided information on SDT abundance, habitat, distribution, diet, reproduction, genetics, disease, effects of fire, and monitoring strategies.

National Park System Management Policies (2006) outline general parameters for managing biological resources on NPS lands. Specific conservation actions for biological resources (including candidate species such as SDT) are generally directed and appropriately implemented through the following 2006 Policy framework:

- *4.4.1* General Principles for Managing Biological Resources
  NPS will maintain as parts of the natural ecosystems of parks all plants and animals native to park ecosystems by:
  - preserving and restoring the natural abundances, diversities, dynamics, distributions, habitats, and behaviors of native plant and animal populations and the communities and ecosystems in which they occur;
  - restoring native plant and animal populations in parks when they have been extirpated by past human-caused actions; and
  - minimizing human impacts on native plants, animals, populations, communities, and ecosystems, and the processes that sustain them.
- *4.4.1.2 Genetic Resource Management Principles*
  The need to maintain appropriate levels of genetic diversity will guide decisions on what actions to take to manage isolated populations of species or to enhance the recovery of

populations of rare, threatened, or endangered species. All resource management actions involving planting or relocating species, subspecies, or varieties will be guided by detailed knowledge of site ecological histories and knowledge of local adaptations, ranges, and habitat requirements.

- *4.4.2.2 Restoration of Native Plant and Animal Species*
  NPS will strive to restore extirpated native plant and animal species to parks whenever all of the following criteria are met:
  - Adequate habitat to support the species either exists or can reasonably be restored in the park and if necessary also on adjacent public lands and waters; once a natural population level is achieved, the population can be self-perpetuating.
  - The species does not, based on an effective management plan, pose a serious threat to the safety of people in parks, park resources, or persons or property within or outside park boundaries.
  - The genetic type used in restoration most nearly approximates the extirpated genetic type.
  - The species disappeared or was substantially diminished as a direct or indirect result of human-induced change to the species population or to the ecosystem.
  - Potential impacts upon park management and use have been carefully considered.

- *4.4.2.3 Management of Threatened or Endangered Plants and Animals*
  NPS will survey for, protect, and strive to recover all species native to national park system units. The Service will fully meet its obligations under the NPS Organic Act and the ESA to both proactively conserve species and prevent detrimental effects to these species. To meet these obligations, the NPS will:
  - Cooperate with other agencies, states, and private entities to promote candidate conservation agreements aimed at precluding the need to list species; and,
  - Conduct actions and allocate funding to address proposed and candidate species.

- *4.4.4.2 Removal of Exotic Species Already Present*
  All exotic plant and animal species that are not maintained to meet an identified park purpose will be managed—up to and including eradication—if (1) control is prudent and feasible, and (2) the exotic species interferes with natural processes and the perpetuation of natural features, native species or natural habitats.

Organ Pipe Cactus National Monument (OPCNM)

The SDT is a species of management concern at OPCNM. With NPS funding and technical assistance, University of Arizona researchers established and surveyed 2 LTMPs in 1996 and 1997. In addition, they conducted SDT transect surveys in 1988, 1995, and 2005. Together, these surveys provided information on status and trend of SDT, and informed management decisions. Future monitoring efforts include a monument-wide survey of SDT by sampling up to 25 3-ha occupancy sites. In 1994, OPCNM staff initiated a buffelgrass control project to eradicate buffelgrass from within monument boundaries. While buffelgrass has reinvaded certain areas along the international border, OPCNM staff continue their eradication efforts.

OPCNM is developing conservation measures and policies for SDT, and notes that rules and

restrictions similar to those for SNP (below) are applied in managing OPCNM lands and resources.

Saguaro National Park (SNP)

SDTs occur in both the Rincon Mountain District and Tucson Mountain District of SNP. Research on SDT has taken place at SNP since the 1980s. Numerous radio-telemetry studies at SNP have provided information regarding seasonal activity and movement patterns of SDT, and capture-recapture surveys of 4 LTMPS were used to estimate density. In addition, identification of areas important for the SDT in SNP has also influenced the allocation of efforts expended to control buffelgrass, which has become the highest resource management priority at the park. Published research from studies at SNP has provided information on SDT abundance, habitat, distribution, diet, reproduction, genetics, disease, effects of fire, and monitoring strategies.

SNP identified goals and objectives for managing and protecting SNP's SDT, plants and wildlife, and other resources that are captured in the following Park plans:

- SNP General Management Plan/EIS: http://www.nps.gov/sagu/parkmgmt/upload/SAGU_Abbrev_WEB_part1.pdf)
- SNP Comprehensive Trail Management Plan/EA: (http://www.nps.gov/sagu/parkmgmt/upload/SAGU-Comprehensive-Trails-Mgmt-Plan-and-EA-February-2009-3.pdf)
- SNP Restoration Plan/EA: http://parkplanning.nps.gov/document.cfm?documentID=57136)

In addition, SNP applies guidance provided by the AIDTT in framing the development and ongoing implementation of management plans relating to SDT, including the following:

- 2008 Recommended Standard Mitigation Measures for Projects in SDT Habitat
- 2010 Desert Tortoise Survey Guidelines for Environmental Consultants
- 2007 SDT Handling Guidelines for clearance surveys, mitigations

Through NEPA process for evaluating and permitting land and resource management activities, actions are evaluated for conformance with management objectives contained in relevant NPS plans and directives. Standard mitigations and other wildlife conservation actions, including those specifically identified for SDT on SNP include:

- Exercise caution at worksites and in the vicinity to not disturb SDT.
- Inform provide project personnel with about SDT, and other applicable natural resource issues.
- Notify/consult Resources Management (RM) personnel when any SDT must be disturbed or handled. If in imminent danger, SDT can, and should be moved out of harm's way per AGFD's recommendations.
- Require provisions for any projects involving trenching or digging holes that include: installing an escape ramps with a slope < 45°every 20-50'; or covering in a manner that prevents animals (vertebrates) from falling into them.
- Avoid disturbing holes and crevices large enough to shelter SDT.
- Do not disturb any SDT encountered or known to be in a burrow.
- Relocate SDT if habitat is accidentally destroyed, or if and occupied shelter is determined to be in jeopardy of destruction, as determined by a RM.

- As per AGFD's guidelines, SDTs should be moved no further than necessary (less than 0.5 mile from their original location), handled as little as possible, and moved no more than 48 hours in advance of the habitat disturbance.
- SDTs should be moved no further than necessary (less than 0.5 mile from their original location), and should be handled as little as possible.

9.2.5 Department of Defense

The DOD, with the assistance of the USFWS and the states, is responsible under the Sikes Act for carrying out programs and implementing management strategies to conserve and protect biological resources on its lands. INRMPs are planning documents that allow DOD installations to implement landscape-level management of their natural resources while coordinating with various stakeholders. INRMPs are extremely important management tools that ensure military operations and natural resources conservation are integrated and consistent with stewardship and legal requirements. DOD has specific management objectives and activities for SDT management included in the INRMPs for each installation.

Conservation of the SDT and other species is part of a broader goal to conserve biological diversity on DOD lands consistent with their mission. Biological diversity and the long-term survival of species such as the SDT ultimately depend upon the health and sustainability of the ecosystem in which they reside. Therefore, installation-specific SDT management strategies will promote ecosystem integrity and health, which will also benefit DOD by preserving and restoring training lands for long-term use.

DOD installations in Arizona have been funding SDT monitoring since the 1980s. Numerous radio-telemetry studies on DOD lands have provided information regarding seasonal activity and movement patterns of SDT, habitat use, and distribution. In addition, DOD has funded capture-recapture surveys using occupancy methods to estimate density, and further define habitat use. Published research from these studies has provided information on SDT abundance, habitat use, distribution, diet, reproduction, survival, genetics, and monitoring strategies. The results of these collaborative studies, coupled with training area maps and specific tortoise locations, allow natural resource managers to make informed decisions and take appropriate measures to reduce potential conflicts between military activities and SDT habitat.

Air Force

Barry M. Goldwater Range East

The 56th Range Management Office (RMO) at Luke Air Force Base manages approximately 1.05 million acres of the eastern portion of the BMGR East. The RMO Environmental Science Management Office programs funds for monitoring, conserving, and managing wildlife populations and habitats, including the SDT. Additionally, the RMO initiates NEPA reviews for all undertakings on BMGR East.

AF undertakings that have the potential to affect SDTs or tortoise habitat are modified and/or mitigating actions are taken to minimize the impact to the greatest extent possible as outlined in the INRMP. In addition, the following outlines other conservation actions that are routinely implemented to directly or indirectly benefit tortoise populations on the BMGR East:

- Public access is only allowed by permit in limited areas of the BMGR East. Installation permitting process requires visiting recreationists to view a range safety video that includes natural resource conservation practices.
- All recreational vehicle travel on the range is restricted to designated roads.
- Off-road travel by official vehicles is highly restricted (e.g., limited to unexploded ordnance clearance activities around targets during annual range maintenance operations).
- Designated speed limits are established for all roads on the BMGR East.
- A Fire Management Plan provides guidance for implementing recreational fire restrictions and limitations on the use of certain types of munition training (e.g., flares) during high fire risk conditions. This plan also sets forth the procedures and coordination for wildfire response and suppression.
- The installation follows an invasive weed monitoring and eradication program, which serves to conserve native desert habitat.
- Livestock and livestock grazing leases are not permitted on the installation, and trespass livestock are removed.
- Mining leases and any associated activities are not permitted on the installation.

Army

The SDT occurs on Arizona Army National Guard (AZARNG) installations at Florence, Buckeye, and Casa Grande and at U. S. Army Yuma Proving Ground installation. Specific management objectives and activities for SDT management are included in an INRMP for each installation in which active training and testing occurs.

Army National Guard - Florence Military Reservation (FMR)

SDT are located throughout most of FMR. Management and conservation of SDT and their associated habitat is guided by the FMR INRMP. Surveys, monitoring and research projects focused on SDT have been on-going throughout FMR through contracts with the AGFD since 2000 including:

- Multi-year research within AZARNG lease lands to evaluate second and third-order habitat selection, selection of home ranges size, and adult tortoise survival relative to military training and other public uses (2000-2008).
- Development and implementation of a long-term monitoring plan to estimate occupancy within the primary training areas of FMR (2009-present).
- Habitat and function connectivity modeling of tortoise habitat within the primary training areas at FMR (to be completed Sept 2015).

INRMP management guidelines that impact SDT are interwoven within a variety of other natural resource practices such as native plant protection, desert wash protection, and general resource protection measures as well as tortoise specific goals and objectives and BMPs.

Management goals and objectives that benefit SDT:

- Long-term monitoring and surveys to estimate population demography and distribution.
- Evaluation of tortoise habitat connectivity within FMR and in relation to adjoining lands.
- Tortoise education and awareness for all users.
- Preservation of desert washes and riparian areas.

- Native plant protection to include surveys and protection for special status species, invasive plant species surveys, removal, and controls, reduction or avoidance of hardened surfaces, new soil disturbance, or vegetation removal.
- Fire awareness and prevention that includes providing educational materials to all FMR users, reducing invasive plant species such as buffelgrass known to carry fire within desert ecosystems, containing small local range fires, and working with local agencies with fire-fighting capabilities for support in large-scale fire events.

BMPs for SDT on FMR include:

- Restrict off-road travel unless required for mission critical activities or in support of tortoise or habitat conservation.
- Maintain speed limits throughout the base of 25-35 mph on improved roads and dirt trails.
- Minimize the size of construction footprints and other ground disturbing activities, encourage the use of previously disturbed areas and roads, and avoid conducting these activities in high quality tortoise habitat.
- When appropriate, schedule construction operations and other mechanized ground disturbances outside of peak tortoise activity periods (November – February or May – June).
- Complete pre-construction tortoise surveys to identify potential burrows or tortoises that may be present on the project site.
- Provide tortoise awareness training and pre-construction briefings for all FMR users.
- Remove all tortoise found within construction areas according to AGFD handling protocols.
- Maintain clean training areas and construction sites free of trash.
- Provide daily inspection or methods of escape or exclusion from construction related trenches, holes, and pits left open overnight to avoid tortoises becoming entrapped or from drowning in the case that it retains water.
- When excluding tortoises from harmful areas, use tortoise proof fencing materials and methods authorized by the Natural Resource Manager (NRM).
- Avoid or minimize soil disturbing activities within 50 meters of all desert washes.
- Prohibit destruction of live vegetation during military training operations.
- Prohibit the intentional firing upon cacti or other vegetation during live fire training.
- Maintain soils and implement bank stabilization measures along wash-trail interfaces as needed to maintain integrity of desert washes.
- Identify, map and remove invasive plant species to reduce the risk of wildfire and sustain healthy native plant communities.
- Follow Arizona State native plant laws, restrictions, and regulations on state and federally-owned properties.
- Use native plants and seeds when restoration of degraded areas is recommended by the NRM.
- Meet with USFWS and AGFD during the annual review of the FMR INRMP to refine the BMPs to consider the best available science on tortoise conservation practices on relevant AZARNG property.

- Provide survey and research data to the AGFD Heritage Data Management System to assist with determining state population trends and assist with future landscape-scale conservation efforts.
- Develop strategies and become involved with programs such as the Army Compatible Use Buffer (ACUB) and Readiness and Environmental Protection Integration (REPI) Program that will assist in conserving tortoise habitat on adjacent lands owned and managed by the ASLD, BLM, and private landowners to buffer the potential mission related impacts to this species.

Army National Guard - Buckeye Training Site (BTS)
SDT occurs infrequently throughout BTS. Current management practices and BMPs implemented at the installation level by the NRM for the AZARNG mimic those listed above for FMR. At present, BTS is used infrequently (10 days /year), by AZARNG for training. No firing ranges or additional training activities are programmed or planned for this installation in the near future. Impacts from current ground training have been assessed and reviewed within the NEPA processes and requirements. Any additional training or construction will be subject to the NEPA process at which time impacts to SDT will be addressed and the BMPs outlined above for FMR will be implemented when applicable.

Army National Guard - Casa Grande Training Site (CGTS)
Planning level surveys using occupancy monitoring protocols were conducted by AGFD at CGTS in 2012 and 2013 in which SDT was detected. The CGTS is currently not in use by the AZARNG and no facilities are located at the site. Any future training or construction at CGTS will be subject to the NEPA process at which time impacts to SDT will be addressed and the BMPs outlined above for FMR will be implemented when applicable.

U.S. Army Installation - Yuma Proving Ground (YPG)
SDT has been observed at the East Arm and the Cibola Region of YPG. Recorded sightings of SDT have also been made in habitat adjacent to the installation. Their distribution on YPG appears to be very patchy, most likely due to extreme temperatures, minimal precipitation and relatively low abundance of shelter sites. Within the Dome Rock and Trigo Mountains and Trigo Peaks, occupancy is limited to rocky hillsides and washes where adequate shelter can be found, and their movements are typical of the species throughout its range. That is, SDT use desert washes as movement corridors as well as traversing over steep ridges.

The management goals, objectives, and actions presented in the YPG INRMP (U.S. Army Yuma Proving Ground, 2012) seeks to maintain biological integrity of ecosystems on YPG to sustain the military mission. The YPG Environmental Sciences Division is actively engaged in the budget process and seeks funding for specific projects to support species-at-risk, including SDT. YPG identifies SDT in the INRMP and the plan establishes management actions directed at conservation of tortoise. The management objectives are intended to guide cooperative wildlife management on YPG including management of SDT. These objectives include, but are not limited to:

- Survey, monitor, and analyze trend information for wildlife populations.
- Assess wildlife habitat needs and actively manage to provide and protect wildlife habitat. YPG evaluates all proposed actions as required under NEPA and impacts to SDT are

evaluated and mitigation measures are appropriately applied (including providing workforce environmental training, which includes information on SDT).

- Survey, monitor, and analyze trend information and actively manage to provide and protect habitat for species of special management concern.
- Maintain or restore geographic continuity and minimize population isolation among native wildlife populations.
- Relocate wildlife to maintain, enhance, or restore viable populations and distributions of native wildlife.
- Utilize best available scientific knowledge and techniques to manage wildlife.
- Minimize illegal wildlife take and habitat degradation in remote areas.
- Monitor for and manage climate change impacts on native plant and animal species
- Cooperatively manage wildlife issues with AGFD with specific emphasis on educating YPG employees, contractors, and housing residents about living with Arizona's wildlife by utilizing various available outreach avenues to deliver messages and materials.

Specific actions to implement these objectives are generalized within the INRMP and are more specifically refined in cooperation with USFWS, AGFD and other conservation management partners. One major management action of note in the INRMP is to maintain present populations and current habitat of SDT with management of tortoise being implemented in accordance with the SDT CCA. With respect to SDT, this management includes:

- Collaborating with AIDTT in developing and implementing SDT conservation agreements;
- Continuing to complete site-specific surveys and avoidance, minimization, and mitigation measures to the extent practical for proposed testing actions in or near potential SDT habitat;
- Conducting any SDT relocations in accordance with *Guidelines for Handling Desert Tortoises during Construction Projects* (Desert Tortoise Council 2007).

Marine Corps

MCAS - Barry M. Goldwater Range West

Management of natural resources on the approximately 700,000 acres comprising the BMGR West is prescribed in the BMGR INRMP (USAF et al. 2013). Natural resources are considered in NEPA reviews, and avoidance, minimization, and mitigation measures incorporated, consistent with the military training mission, for all undertakings on BMGR West. Natural resources conservation measures are incorporated into operational documents such as MCAS Yuma Station Order 3710.6J (Range and Training Areas Standard Operating Procedures) and in the BMGR West Visitor's Guide and Map, the regulations issued to the recreational users of the BMGR West.

The wide variety of tactical aviation training activities and selected ground training and training support operations conducted at BMGR West predominantly do not occur within rocky slopes and bajadas where SDT primarily occur. However MCAS Yuma implements many conservation actions that directly or indirectly benefit tortoise to include:

- Mapping, monitoring and controlling invasive vegetation with potential to alter vegetation communities and increase fire potentials in accordance with BMGR INRMP

- Evaluating roads during INRMP reviews/updates and closing redundant and unnecessary roads as appropriate
- Restricting vehicles (military and civilian) from exceeding a 25mph speed limit on BMGR West
- Maintaining a full-time Conservation Law Enforcement Staff to enforce conservation laws and regulations
- Restricting travel off designated road/trails or outside of designated ground support areas and target areas, restricting travel in washes not designated as authorized roads/trails, and restricting parking and camping more than 50 feet off roads
- Briefing and educating range users on SDT and burrows
- Prohibiting range users from harassing, handling, harming, and killing of SDT Requiring range users to inspect around vehicles for SDT and other wildlife prior to moving
- Developing and implementing formal agreements with U.S. Customs and Border Patrol (CBP) regarding best management practices for road maintenance and operational road dragging associated with CBP enforcement
- Planning and implementing projects, in cooperation with CBP, to restore disturbed sites and reverse previous habitat degradation
- Ensuring all biologists are trained in SDT handling, obtain appropriate Scientific Collection Permit through AGFD and implement safe handling procedures during management activities.

9.2.6 Customs and Border Protection

CBP is not a land management agency and does not directly manage species or other natural resources. Instead, as it carries out its primary mission CBP cooperates with USFWS, BLM, NPS and other signatories to this CCA to ensure that, to the extent practicable, it advances the goal of conservation and, where possible, minimizes or avoids impacts to threatened, endangered, candidate, sensitive or special status species and their habitat. In the context of this CCA, CBP will participate in the AIDTT and provide appropriate direction to CBP operations to facilitate SDT conservation actions on lands managed by other agencies.

9.2.7 Forest Service

The FS has designated the SDT as Regional Forester Sensitive status for planning and analysis purposes, and SDT occur within the Coronado, Prescott, and Tonto National Forests. In addition to the FSM, FS administers these public lands within the range of the SDT through three approved Land Management Plans (LMPs). Through the FSM and LMPs, FS works to avoid actions or minimize unwanted impacts to SDT habitat. Conservation measures specific to SDT include treating nonnative invasive plant species, maintaining contiguous blocks of interconnected habitat, and designate routes through Travel Management planning.

The LMPs contain plan components in the form of desired conditions, objectives, and standards and guidelines that can provide for the conservation of the SDT and its habitat on public lands. LMP information and revision status for the three of the national forests that manage SDT habitat can be found here:

Coronado National Forest: http://www.fs.usda.gov/detail/coronado/landmanagement/planning/?cid=fswdev7_018702

Prescott National Forest: http://www.fs.usda.gov/detail/prescott/landmanagement/?cid=stelprdb5122002
Tonto National Forest: http://www.tontoplan.org/

Forest Service Manual 2670
Through the biological evaluation process (FSM 2670.32) for land and resource management activities, project level effects to sensitive species are evaluated for conformance with the viability directives contained in the FSM. Other direction relevant to SDT in the FSM and the LMPs include, but not limited to:

- *FSM-Objectives: 2670.22 - Sensitive Species*
  - Develop and implement management practices to ensure that species do not become threatened or endangered because of FS actions.
  - Maintain viable populations of all native and desired nonnative wildlife, fish, and plant species in habitats distributed throughout their geographic range on National Forest System lands.
  - Develop and implement management objectives for populations and/or habitat of sensitive species.
- *FSM-Policy: 2670.32 - Sensitive Species*
  - Assist States in achieving their goals for conservation of endemic species.
  - Review programs and activities as part of the NEPA process through a biological evaluation, to determine their potential effect on sensitive species.
  - Avoid or minimize impacts to species whose viability has been identified as a concern.
  - Analyze, if impacts cannot be avoided, the significance of potential adverse effects on the population or its habitat within the area of concern and on the species as a whole.
  - Establish management objectives in cooperation with the States when projects on National Forest System lands may have a significant effect on sensitive species population numbers or distributions. Establish objectives for Federal candidate species, in cooperation with the USFWS and the States.

Conservation Measures for the Main SDT Stressors on the Units:
Coronado National Forest

- LMP objective for Desert Community: Suppress or eradicate buffelgrass on 1,000 to 1,500 acres of Sonoran Desert every year using herbicides and manual methods. Wildland fire (planned or unplanned ignitions) should not be used as a management activity in desert communities, except as a strategy to control invasive vegetation.
- Through the travel management process, the Forest included the decommissioning of unauthorized use-created routes in SDT habitat.
- LMP prohibits overland travel off system roads except within 300 feet of a designated route for the purposes of camping.
- LMP Range Management Guideline: Grazing intensity, frequency, occurrence, and period should provide for growth and reproduction of desired plant species while maintaining or enhancing habitat for wildlife.

Prescott National Forest

- LMP Wildland Fire Standard: Within the Potential Natural Vegetation Types called

Desert Communities, fire shall not be used as a tool for management and all fires will be suppressed.

- LMP Locatable Minerals Guideline: Mitigation measures should be used for Southwestern Region sensitive species to minimize impacts to populations due to mineral exploration or extraction activity. Closing and reclaiming abandoned mine lands should be given high priority.
- LMP Mineral Materials Guideline: Occupied Southwestern Region sensitive species habitat should be avoided during development of new mineral material extraction sites. Heavy equipment use and material removal should not take place in occupied Southwestern Region sensitive species habitat within current or new permitted sandstone or dolomitic limestone quarries.
- LMP Range Guideline: Grazing intensity, frequency, occurrence, and period should provide for growth and reproduction of desired plant species while maintaining or enhancing habitat for wildlife.
- LMP Wildlife Guideline: Design features and mitigation measures should be incorporated in all FS projects as needed to ensure that Southwestern Region sensitive species do not trend toward listing as threatened or endangered species.

Tonto National Forest

- Inventory and map invasive plant infestations and prioritize treatments in SDT habitat. Work with partners (AIDTT, local volunteers and organizations) to control or eradicate invasive plant species.
- Routes that conflict with maintaining desert tortoise habitat will be mitigated. Mitigation will include, but not be limited to, the following: route closure, seasonal restrictions, rerouting, vehicle type restrictions, speed restrictions, etc.
- Implement grazing management practices to achieve or make significant progress toward meeting desired conditions within SDT habitat.

9.2.8 Natural Resource Conservation Service

The 2014 Farm Bill was enacted on February 7, 2014. NRCS offers voluntary Farm Bill conservation programs that benefit both agricultural producers and the environment. NRCS offers financial and technical assistance to help agricultural producers make and maintain conservation improvements on their land. NRCS offers easement programs to eligible landowners to conserve working agricultural lands, wetlands, grasslands and forestlands. NRCS works with partners to leverage additional conservation assistance for agricultural producers and landowners in priority conservation areas.

The NRCS programmatically consulted with the USFWS on numerous species, including the Mohave desert tortoise. That consultation outlined conservation measures to add to the existing implementation criteria of conservation practices when completed with Mohave desert tortoise habitat. Utilizing this same species conservation approach, the NRCS will extend those conservation measures that are appropriate to that of the SDT when working within its habitat and is working with partners to finalize Best Management Practices for SDTs on active livestock ranches (Ranching and SDT Working Group *in prep*).

9.2.9Arizona Department of Transportation

ADOT right-of-way intersects suitable habitat for the SDT in the southern, central and western portions of Arizona. ADOT has established guidelines to protect SDT populations along state highways and at construction sites. As a signatory to the SDT CCA, ADOT will:

- Promote awareness of the conservation status of the SDT within ADOT.
- Collect data on SDT sightings in ADOT right-of-way and provide that information to AGFD.
- Partner with AGFD to implement survey and handling procedures, conservation approaches and research related to SDTs.
- Maintain ADOT right-of-way to minimize invasive plant species and fire risks as authorized.
- Partner with state and federal agencies to address invasive plant species in and adjacent to ADOT right-of-way.
- Coordinate and partner with state and federal agencies and other interested parties to incorporate project design features to minimize SDT habitat fragmentation and vehicle strikes.
- Conduct habitat suitability surveys and analyze potential impacts for projects with a scope of work that could impact SDT habitat.
- Provide awareness training and/or information to ADOT and contractor personnel working on construction and maintenance projects in areas with suitable habitat.
- Follow the most current protocol for relocating any SDT that may be impacted by an ADOT construction or maintenance project.

9.2.10 Arizona Game and Fish Department

The AGFD is a wildlife management agency and owns and / or manages a few lands within SDT habitat. The AGFD has actively managed SDT since the mid-1980s. In cooperation with BLM, AGFD has monitored SDT populations and their habitat through capture-recapture surveys of study sites and on 17 LTMPs throughout the range of SDT in Arizona. Published research on SDT from studies and LTMPs has provided information on natural history, population dynamics, distribution, adult tortoise survival, and reproduction in Arizona.

AGFD will continue to monitor LTMPs and other populations as needed, or as opportunities arise, to establish trends on SDT habitat and distribution, as well as health of captive and wild desert SDT. Results will be used to better understand the magnitude of threats and to develop management strategies to deal with them.

As outlined in the SWAP (AGFD 2012a), the AGFD commits to coordinate with partners to achieve conservation and research goals, ensuring geographically and ecologically broad coverage of SDT in Arizona, and to complete and implement the CCA (formerly named State Conservation Agreement) with AIDTT partners.

- Coordinate annual tortoise monitoring on up to 5 BLM, 2 NPS, and 1 NF long-term desert tortoise monitoring plots (LTMPs), including complete coverage surveys of up to five LTMPs and up to 52 3-ha occupancy sites within each of three study areas for use in population viability and occupancy analyses.
- Monitor SDT population at Sugarloaf Mountain, Tonto National Forest.

- Work with partners (BLM, FS, and NPS) to apply state-of-the-art range-wide monitoring strategies on LTMPs.
- Continue to monitor for disease and evaluate each tortoise encountered (captive or wild) for signs of URTD, shell disease, and other health problems. If necessary, collect blood samples and conduct appropriate analyses to determine population genetics, assess contaminants levels, and exposure to *Mycoplasma* (URTD) or other potential pathogens.
- Study the effectiveness of fencing and crossing structures for SDTs along Arizona highways as necessary.
- Administer the tortoise adoption program and coordinate activities with external partners.
- Conduct and continue to support population monitoring, and habitat surveys in cooperation with other agencies and organizations involved in the AIDTT.
- Review, and as necessary revise and implement recommendations and guidelines for management of the SDT and its habitats.

AGFD's Project Evaluation Program (PEP) facilitates the incorporation of fish and wildlife resource needs or features in land and water development or management programs in Arizona, and is responsible for coordinating the Environmental Assessment Checklist (EAC) process. The EAC process strives to ensure that all AGFD activities comply with applicable laws, policies and directives including: NEPA, ESA, State and National Historic Preservation Acts, and granting entities and management plans. The EAC process also ensures coordination with affected land managers and land users. AGFD Policy I2.2, states that the AGFD will meet the objectives of NEPA on any project or program that may have an effect on the environment. The EAC process provides a systematic process for identifying issues and evaluating effects associated with a project or program.

In addition to any project documentation, existing plans, blueprints, protocols, and maps, the EAC process requires a complete description of the proposed project and includes the following information, if applicable: habitat types, equipment/tools to be used, description of all potential surface and subsurface disturbance, including total acreage and dimensions of all project areas with potential surface and subsurface disturbance, potential impacts, including visual or auditory effects, alternatives considered in order to avoid or minimize impacts, anticipated implementation date and duration of project, and how the site will be accessed. AGFD's PEP is also responsible for coordinating the review of other agencies' land and water development, management programs, or other actions/projects that may impact wildlife resources, and developing official AGFD position statements for these actions.

9.3 CCA Funding Commitments

Each of the Parties are committed to achieving the goals of this CCA and shall seek funding for implementation of the conservation measures set forth in this CCA. As appropriate, Parties will support the AIDTT and all management activities undertaken in accordance with the responsibilities of the AIDTT. Many of the respective agency actions discussed above are already funded and are part of standard operating procedures or commitments outlined in existing land use/management plans. Accordingly, we are confident that funding currently supporting these conservation measures would continue, but recognize that this funding could be reduced over future years. For those commitments in this CAA, it is understood that these

commitments may not be undertaken and or implemented unless and until there has been an appropriate obligation of funds for said commitments.

No provision herein shall be interpreted to require obligation or payment of funds in violation of the Anti-Deficiency Act, 31 U.S.C. § 1341, or any applicable state law. Nothing in this CCA will be construed by the Parties to require the obligation, appropriation, or expenditure of any funds from the U.S. Treasury. The Parties acknowledge that the USFWS will not be required under this CCA to expend any federal agency's appropriated funds unless and until an authorized official of that agency affirmatively acts to commit to such expenditures as evidenced in writing.

10. Adaptive Management

The conservation commitments and actions, summarized in the section 9, have been developed by the Parties to this CCA to address identified threats to SDT in Arizona (section 8). Appendix A provides the details for the specific conservation actions - as they relate to these identified species threats - that have been implemented, are being implemented, or are being developed for implementation by the Parties to this CCA. Accordingly, the conservation actions outlined in this CCA are designed to achieve the stated purpose of this CCA of providing comprehensive, statewide conservation by effectively addressing threats to SDT across its range in Arizona in order to preclude or remove the need to list this species under the ESA. In implementing this CCA, the AIDTT will apply adaptive management principles through the duration of the CCA to ensure associated conservation measures remain responsive and effective.

Adaptive management is a scientific approach that: 1) recognizes uncertainty that is inherent in natural systems, 2) capitalizes upon change and improvement in data gathering and analysis techniques, and 3) treats actions in an experimental framework in which learning becomes an inherent objective and alternative hypotheses are evaluated. It is basically a mechanism for continuous improvement based on what has been learned through monitoring and evaluation of management actions (Salafsky et al. 2001). Adaptive management is designed to bring new information immediately into new management direction. An adaptive management program can also help to anticipate and resolve uncertainty related to the covered species, the effect of conservation measures and/or changes in environmental conditions.

Because of the wide range of habitat conditions that SDT occupy in Arizona and the continual growth of knowledge in areas such as life history and disease, this strategy will have to remain flexible in order to capture and reflect new information on desert tortoises. Based on the expanded duration and geographic application of conservation measures implemented under this CCA, the success of this CCA will benefit from the adoption of an adaptive management approach to conserving SDT. Cooperators agree and recognize, consistent with the goals of this CCA, that monitoring actions and conservation measures implemented will be conducted consistent with the concepts of adaptive management. The effectiveness of all conservation measures and monitoring methods will be periodically reviewed and evaluated by the cooperators. Based on such evaluation, appropriate modifications to strategies and actions will be made to ensure scientific rigor and the efficacy of conservation measures. The signatories to this CCA are committed to seeking the resources necessary to ensure successful implementation of adaptive management principles.

The essential steps of the CCA adaptive management strategy are summarized as follows:

Step 1. Implement CCA conservation actions, measures and associated strategies.
Step 2. Implement annual work plans for management and monitoring.
Step 3. Review CCA conservation goals, objectives and strategies, and adjust as necessary based on updated information.
Step 4. Prioritize locations for implementation of conservation actions and identify and prioritize supporting research needs.
Step 5. Initiate site-specific actions to reduce or eliminate identified threats.
Step 6. Implement monitoring plan to determine effectiveness of conservation actions.
Step 7. Analyze and evaluate monitoring and management results to determine progress towards attainment of conservation objectives.
Step 8. Return to Step 3.

11. CCA Duration, Renewal and Review

Long-term protection and management, as outlined in this CCA, are necessary for the continued conservation of the SDT. The initial term of this CCA shall be ten (10) years. Thereafter, the Parties agree that this CCA shall be extended for additional five (5) year increments until long-term habitat and population conservation of the SDT is achieved, as determined by the AIDTT with concurrence by USFWS.

Any Party to the CCA may propose modifications to this CCA by providing written notice to the other Parties. Such notice shall include a statement of the proposed modification and the reason for the modification. The Parties will use their best efforts to respond to proposed modifications within 60 days of receipt of such notice. Proposed modifications will become effective upon the other Parties' written approval and completion of any necessary environmental analysis. Any Party may withdraw from this CCA upon sixty (60) days written notice to the other Parties.

All parties are hereby put on notice that the State of Arizona's participation in this CCA is subject to cancellation pursuant to ARS 38-511. Pursuant to ARS 35-214 and 35-215, and Section 41.279.04 as amended, all books, accounts, reports, files, and other records relating to this CCA shall be subject at all reasonable times to inspection and audit by the State for 5 years after CCA completion. Such records shall be reproduced as designated by the State of Arizona. Federal agencies may comply with the aforementioned State statutes to the extent they do not conflict with applicable federal law. All parties are hereby put on notice that AGFD's participation in this agreement is subject to Executive Orders 99-4 and 75-11, entitled "Prohibition of discrimination in State Contracts – Non-discrimination by Employment by Government Contractors and Subcontractors". Said non-discrimination orders, by reference, are made a part of this CCA.

12. Effect of the CCA in Event of Species Listing Decision

It is the intent and expectation of the Parties that the execution and implementation of this CCA will lead to the conservation of the SDT within its natural range in Arizona. If, subsequent to the effective date of this CCA, the Secretary of the Interior should determine pursuant to section 4(a) of the ESA (16 U.S.C. §1533(a)), that the SDT is threatened or endangered, the Parties may participate in recovery planning for the SDT. It is also the expectation of the Parties that the

conservation and management commitments made in this document will be considered by the USFWS in their listing determination in the event the SDT is proposed for listing under the ESA.

13. Additional Provisions

13.1 Remedies

No Party shall be liable in damages for any relief under this CCA (including, but not limited to, damages, injunctive relief, personal injury, and attorney fees) for any performance or failure to perform under this CCA. Furthermore, no Party has any right of action under this CCA.

All Parties will have all remedies otherwise available to enforce the terms of the CCA and any associated permits. No party shall be liable in damages for any breach of this CCA, any performance or failure to perform an obligation under this CCA, or any other cause of action arising from this CCA.

13.2 Dispute Resolution

The Parties agree to work together in good faith to resolve any disputes, using dispute resolution procedures agreed upon by the Parties. In addition, the AIDTT will coordinate as needed to help resolve any disputes among the Parties. To the extent required pursuant to ARS 12-1518, and any successor statutes, the parties agree to use arbitration, after exhausting all applicable administrative remedies, to resolve any dispute arising out of this CCA, where not in conflict with federal laws.

13.3 No Third-Party Beneficiaries

This CCA does not create any new right or interest in any member of the public as a third-party beneficiary, nor shall it authorize anyone not a Party to this CCA to maintain a suit for personal injuries or damages pursuant to the provisions of this CCA. The duties, obligations, and responsibilities of the Parties to this CCA with respect to third parties shall remain as imposed under existing law.

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APPENDIX A
Stressor / Conservation Measure Matrix

Appendix A: Stressor/Conservation Measure Matrix

STRESSOR[1]	Cooperator	Scope[2]	Immediacy[3]	Intensity[4]	Exposure[5]	Response[6]	Overall Threat Level[7]	CONSERVATION MEASURES	CONSERVATION BENEFITS	MEASURE OF SUCCESS	ANNUAL REPORTING METRIC
			***A. The present or threatened destruction, modification, or curtailment of its habitat or range* - Expected stressors that may reduce the absolute arrangement of habitat, the connectivity of habitat units, and the quality of habitat, etc.**								
A.1. Degradation of habitat through invasive nonnative plant species establishment (e.g., buffelgrass and red brome) and altered fire regimes.	BLM	VS/L	F/I/H	L	Si	BNI	M	Immediately suppress wildfires in Sonoran desertscrub vegetative communities.	Minimize SDT habitat impacts associated with wild fires.	Average fire size reduced.	Summary of annual fire reports (number and size of fires in SDT habitat).
	BLM	VS/L	F/I/H	L	Si	BNI	M	In cooperation with the FWS, review and implement Minimum Impact Suppression Techniques (MIST) to minimize impacts of suppression activities to SDT habitat.	Avoid or minimize potential for adverse impacts caused by fire suppression activities.	Coordinated with FWS, updated MIST being implemented.	MIST implemented.
	BLM	VS/L	F/I/H	L	Si	BNI	M	Work with partners (AIDTT, local volunteers and organizations) to control or eradicate invasive plant species, especially buffelgrass.	Minimize potential for large or repeat fires in SDT habitat.	Decrease in buffelgrass.	Summary of invasive species control efforts.
	BLM	VS/L	F/I/H	L	Si	BNI	M	Inventory and map invasive plant infestations and prioritize treatments in SDT habitat.	Minimize potential for large or repeat fires in SDT habitat.	Treatments prioritized and implemented.	Acres treated, maps updated.
	Reclamation	-	-	-	-	-	-	Immediately suppress wildfires in Sonoran desertscrub vegetative communities.	Minimize SDT habitat impacts associated with wild fires.	Average fire size reduced.	Summary of annual fire reports (number and size of fires in SDT habitat).
	Reclamation	-	-	-	-	-	-	Maintain an MOU with BLM for wildfire suppression on Reclamation administered lands.	Reduce SDT mortality due to fire.	Decreased number and size of desert wild fires.	Annual fire summary.
	Reclamation	-	-	-	-	-	-	In cooperation with BLM and FWS, review and implement Minimum Impact Suppression Techniques (MIST) to minimize impacts of suppression activities to SDT habitat.	Avoid or minimize potential for adverse impacts caused by fire suppression activities.	Coordinated with BLM and FWS; updated MIST being implemented.	MIST implemented.

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	Reclamation	-	-	-	-	-	-	Work with partners (AIDTT, local volunteers and organizations) to control or eradicate invasive plant species, especially buffelgrass.	Minimize potential for large or repeat fires in SDT habitat.	Decrease in buffelgrass.	Summary of invasive species control efforts.
	Reclamation	-	-	-	-	-	-	Inventory and map invasive plant infestations and prioritize treatments in SDT habitat.	Minimize potential for large or repeat fires in SDT habitat.	Treatments prioritized and implemented.	Acres treated, maps updated.
	BWRNWR	S/L	F	L	Sm	BNI	L	Immediately suppress wildfires in Sonoran desert scrub vegetative communities.	Minimize SDT habitat impacts associated with wild fires.	Average fire size reduced.	Number and size of fires in SDT habitat.
	CPNWR	S/L	F	L	Sm	BNI	L	Immediately suppress wildfires in Sonoran desert scrub vegetative communities.	Minimize SDT habitat impacts associated with wild fires.	Average fire size reduced.	Number and size of fires in SDT habitat.
	CPNWR	S/L	F	L	Sm	BNI	L	Work with partners (LAFB, MCAS, NPS, FWS Inventory and Monitoring, BLM, etc.) to control or eradicate invasive plant species especially buffelgrass.	Minimize potential for large or repeat fires in SDT habitat.	Decrease in buffelgrass.	Summary of invasive species control efforts.
	CPNWR	S/L	F	L	Sm	BNI	L	Inventory and map invasive plant infestations and prioritize treatments in SDT habitat.	Minimize potential for large or repeat fires in SDT habitat.	Treatments prioritized and implemented.	Acres treated, maps updated.
	HNWR	S/L	F	L	Sm	BNI	L	Immediately suppress wildfires in Sonoran desertscrub vegetative communities.	Minimize SDT habitat impacts associated with wild fires.	Average fire size reduced.	Number and size of fires in SDT habitat.
	HNWR	S/L	F	L	Sm	BNI	L	Inventory and map invasive plant infestations and prioritize treatments in SDT habitat.	Minimize potential for large or repeat fires in SDT habitat.	Treatments prioritized and implemented.	Acres treated, maps updated.

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STRESSOR[1]	Cooperator	Scope[2]	Immediacy[3]	Intensity[4]	Exposure[5]	Response[6]	Overall Threat Level[7]	CONSERVATION MEASURES	CONSERVATION BENEFITS	MEASURE OF SUCCESS	ANNUAL REPORTING METRIC
	INWR	Sm/L	F/I/H	L	Sm	BNI	L	Work with partners to control or eradicate invasive plant species in refuge uplands.	Minimize potential for establishment of nonnative plant populations and large or repeat fires in SDT habitat.	Minimal populations of nonnative plant species in refuge uplands.	Summary of any nonnative plant populations located and treated.
	INWR	Sm/L	F/I/H	L	Sm	BNI	L	Inventory, map, and monitor invasive plant infestations and prioritize treatments in SDT habitat.	Minimize potential for establishment of nonnative plant populations and large or repeat fires in SDT habitat.	Minimal populations of nonnative plant species in refuge uplands.	Summary of any nonnative plant populations located and treated.
	INWR	Sm/L	F/I/H	L	Sm	BNI	L	Suppress wildfires in refuge uplands using Minimum Impact Suppression Techniques (MIST) and minimum tools in wilderness.	Minimize SDT habitat impacts associated with wild fires.	Average fire size reduced or fires eliminated.	MIST/minimum tool use implemented.
	KNWR	I/Sm/L	F/I	L	I/Sm	BNI	L	Work with partners to control or eradicate nonnative invasive plant species in refuge uplands.	Minimize potential for establishment of nonnative plant populations and large or repeat fires in SDT habitat.	Minimal populations of nonnative plant species in refuge uplands.	Summary of any nonnative plant populations located and treated.
	KNWR	I/Sm/L	F/I	L	I/Sm	BNI	L	Suppress wildfires in refuge uplands using Minimum Impact Suppression Techniques (MIST) and minimum tools in wilderness.	Minimize SDT habitat impacts associated with wild fires.	Average fire size reduced or fires eliminated.	MIST/minimum tool use implemented.
	OPCNM	Sm	I	L	Sm	BNI	L	Continue implementing exotic plant management program.	Minimize impacts of exotic species.	Acres treated and/or controlled.	Acres reported to Government Results and Performance Act.
	SNP	VS/L	F/I/H	M	M	BNI/S	H	Immediately suppress wildfires in Sonoran desertscrub communities.	Reduce SDT mortality due to fire.	Decreased number and size of desert wild fires.	Annual fire summary.

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STRESSOR[1]	Cooperator	Scope[2]	Immediacy[3]	Intensity[4]	Exposure[5]	Response[6]	Overall Threat Level[7]	CONSERVATION MEASURES	CONSERVATION BENEFITS	MEASURE OF SUCCESS	ANNUAL REPORTING METRIC
	SNP	VS/L	F/I/H	M	M	BNI/S	H	Aggressively treat invasive perennial grasses (buffelgrass) using combination of hand, chemical, and aerial treatment.	Restore native food plants and reduce risk of mortality of SDT due to fire.	Decrease in buffelgrass.	Annual summary of treatments and monitoring results.
	SNP	VS/L	F/I/H	M	M	BNI/S	H	Inventory and map invasive plant infestation and prioritize treatments in SDT habitat.	Restore native food plants and reduce risk of mortality of SDT due to fire.	Decrease in buffelgrass in prime SDT habitat.	Annual summary of treatments and monitoring results.
	AZARNG	Sm	F/I	L	I	BNI	L	Treat invasive plants including buffelgrass within identified and mapped patches. Survey, map, and remove reemergents in subsequent years.	Minimize potential adverse impacts to SDT habitat associated invasive species and wildfire.	Reduce invasive plant abundance and reduce establishment and colonization of future infestations.	Summary of the status of invasive species.
	AZARNG	Sm	F/I	L	I	BNI	L	Continue scheduled maintenance activities within firing ranges and along roadways.	Minimize potential adverse impacts to SDT habitat associated invasive species and wildfire.	Reduction in the number of wildfires and area infested.	Number of wildfires.
	LAFB	Sm/L	F/I/H	L	I	BNI	L	Immediately identify and monitor wildfires in Sonoran desertscrub vegetation communities and implement control measures when warranted.	Minimize SDT habitat impacts associated with wild fires.	Average fire size reduced.	Number of wildfires by ignition source.
	LAFB	Sm/L	F/I/H	L	I	BNI	L	Implement recreational and training fire restrictions when conditions warrant it.	Reduce fire risk and preserve habitats.	Reduced number of fires.	Number of fire restriction days.
	LAFB	Sm/L	F/I/H	L	I	BNI	L	Inventory and map invasive plant infestations to prioritize treatments in SDT habitat.	Reduce fire risk and preserve habitats.	Document invasive plant populations stands.	Summary of invasive species control efforts.

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STRESSOR[1]	Cooperator	Scope[2]	Immediacy[3]	Intensity[4]	Exposure[5]	Response[6]	Overall Threat Level[7]	CONSERVATION MEASURES	CONSERVATION BENEFITS	MEASURE OF SUCCESS	ANNUAL REPORTING METRIC
	LAFB	Sm/L	F/I/H	L	I	BNI	L	Implement invasive plant eradication efforts for species with potential to alter vegetation communities and increase fire potentials (e.g. buffelgrass, fountain grass and Sahara mustard).	Reduce fire risk and preserve habitats.	Reduction or eradication of invasive weed populations.	Summary of invasive species control efforts.
	MCAS Yuma	Sm/L	F/I/H	L	Sm	BNI	L	Map, monitor and control invasive vegetation with potential to alter vegetation communities and increase fire potentials in accordance with BMGR INRMP.	Reduces risk of habitat impacts associated with wildfires. Reduces risk of native forage displacement.	Reduced invasive species occurrence / distribution.	Summary of the status of invasive species.
	YPG	VS/L	F/I/H	L	Si	BNI	M	Suppress all wildfires on YPG as safety allows.	Minimize habitat impact associated with wildfires and the related spread of fire adapted invasive species.	Fire size reduced.	Summary of annual fire reports.
	YPG	VS/L	F/I/H	L	Si	BNI	M	Coordinate with partner agencies and maintain mutual aid agreements.	Increase effectiveness of fire suppression.	Fewer and smaller fires.	Number and size of fires in SDT habitat.
	YPG	VS/L	F/I/H	L	Si	BNI	M	Control or eradicate buffelgrass in accordance with YPG weed management plan.	Minimize potential for large or repeat fires in SDT habitat.	Decrease in buffelgrass.	Summary of invasive control efforts.
	YPG	VS/L	F/I/H	L	Si	BNI	M	Inventory and map invasive plant infestations.	Minimize potential for large or repeat fires in SDT habitat.	New treatment areas identified and prioritized.	Summary of invasive control efforts.

Appendix A: Stressor/Conservation Measure Matrix

STRESSOR[1]	Cooperator	Scope[2]	Immediacy[3]	Intensity[4]	Exposure[5]	Response[6]	Overall Threat Level[7]	CONSERVATION MEASURES	CONSERVATION BENEFITS	MEASURE OF SUCCESS	ANNUAL REPORTING METRIC
	CNF	Si/L	H/I/F	M	Sm	C	M	Suppress or eradicate buffelgrass on 1,000 to 1,500 acres of Sonoran Desert every year using herbicides and manual methods.	Minimize unwanted impacts to SDT habitat associated with invasive plant species, wildfire, and altered habitat condition.	Total acres of invasive plants species present and total acres burned in SDT habitat reduced from recent fires in same or similar vegetation type.	Acres invasive plant species removed or burned in SDT habitat or current distribution.
	CNF	Si/L	H/I/F	M	Sm	C	M	Include and implement measures to eradicate or limit the spread of buffelgrass during or following Ground-disturbing activities.	Projects in SDT habitat would incorporate design features to alleviate or eliminate impacts to SDT from this stressor.	Projects in SDT habitat include design features for SDT habitat needs.	Projects in SDT habitat & Design features for SDT.
	CNF	Si/L	H/I/F	M	Sm	C	M	Wildland fire (planned or unplanned ignitions) should not be used as a management activity in desert communities, except as a strategy to control invasive vegetation.	Minimize unwanted impacts to SDT habitat associated with wildfire and altered habitat condition.	Total acres burned in SDT habitat reduced from recent fires in same or similar vegetation type.	Acres invasive plant species removed or burned in SDT habitat or current distribution.
	CNF	Si/L	H/I/F	M	Sm	C	M	Nonnative species shall not be introduced into any wilderness area. Only native plant species or short-lived, non-persistent nonnative species should be used for mine reclamation or burned area treatments.	Minimize unwanted impacts to SDT habitat associated with wildfire and altered habitat condition.	Total acres of invasive plants species present and/or total acres burned in SDT habitat reduced from recent fires in same or similar vegetation type.	Acres invasive plant species removed or burned in SDT habitat or current distribution.
	CNF	Si/L	H/I/F	M	Sm	C	M	Plant reintroductions shall only occur when a species is determined to be indigenous to the area and when it was extirpated by human-induced events.	Minimize impacts to SDT habitat associated with wildfire and altered habitat condition.	Total acres of invasive plants species present acres burned in SDT habitat reduced.	Acres invasive plant species removed or burned in SDT habitat or current distribution.

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STRESSOR[1]	Cooperator	Scope[2]	Immediacy[3]	Intensity[4]	Exposure[5]	Response[6]	Overall Threat Level[7]	CONSERVATION MEASURES	CONSERVATION BENEFITS	MEASURE OF SUCCESS	ANNUAL REPORTING METRIC
	CNF	Si/L	H/I/F	M	Sm	C	M	Nonnative species should not be introduced into areas adjacent to wilderness areas when it is likely that individuals of that species will spread to wilderness areas during ordinary life processes.	Minimize unwanted impacts to SDT habitat associated with wildfire and altered habitat condition.	Total acres of invasive plants species present and/or total acres burned in SDT habitat reduced from recent fires in same or similar vegetation type.	Acres invasive plant species removed or burned in SDT habitat or current distribution.
	CNF	Si/L	H/I/F	M	Sm	C	M	Annually, treat 200 to 1,000 acres of exotic invasive grass populations (primarily buffelgrass and fountain grass) on the southwest slopes of the Pusch Ridge Wilderness.	Minimize unwanted impacts to SDT habitat associated with wildfire and altered habitat condition.	Total acres of invasive plants species present and/or total acres burned in SDT habitat reduced from recent fires in same or similar vegetation type.	Acres invasive plant species removed or burned in SDT habitat or current distribution.
	CNF	Si/L	H/I/F	M	Sm	C	M	Avoid actions which may cause a species to become threatened or endangered.	FS actions in SDT habitat include design features to meet SDT needs.	Projects with SDT design features do not have negative impacts on SDT or their habitats.	SDT habitat maintained or improved.
	CNF	Si/L	H/I/F	M	Sm	C	M	Design projects in SDT habitat that will meet life history needs of SDT.	FS actions in SDT habitat include design features to meet SDT needs.	Maintained or improved SDT habitat on the CNF.	SDT habitat maintained or improved.

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STRESSOR[1]	Cooperator	Scope[2]	Immediacy[3]	Intensity[4]	Exposure[5]	Response[6]	Overall Threat Level[7]	CONSERVATION MEASURES	CONSERVATION BENEFITS	MEASURE OF SUCCESS	ANNUAL REPORTING METRIC
	CNF	Si/L	H/I/F	M	Sm	C	M	Review programs and activities as part of the NEPA process; analyze potential effect on sensitive species and avoid or minimize impacts to species whose viability has been identified as a concern; establish management objectives in cooperation with the states when projects have a significant effect on sensitive species; and establish objectives for federal candidate species, in cooperation with the FWS and the states.	Coordinate with AGFD and FWS to implement the most current and relevant SDT management strategies and approaches.	Maintained or improved SDT habitat on CNF.	SDT habitat maintained or improved.
	PNF	S/L	H/I/F	M	Sm	C	M	Within the PNVT called Desert Communities, fire shall not be used as a tool for management; and all fires will be suppressed, as per Forest Plan component Std -Wildland Fire 2.	Minimize unwanted impacts to SDT habitat associated with wildfire and altered habitat condition.	Total acres burned in SDT habitat reduced from recent fires in same or similar vegetation type.	Acres burned in SDT habitat or current distribution.
	PNF	S/L	H/I/F	M	Sm	C	M	Design features and mitigation measures should be incorporated in all Forest Service projects as needed to ensure that Southwestern Region sensitive species do not trend toward listing as threatened or endangered species, as per Forest Plan component Guide -Wildlife 2.	Projects in SDT habitat would incorporate design features to alleviate or eliminate impacts to SDT from this stressor.	Projects in SDT habitat include design features for SDT habitat needs.	Projects in SDT habitat & Design features for SDT.

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STRESSOR[1]	Cooperator	Scope[2]	Immediacy[3]	Intensity[4]	Exposure[5]	Response[6]	Overall Threat Level[7]	CONSERVATION MEASURES	CONSERVATION BENEFITS	MEASURE OF SUCCESS	ANNUAL REPORTING METRIC
	PNF	S/L	H/I/F	M	Sm	C	M	DC-Ecosystem Resilience -1 • Ecological conditions for habitat quality, distribution, and abundance contribute to self-sustaining populations of terrestrial and aquatic plants and animals. Conditions provide for the life history, distribution, and natural population fluctuations of the species within the capability of the ecosystem. • Contiguous blocks of habitat are interconnected, support a wide array of native species, and allow for genetic and behavioral interactions.	Projects in SDT habitat would be designed to provide for life history needs of SDT.	SDT populations where there is appropriate habitat to support them.	Occurrence of SDT on PNF.
	PNF	S/L	H/I/F	M	Sm	C	M	Forest Plan Component: DC-Veg-22 (Desert Communities) • The Desert Communities PNVT is comprised of cacti, succulents, trees, and shrubs with variable vegetation cover ranging from 1 to 20 percent of the dominate overstory plants. Grass cover is inherently low. Nonnative grass species coverage is controlled. • Dominant plants include giant saguaro, paloverde trees, cholla and prickly pear cacti, ocotillo, velvet mesquite, catclaw acacia, and jojoba. • Natural disturbances are infrequent from drought, frost, and wind. Fire is very rare or absent. • Damage to vegetation composition, density, and structure from human-caused fires is infrequent and limited in duration and extent.	Restoring the native desert vegetation toward desired conditions would meet SDT habitat needs.	Reduced incidence of wildfire in SDT habitat.	Annual and cumulative fire history report for this vegetation type.

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STRESSOR[1]	Cooperator	Scope[2]	Immediacy[3]	Intensity[4]	Exposure[5]	Response[6]	Overall Threat Level[7]	CONSERVATION MEASURES	CONSERVATION BENEFITS	MEASURE OF SUCCESS	ANNUAL REPORTING METRIC
	PNF	S/L	H/I/F	M	Sm	C	M	Forest Plan Component: DC-Wildlife-1 - Habitats that support populations of Southwestern Region sensitive species provide the ecological conditions that facilitate the life history, distribution, and natural population fluctuations of the species within the capability of the ecosystem.	Maintain or move the vegetation toward desired conditions for SDT habitat needs.	Improved habitat quality for SDT	
	PNF	S/L	H/I/F	M	Sm	C	M	Avoid actions which may cause a species to become threatened or endangered, as per FSM-2670.12.	FS actions in SDT habitat include design features to meet SDT needs.	Projects with SDT design features do not have negative impacts on SDT or their habitats.	SDT habitat maintained or improved.
	PNF	S/L	H/I/F	M	Sm	C	M	FSM-2670.22 - 1. Develop and implement management practices to ensure that species do not become threatened or endangered because of Forest Service actions. 2. Maintain viable populations of all native and desired nonnative wildlife, fish, and plant species in habitats distributed throughout their geographic range on National Forest System lands. 3. Develop and implement management objectives for populations and/or habitat of sensitive species.	FS actions in SDT habitat include design features to meet SDT needs.	Maintained or improved SDT habitat on the PNF.	SDT habitat maintained or improved.

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STRESSOR[1]	Cooperator	Scope[2]	Immediacy[3]	Intensity[4]	Exposure[5]	Response[6]	Overall Threat Level[7]	CONSERVATION MEASURES	CONSERVATION BENEFITS	MEASURE OF SUCCESS	ANNUAL REPORTING METRIC
	PNF	S/L	H/I/F	M	Sm	C	M	FSM-2670.32 -1. Assist states in achieving their goals for conservation of endemic species. 2. Review programs and activities as part of the NEPA of 1969 process through a biological evaluation, to determine their potential effect on sensitive species. 3. Avoid or minimize impacts to species whose viability has been identified as a concern. 4. Analyze, if impacts cannot be avoided, the significance of potential adverse effects on the population or its habitat within the area of concern and on the species as a whole. (The line officer, with project approval authority, makes the decision to allow or disallow impact, but the decision must not result in loss of species viability or create significant trends toward federal listing.) 5. Establish management objectives in cooperation with the states when projects on National Forest System lands may have a significant effect on sensitive species population numbers or distributions. Establish objectives for federal candidate species, in cooperation with the FWS or NOAA Fisheries and the states.	Coordinate with AGFD and FWS to implement the most current and relevant SDT management strategies and approaches.	Maintained or improved SDT habitat on PNF.	SDT habitat maintained or improved.
	TNF	Si	I	M	M	S	M	Inventory and map invasive plant infestations and prioritize treatments in SDT habitat.	Minimize potential for large or repeat fires in SDT habitat.	Average fire size and frequency. reduced.	Summary of invasive species control efforts.

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STRESSOR[1]	Cooperator	Scope[2]	Immediacy[3]	Intensity[4]	Exposure[5]	Response[6]	Overall Threat Level[7]	CONSERVATION MEASURES	CONSERVATION BENEFITS	MEASURE OF SUCCESS	ANNUAL REPORTING METRIC
	TNF	Si	I	M	M	S	H	Work with partners (AIDTT, local volunteers and organizations) to control or eradicate invasive plant species, especially buffelgrass.	Minimize potential for large or repeat fires in SDT habitat.	Average fire size and frequency. reduced.	Acres of weeds treated.
	NRCS	-	-	-	-	-	-	Work with partners (AIDTT, local volunteers and organizations) to control or eradicate invasive plant species, especially buffelgrass.	Minimize potential for large or repeat fires in SDT habitat.	Decrease in buffelgrass.	Summary of invasive species control efforts.
	NRCS	-	-	-	-	-	-	Inventory and map invasive plant infestations and prioritize treatments in SDT habitat.	Minimize potential for large or repeat fires in SDT habitat.	Treatments prioritized and implemented.	Acres treated, maps updated.
	NRCS	-	-	-	-	-	-	Work with landowners to implement prescribed grazing to increase native species success and competition with invasive species.	Improved forage for SDT and decreased potential for invasive species.	Range monitoring shows improvement in range health.	Acres planned of prescribed grazing in SDT habitat. Specific locations not
	ADOT	-	-	-	-	-	-	Maintain ADOT ROW to minimize invasive species and fire risks as funding allows.	Minimize potential for large or repeat fires in SDT habitat.	Decrease in presence of invasive species within SDT habitat.	Summary of invasive species control efforts.
	ADOT	-	-	-	-	-	-	Share maps of invasive species on ADOT ROW in SDT habitat with land managing agencies.	Minimize potential for large or repeat fires in SDT habitat.	Prioritize treatment areas for partnering efforts.	Summary of invasive species control efforts.
	ADOT	-	-	-	-	-	-	Partner with state and federal agencies to address invasive species in and adjacent to ADOT ROW in SDT habitat.	Minimize potential for large or repeat fires in SDT habitat.	Prioritize treatment areas for partnering efforts.	Summary of invasive species control efforts.
	AGFD	-	-	-	-	-	-	Outreach on the iMapInvasives App through presentations, media advisories, and website to encourage partners and citizen scientists to document observations of infestations or individual plants within SDT habitat.	Inform management of trends and increase public awareness.	Increase knowledge of distribution.	Updated maps, number of media advisories and resulting coverage; number of observations.

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STRESSOR[1]	Cooperator	Scope[2]	Immediacy[3]	Intensity[4]	Exposure[5]	Response[6]	Overall Threat Level[7]	CONSERVATION MEASURES	CONSERVATION BENEFITS	MEASURE OF SUCCESS	ANNUAL REPORTING METRIC
	AGFD	-	-	-	-	-	-	Record presence/absence of invasive nonnative plant species during routine monitoring efforts and record data in iMapInvasives App. Or to Southern Arizona Buffelgrass Coordination Center (www.buffelgrass.org).	Inform management of trends.	Increase knowledge of distribution.	Updated maps, number of media advisories and resulting coverage; number of observations.
	AGFD	VS/L	F/I/H	L	Si	BNI	M	Enforce Hot Works policy (D4.9) during all Department activities.	Avoid SDT habitat impacts associated with wild fires.	No AGFD caused fires in SDT habitat.	Number of AGFD caused of fires in SDT habitat.
A.2. Loss of habitat through large scale urban development that leads to cities and counties expansion may disrupt natural movement between suitable habitat patches.	BLM	I/L	F	L	I	BNI	L	Designate for retention all lands containing occupied SDT habitat unless it is clearly in the public interest to dispose of those lands. Prioritize high quality SDT habitat for acquisition, as opportunities arise.	Maintain habitat and improve manageability.	Acres of available habitat maintained or increasing.	Summary of land tenure actions.
	Reclamation	-	-	-	-	-	-	Designate for retention all lands containing occupied SDT habitat unless it is clearly in the public interest to dispose of those lands. Prioritize high quality SDT habitat for acquisition, as opportunities arise.	Maintain habitat and improve manageability.	Acres of available habitat maintained or increasing.	Summary of land tenure actions.
	BWRNWR	I/L	F	L	I	BNI	L	Currently program underway to secure adjacent private land by AGFD and by the refuge.	Avoid or minimize potential for adverse impacts caused by development.	Impacts mitigated.	
	HNWR	I/L	F	L	I	BNI	L	Limit development adjacent to HNWR by engagement with zoning process.	Avoid or minimize potential for adverse impacts caused by development.	Impacts mitigated.	

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	OPCNM	I	F	L	I	BNI	L	Any new infrastructure development will be subject to environmental review.	Minimize and potential impact to SDT habitat.	Acres of available habitat or mitigation measures.	Number of new developments.
	YPG	I/L	F	L	I	BNI	L	Retain all lands on YPG for Military use purposes.	Maintain habitat in a natural environment.	Acres of available habitat.	Summary of land tenure actions.
	TNF	Sm	F	L	Sm	BNI	L	Map SDT habitat analysis.	Inform management	Acres of available habitat maintained or increasing.	Develop map if new information is obtained.
	AGFD	I/L	F	L	I	BNI	L	Meet the objectives of NEPA on any project or program that may have an effect on the environment; use the EAC process to identify issues and evaluate effects associated with a project or program (see Policy I2.2).	Avoid or minimize potential for adverse impacts and avoid habitat fragmentation.	All relevant planning documents address SDT conservation priorities.	Number of project applications reviewed.
A.3 Loss of habitat through large scale development and renewable energy may disrupt natural movement between suitable habitat patches.	BLM	I/L	F	L	I	BNI	L	Ensure SDT conservation allocations, objectives and management decisions to maintain or restore habitat connectivity are incorporated into planning documents during revision or amendment.	Avoid or minimize potential for adverse impacts and avoid habitat fragmentation.	All planning documents address SDT conservation priorities.	Plans finalized, summary of decisions included.
	BLM	I/L	F	L	I	BNI	L	Through the NEPA process, ensure permitted activities conform to SDT management objectives contained in land use plans.	Avoid or minimize potential for adverse impacts and avoid habitat fragmentation.	Conformance documented.	Number of project applications reviewed.

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STRESSOR[1]	Cooperator	Scope[2]	Immediacy[3]	Intensity[4]	Exposure[5]	Response[6]	Overall Threat Level[7]	CONSERVATION MEASURES	CONSERVATION BENEFITS	MEASURE OF SUCCESS	ANNUAL REPORTING METRIC
	BLM	I/L	F	L	I	BNI	L	Review all permitting activities on a case-by-case basis to determine associated impacts to SDT and implement measures to avoid, minimize or mitigate impacts to achieve SDT population and habitat objectives described in land use plans.	Avoid or minimize potential for adverse impacts caused by development.	Impacts mitigated.	Number of project applications reviewed.
	BLM	I/L	F	L	I	BNI	L	Work with project applicants to minimize potential impacts to sensitive wildlife species and habitat loss and incorporate design features, mitigation and stipulations into authorizations that restore or maintain habitat connectivity.	Avoid or minimize potential for adverse impacts caused by development.	Impacts mitigated.	Number of project applications reviewed.
	Reclamation	-	-	-	-	-	-	Work with project applicants to minimize potential impacts to sensitive wildlife species and habitat loss and incorporate design features, mitigation and stipulations into authorizations that restore or maintain habitat connectivity.	Avoid or minimize potential for adverse impacts caused by development.	Impacts mitigated.	Number of project applications reviewed.
	BWRNWR	I/L	F	L	I	BNI	L	Prohibit large scale development and renewable energy on BWRNWR.	Avoid new impacts; increase suitable habitat.	No large scale energy development.	N/A
	HNWR	I/L	F	L	I	BNI	L	Prohibit large scale development and renewable energy on HNWR.	Avoid new impacts; increase suitable habitat.	No large scale energy development.	N/A
	OPCNM	I	F	L	I	BNI	L	Any new infrastructure development will be subject to environmental review.	Minimize any potential impact to habitat.	acres of available habitat or mitigation measures.	Number of new developments.
	OPCNM	I	F	L	I	BNI	L	Large scale development is mostly prohibited in ORPI.	No loss of habitat.	N/A	N/A

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	OPCNM	I	F	L	I	BNI	L	Prohibit commercial renewable energy development.	No loss of habitat.	N/A	N/A
	LAFB	Sm/L	F	L	I	BNI	L	Ensure SDT conservation allocation objectives and management decisions to maintain or restore habitat connectivity are incorporated into planning documents.	Avoid or minimize potential for adverse impacts and avoid habitat fragmentation.	All planning documents address SDT conservation priorities.	Plans finalized, summary of decisions included.
	LAFB	Sm/L	F	L	I	BNI	L	Ensure NEPA review process incorporates SDT management goals.	Avoid or minimize potential for adverse impacts and avoid habitat fragmentation.	All planning documents address SDT conservation priorities.	Number of project applications reviewed that include evaluations of impact on SDT.
	LAFB	Sm/L	F	L	I	BNI	L	Work with applicants during project planning to ensure design minimizes SDT habitat disturbance and maintains connectivity.	Avoid or minimize potential for adverse impacts and avoid habitat fragmentation.	All planning documents address SDT conservation priorities.	None.
	YPG	I/L	F	L	I	BNI	L	Any plan to develop large scale renewable energy would include consideration of SDT as well as appropriate avoidance, minimization, and mitigation.	Avoid and minimize impacts to SDT and their habitat.	All planning efforts address SDT conservation priorities.	Summary of major construction or planning actions.
	PNF	I/L	F	L	I	BNI	L	Forest Plan Component: Guide-Lands-5 - Current USFWS and AGFD guidelines for wind and solar energy development should be considered for avoiding or minimizing impacts to wildlife. Wildlife movement corridors should be considered when energy sources and transmission lines are located.	FS actions in SDT habitat include design features to meet SDT needs.	Maintaining SDT habitat connectivity.	Projects in SDT habitat and any associated effects.

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	PNF	I/L	F	L	I	BNI	L	DC-Ecosystem Resilience -1 - Ecological conditions for habitat quality, distribution, and abundance contribute to self-sustaining populations of terrestrial and aquatic plants and animals. Conditions provide for the life history, distribution, and natural population fluctuations of the species within the capability of the ecosystem. Contiguous blocks of habitat are interconnected, support a wide array of native species, and allow for genetic and behavioral interactions.	Projects in SDT habitat would be designed to maintain habitat connectivity for SDT.	Where SDT have been documented, they continue to persist if a project is implemented.	Monitor SDT occurrence.
	PNF	I/L	F	L	I	BNI	L	Forest Plan Component: DC-Wildlife-1 - Habitats that support populations of Southwestern Region sensitive species provide the ecological conditions that facilitate the life history, distribution, and natural population fluctuations of the species within the capability of the ecosystem.	Projects in SDT habitat would be designed to maintain habitat connectivity for SDT.	Where SDT have been documented, they continue to persist if a project is implemented.	Monitor SDT occurrence.
	TNF	Sm	F	L	SM	BNI	L	Consider measures to maintain or restore habitat connectivity into planning documents during revision or amendment.	Avoid or minimize potential for adverse impacts and avoid habitat fragmentation.	All planning documents address minimizing habitat fragmentation.	Plans completed.
	TNF	Sm	F	L	SM	BNI	L	Through the NEPA process, evaluate impacts to SDT.	Maintain or improve SDT habitat.	Acres of productive habitat.	Acres of Terrestrial habitat improved.

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	AGFD	I/L	F	L	I	BNI	L	Coordinate the review of and monitoring other agencies' land and water development, management programs, or other actions/projects that may impact wildlife resources, and develop official Department position statements for these actions (see Policy I2.2)	Avoid or minimize potential for adverse impacts and avoid habitat fragmentation.	All relevant planning documents address SDT conservation priorities.	Number of project applications reviewed.
A.4. Loss or degradation of habitat through minerals extraction activities may reduce available habitat and disrupt natural movement between suitable habitat patches.	BLM	I/L	H	L	I	BNI	L	All mining plans of operations will be assessed for impacts to SDT habitat on a case-by-case basis.	Avoid or minimize potential for adverse impacts associated with mining and minerals extraction activities.	Impacts mitigated.	Number of mining plans reviewed.
	BLM	I/L	H	L	I	BNI	L	Adverse impacts to desert tortoise will be mitigated to the extent allowable in the 43 CFR 3809 regulations.	Avoid or minimize potential for adverse impacts associated with mining and minerals extraction activities.	Impacts mitigated.	Acres unmitigated or residual habitat loss.
	BLM	I/L	H	L	I	BNI	L	Salable mineral material permits will be prohibited in occupied SDT habitat unless it is clearly in the public interest to permit them.	Avoid or minimize potential for adverse impacts associated with mining and minerals extraction activities.	No net loss of habitat due to mineral material sales.	Acreage authorized and denied.
	Reclamation	S/L	F/I	L	Sm	BNI	L	All mining and quarry operations will be assessed on a case by case basis.	Required mitigation measures to avoid or reduce impacts to tortoises and their habitat.	Implementation of mitigation measures.	Mining and quarry plans that are reviewed.

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	BWRNWR	I/L	H	L	I	BNI	L	Prohibit new claims for mineral extraction on BWRNWR.	Avoid new impacts; increase suitable habitat	No mineral extraction.	N/A
	HNWR	I/L	H	L	I	BNI	L	Prohibit new claims for mineral extraction on HNWR.	Avoid new impacts; increase suitable habitat	No mineral extraction.	N/A
	INWR	I/L	H	L	I	BNI	L	Prohibit new claims for mineral extraction on INWR.	Avoid new impacts; increase suitable habitat.	No mineral extraction.	N/A
	KNWR	I/L	H	L	I	BNI	L	Prohibit new claims for mineral extraction on KNWR.	Avoid new impacts; increase suitable habitat.	No mineral extraction.	N/A
	OPCNM	I	H	L	I	BNI	L	Prohibit mineral extraction; restore habitat.	Avoid new impacts; increase suitable habitat.	Acres of available habitat.	Number of acres restored.
	LAFB	I	F	L	I	BNI	L	Prohibit mining and mineral extraction.	Minimize loss or degradation of SDT habitat.	No new mining leases.	N/A
	YPG	I/L	F/H/I	L	I	BNI	L	Use of borrow pits or other mineral materials on YPG would incorporate appropriate avoidance and minimization measures.	Avoid or minimize potential adverse impacts associated with mineral extraction.	Avoiding habitat by use of existing borrow pits or previously disturbed sites.	Number of new borrow pits authorized.
	CNF	Sm/L	F/I/H	M	Sm	BNI	L	Only native or nonpersistent seed and plant materials will be used when revegetating disturbed sites.	Minimize adverse impacts associated with mining and minerals extraction activities.	Impacts mitigated.	Acres unmitigated or residual habitat loss.
	CNF	Sm/L	F/I/H	M	Sm	BNI	L	Mining activities should incorporate reclamation measures that reduce contrasts with the surrounding landscapes.	Minimize adverse impacts associated with mining and minerals extraction activities.	Impacts mitigated.	Acres unmitigated or residual habitat loss.

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	CNF	Sm/L	F/I/H	M	Sm	BNI	L	Exploratory mining drill pads and temporary access roads should be reclaimed by recontouring topography and revegetating sites so they mimic adjacent landscapes after project completion to meet scenic integrity objectives.	Minimize adverse impacts associated with mining and minerals extraction activities.	Impacts mitigated.	Acres unmitigated or residual habitat loss.
	CNF	Sm/L	F/I/H	M	Sm	BNI	L	Mines and quarries should be reclaimed by shaping topography and vegetating sites so that they blend with adjacent landscapes unless doing so would cause greater resource impacts.	Minimize adverse impacts associated with mining and minerals extraction activities.	Impacts mitigated.	Acres unmitigated or residual habitat loss.
	CNF	Sm/L	F/I/H	M	Sm	BNI	L	Salable minerals extraction will not be allowed in Wilderness Areas and Wilderness Study Areas.	Avoid hazards to SDT associated with minerals extraction	SDT habitat maintained or improved.	Acres of SDT habitat maintained.
	CNF	Sm/L	F/I/H	M	Sm	BNI	L	Salable minerals extraction will not be allowed in Research Natural Areas, Botanical, Zoological, and Other Special Areas.	Avoid hazards to SDT associated with minerals extraction.	SDT habitat maintained or improved.	Acres of SDT habitat maintained.

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STRESSOR[1]	Cooperator	Scope[2]	Immediacy[3]	Intensity[4]	Exposure[5]	Response[6]	Overall Threat Level[7]	CONSERVATION MEASURES	CONSERVATION BENEFITS	MEASURE OF SUCCESS	ANNUAL REPORTING METRIC
	PNF	S/L	H/I/F	L	I	BNI	L	Forest Plan Component: Guide-Locatable Minerals -2: Given that the Forest Service function is the management and protection of surface resources in a manner compatible with reasonable and logical mining operations, the following should be included in plans of operations for locatable minerals: • Mitigation measures should be used for Southwestern Region sensitive species to minimize impacts to populations due to mineral exploration or extraction activity. • Closing and reclaiming abandoned mine lands should be given high priority.	Minerals projects would include design features to meet SDT needs	Maintained SDT habitat	Acres of SDT habitat maintained
	PNF	S/L	H/I/F	L	I	BNI	L	Forest Plan Component: Guide - Mineral Materials - 5: Occupied Southwestern Region sensitive species habitat should be avoided during development of new mineral material extraction sites. Heavy equipment use and material removal should not take place in occupied Southwestern Region sensitive species habitat within current or new permitted sandstone or dolomitic limestone quarries.	Minerals projects would include design features to meet SDT needs including avoiding occupied SDT habitat when developing new extraction sites.	Maintained SDT habitat.	Acres of SDT habitat maintained.

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	PNF	S/L	H/I/F	L	I	BNI	L	DC-Ecosystem Resilience -1 - Ecological conditions for habitat quality, distribution, and abundance contribute to self-sustaining populations of terrestrial and aquatic plants and animals. Conditions provide for the life history, distribution, and natural population fluctuations of the species within the capability of the ecosystem. Contiguous blocks of habitat are interconnected, support a wide array of native species, and allow for genetic and behavioral interactions.	Projects in SDT habitat would be designed to maintain habitat connectivity for SDT.	Where SDT have been documented, they continue to persist if a project is implemented.	Monitor SDT occurrence.
	PNF	S/L	H/I/F	L	I	BNI	L	Forest Plan Component: DC-Wildlife-1 - Habitats that support populations of Southwestern Region sensitive species provide the ecological conditions that facilitate the life history, distribution, and natural population fluctuations of the species within the capability of the ecosystem.	Projects in SDT habitat would be designed to maintain habitat connectivity for SDT.	Where SDT have been documented, they continue to persist if a project is implemented.	Monitor SDT occurrence.
	TNF	Sm	H	L	SM	BNI	L	All mining plans of operations will be assessed for impacts to wildlife habitat on a case-by-case basis.	Avoid or minimize potential for adverse impacts associated with mining and minerals extraction activities.	Impacts mitigated.	Acres of habitat improved.

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STRESSOR[1]	Cooperator	Scope[2]	Immediacy[3]	Intensity[4]	Exposure[5]	Response[6]	Overall Threat Level[7]	CONSERVATION MEASURES	CONSERVATION BENEFITS	MEASURE OF SUCCESS	ANNUAL REPORTING METRIC
	TNF	Sm	H	L	SM	BNI	L	Conduct mining operations in accordance with 36 CFR 228 regulations.	Avoid or minimize potential for adverse impacts associated with mining and minerals extraction activities.	Impacts mitigated.	Acres of habitat improved.
A.5. Entrapment in abandoned mine workings (shafts, adits, exploration pits) can kill individual SDT and may have some local sub-population effects.	BLM	I/L	H	L	I	C	L	Prioritize and target potential SDT hazards associated with abandoned mines for reclamation to eliminate potential entrapment.	Minimize hazards associated with abandoned mines.	Incidence of entrapment reduced.	Number of hazardous mine features reclaimed.
	HNWR	I/L	H	L	I	C	L	Prioritize and target potential SDT hazards associated with abandoned mines for reclamation to eliminate potential entrapment.	Minimize hazards associated with abandoned mines.	Incidence of entrapment reduced.	Number of hazardous mine features reclaimed.
	OPCNM	Sm	H/I	L	Sm	C	L	If funding is available, fill in abandoned mines in quality SDT habitat.	Minimize mortality.	Reduced mortality.	Summary from annual abandoned mine surveys. Opportunistic reports from staff.
	SNP	I	F/I/H	L	I	C	L	Mitigate AML sites to prevent tortoises from falling into shafts.	Prevent SDT mortality.	Number of AML sites mitigated.	Number of AML sites mitigated.
	LAFB	I	F	L	I	C	L	Cover or seal open mine pits, wells, and other hazardous excavations.	Minimize SDT mortalities.	Seal mine pits, wells, or other hazardous excavations.	Number of open pits covered or fenced.
	CNF	I/L	H/I/F	L	I	C	L	Prior to closing mine features and caves to public entry, conduct pre-closure inspections to determine if cave dependent or other species are present. Closures will be designed and implemented to address the needs of resident or historically occurring wildlife within the constraints of meeting public safety needs.	Minimize hazards associated with abandoned mines.	Incidence of entrapment reduced.	Number of hazardous mine features reclaimed.

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	TNF	Sm	H	L	SM	C	L	Active mining operation describe protection for wildlife within plans of operation. If a mine becomes abandoned or has been abandoned, clean up of site will be prioritized based on available funding.	Prevent impacts to wildlife while mine is operational and/or rehabilitate site once operations halt.	Preventing direct impact from current and abandoned mining operations.	Acres of AML lands rehabilitated.
	AGFD	Sm/L	H	L	Sm	BNI	L	Coordinate the review of and monitoring other agencies' land and water development, management programs, or other actions/projects that may impact wildlife resources, and develop official Department position statements for these actions (see Policy I2.2).	Avoid or minimize potential for adverse impacts and avoid habitat fragmentation.	All relevant planning documents address SDT conservation priorities.	Number of project applications reviewed.
	AGFD	I/L	H	L	I	C	L	Record presence/absence of open pits, wells, and other hazardous excavations during routine monitoring efforts.	Provide land management agency with information to inform their mine management plans.	Locations of open pits, wells, or other hazardous excavations documented.	Number of observations.
A.6. Landscape scale habitat fragmentation from new or existing roads and highways can disrupt natural movement between suitable habitat patches.	BLM	Sm/L	H	L	Sm	BNI	L	Review all permitted activities on a case-by-case basis to determine associated impacts to SDT and implement measures to avoid, minimize or mitigate impacts to achieve SDT population and habitat objectives described in land use plans.	Avoid or minimize potential for adverse impacts caused by development.	Impacts mitigated.	Number of project applications reviewed.
	BLM	Sm/L	H	L	Sm	BNI	L	Work with applicants to locate facilities so as to minimize potential impacts to sensitive wildlife species and habitat loss.	Avoid or minimize potential for adverse impacts caused by development.	Impacts mitigated.	Number of project applications reviewed.

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	BLM	Sm/L	H	L	Sm	BNI	L	Incorporate design features, mitigation and stipulations into ROW authorizations that restore or maintain habitat connectivity (e.g. fencing, culverts, underpasses) and minimize vehicle strike mortality.	Avoid or minimize potential for adverse impacts caused by development.	Impacts mitigated.	Number of project applications reviewed.
	Reclamation	Sm/L	F/I	L/ M	Sm	BNI	M	Incorporate mitigation actions such as construction and maintenance of tortoise fences and wildlife crossing structures.	Prevent vehicle strikes.	No reported or visual signs of mortality.	Number of hit tortoises.
	Reclamation	Sm/L	F/I	L/ M	Sm	BNI	M	Work with applicants to locate facilities so as to minimize potential impacts to sensitive wildlife species and habitat loss.	Avoid or minimize potential for adverse impacts caused by development.	Impacts mitigated.	Number of project applications reviewed.
	INWR	I/L	F/I/H	L	I	BNI	L	Work with county highway authorities to minimize impacts from existing roads.	Avoid or minimize potential for adverse impacts caused by road use.	Impacts mitigated.	TBD through AIDTT
	OPCNM	Sm	I	L	Sm	BNI	L	Work with other agencies to review any proposed alteration of major roads and highway networks.	Minimize any potential impact to habitat.	Number of impacts mitigated; change in road system miles/acres.	Summary of impacts mitigated.
	SNP	VS/L	F/I/H	M	Si	S	H	Reduce speed limits in park and leave some roads unpaved.	Protect existing SDT habitat and corridors, decrease mortality.	Miles of roads with lower speed limits and not paved.	Miles of road with lower speed limits; miles of unpaved roads.
	AZARNG	I	H/I/F	L	Sm	BNI	L	Review SDT movement patterns identified by current research and monitoring programs with AGFD at AZARNG installations and implement measures to avoid, minimize, or mitigate impacts.	Avoid or minimize potential impacts to SDT movement corridors.	Impacts avoided or minimized.	Review of research results and conservation measures as part of the annual INRMP review.

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	LAFB	I	I//F	L	I	BNI	L	Restrict new road construction to those which are mission essential.	Minimize SDT mortalities and maximize unrestricted movement.	Impacts mitigated.	Number of miles of new road.
	LAFB	I	I//F	L	I	BNI	L	Consider high quality habitat when routing new roads.	Minimize SDT mortalities and maximize unrestricted movement.	Impacts mitigated.	None.
	LAFB	I	I//F	L	I	BNI	L	Incorporate design features to facilitate SDT movement (e.g. culverts, underpasses, etc.) for high volume, high speed new road construction in quality habitat.	Minimize SDT mortalities and maximize unrestricted movement.	Impacts mitigated.	None.
	MCAS Yuma	Sm/L	F/I/H	L	Sm	BNI	L	Through the NEPA process, evaluate potential effects of proposed ground-disturbing projects on SDT, habitat, and movement corridors. Implement measures as appropriate to avoid, minimize or mitigate impacts to SDT, habitat, and movement corridors.	Habitat fragmentation is reduced.	Negative impacts to existing movement corridors minimized; past corridors restored as appropriate.	Number of projects reviewed.
	MCAS Yuma	Sm/L	F/I/H	L	Sm	BNI	L	Evaluate roads during INRMP reviews/updates and close redundant and unnecessary roads as appropriate.	Habitat fragmentation is reduced.	Negative impacts to existing movement corridors minimized; past corridors	Miles of roads reviewed in SDT habitat.
	YPG	Sm/L	H	L	Sm	BNI	L	Review new proposals for roadways on a case-by-case basis and consider impacts to SDT. Implement measures as appropriate to avoid, minimize or mitigate impacts to SDT.	Avoid or minimize potential for adverse impacts caused by development.	Impacts mitigated.	Summary of major construction actions.

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	CNF	Sm/L	H/I/F	L	Sm	BNI	L	Cross-country travel should be discouraged to limit impacts to vegetation, soils, water, and wildlife.	SDT habitat needs for connectivity will be addressed in all FS actions.	SDT habitat maintained or improved.	Acres of SDT habitat maintained.
	CNF	Sm/L	H/I/F	L	Sm	BNI	L	Restrict motorized use to designated public use roads through enforcement and education.	ORV use should not be occurring.	Compliance with Forest Plan.	Evidence of off-road travel in known SDT habitat.
	CNF	Sm/L	H/I/F	L	Sm	BNI	L	New roads should be allowed only as needed to restore motorized public access to National Forest System land.	SDT habitat needs for connectivity will be considered and addressed in all FS actions.	SDT habitat maintained or improved.	Acres of SDT habitat maintained.
	CNF	Sm/L	H/I/F	L	Sm	BNI	L	New roads should not be constructed in Wilderness Areas & Wilderness Study Areas.	SDT habitat needs for connectivity will be considered and addressed in all FS actions.	SDT habitat maintained or improved.	Acres of SDT habitat maintained.
	CNF	Sm/L	H/I/F	L	Sm	BNI	L	The CNF has embarked on Travel Management planning, and the proposed action includes the decommissioning of unauthorized use-created routes in SDT habitat.	SDT habitat needs for connectivity would be considered and addressed in all FS actions.	SDT habitat maintained or improved.	Acres of SDT habitat maintained.
	PNF	I/L	H/I/F	L	I	BNI	L	Roads and trails should be designed to not impede terrestrial and aquatic wildlife species movement and habitat connectivity, as per Forest Plan component Guide -Trans -3	SDT habitat needs for connectivity would be considered and addressed in all FS actions.	SDT habitat maintained or improved.	Acres of SDT habitat maintained.

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	PNF	I/L	H/I/F	L	I	BNI	L	DC-Ecosystem Resilience -1 - Ecological conditions for habitat quality, distribution, and abundance contribute to self-sustaining populations of terrestrial and aquatic plants and animals. Conditions provide for the life history, distribution, and natural population fluctuations of the species within the capability of the ecosystem. Contiguous blocks of habitat are interconnected, support a wide array of native species, and allow for genetic and behavioral interactions.	Projects in SDT habitat would be designed to maintain habitat connectivity for SDT.	Where SDT have been documented, they continue to persist if a project is implemented.	Monitor SDT occurrence.
	PNF	I/L	H/I/F	L	I	BNI	L	Forest Plan Component: DC-Wildlife-1 - Habitats that support populations of Southwestern Region sensitive species provide the ecological conditions that facilitate the life history, distribution, and natural population fluctuations of the species within the capability of the ecosystem.	Projects in SDT habitat would be designed to maintain habitat connectivity for SDT.	Where SDT have been documented, they continue to persist if a project is implemented.	Monitor SDT occurrence.
	TNF	Si	H	M	M	BNI	L	Through the NEPA process, identify impacts to wildlife habitat and mitigate per objectives described in land use plans.	Avoid or minimize potential for adverse impacts caused by development.	Impacts mitigated.	Acres of terrestrial habitat improved.
	TNF	Si	H	M	M	BNI	L	Eliminate unneeded roads to ultimately reduce road density and potential impact to wildlife species and habitat loss.	Avoid or minimize potential for adverse impacts caused by development.	Impacts mitigated.	Miles of roads obliterated (w/i SDT habitat)

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	TNF	Si	H	M	M	BNI	L	Incorporate design features, mitigation and stipulations into ROW authorizations that restore or maintain habitat connectivity and minimize potential for vehicle strike mortality.	Avoid or minimize potential for adverse impacts caused by development.	Impacts mitigated.	Acres of terrestrial habitat improved
	ADOT	M/L	H/I/F	M	M	BNI	M	Promote awareness of the conservation status of SDT within ADOT (incorporate in trainings, post flyers in districts, ADOT blog post).	Promote proactive planning to avoid or minimize impacts from ADOT activities.	Impacts mitigated.	Number attending trainings.
	ADOT	M/L	H/I/F	M	M	BNI	M	Partner with AGFD and other partners to facilitate development of conservation approaches and research related to increasing road permeability for SDT.	Decrease fragmentation effects of roads through improved permeability.	Research developed and results shared.	Number of research proposals submitted, projects completed, and reports or publications.
	ADOT	M/L	H/I/F	M	M	BNI	M	Conduct habitat suitability surveys and analyze potential impacts for projects with a scope of work that could impact SDT habitat.	Avoid or minimize impacts to SDT from ADOT activities.	Impacts mitigated.	Number of projects with SDT mitigation included.
	ADOT	M/L	H/I/F	M	M	BNI	M	Coordinate and partner with State and Federal agencies and other interested parties to incorporate project design features where warranted to minimize SDT habitat fragmentation.	Avoid or minimize impacts to SDT from ADOT activities.	Impacts mitigated.	Number of projects with SDT mitigation included.
	AGFD	Sm/L	H	L	Sm	BNI	L	Monitor long-term population and habitat trends range-wide.	Long term monitoring will allow informed management decisions to adapt to changing conditions.	Stable SDT populations.	Monitoring results.

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	AGFD	Sm/L	H	L	Sm	BNI	L	Coordinate the review of and monitoring other agencies' land and water development, management programs, or other actions/projects that may impact wildlife resources, and develop official Department position statements for these actions (see Policy I2.2).	Avoid or minimize potential for adverse impacts and avoid habitat fragmentation.	All relevant planning documents address SDT conservation priorities.	Number of project applications reviewed.
	AGFD	Sm/L	H	L	Sm	BNI	L	Work with partners to seek funding to study the effectiveness of fencing and crossing structures for desert tortoises along Arizona highways as necessary to maintain habitat connectivity (e.g., fencing, culverts, underpasses), and to minimize vehicle strike mortality.	Inform management of current or potential impacts.	No increase in habitat fragmentation.	Research results.
	AGFD	Sm/L	H	L	Sm	BNI	L	Enforce regulations (see ARS Sec. 28-1174 and Sec. 17-454).	Reduce ORV related impacts.	Low incidence of citation.	Number of Law Enforcement actions.
A.7. Increased mortality due to road-bound traffic on heavily traveled roads and highways may have some local sub-population effects.	BLM	Sm/L	I/H	L	Sm	C	L	Work with ROW holders to install or modify fencing to preclude SDT access to roadways, where practicable.	Minimize mortality associated with vehicle strikes.	Observed or reported vehicle strikes reduced.	Number of observed or reported vehicle strikes.
	Reclamation	Sm/L	F/I	L	Sm	C	L	Work with ROW holders to install or modify fencing to preclude SDT access to roadways, where practicable.	Minimize mortality associated with vehicle strikes.	Observed or reported vehicle strikes reduced.	Number of observed or reported vehicle strikes.
	BWRNWR	I/L	F/I/H	L	I	C	L	Enforce road regulations and speed limits on the refuge.	Minimize mortality associated with vehicle strikes.	Observed or reported vehicle strikes reduced.	Number of observed or reported vehicle strikes.
	HNWR	I/L	F/I/H	L	I	C	L	Enforce road regulations and speed limits on the refuge.	Minimize mortality associated with vehicle strikes.	Observed or reported vehicle strikes reduced.	Number of observed or reported vehicle strikes.

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	INWR	I/L	F/I/H	L	I	C	L	Enforce road regulations and speed limits on the refuge.	Minimize mortality associated with vehicle strikes.	Observed or reported vehicle strikes reduced.	Number of observed or reported vehicle strikes.
	KNWR	I/L	F/I/H	L	I	C	L	Enforce road regulations and speed limits on the refuge.	Minimize mortality associated with vehicle strikes.	Observed or reported vehicle strikes reduced.	Number of observed or reported vehicle strikes.
	OPCNM	Sm	I	L	Sm	C	L	Identify hot spots for highway mortality and investigate and implement potential solutions.	Minimize mortality.	Reduced mortality.	Number of observed or reported vehicle strikes.
	SNP	Si/L	F/I/H	M	Si	S	M	When opportunities arise, incorporate mitigations (crossings or fencing) on road projects to mitigate SDT roadkill.	Reduce road mortality of SDTs.	Number of mitigation structures or actions taken.	Number of mitigation structures or actions taken.
	AZARNG	I	H	L	I	C	L	Review SDT movement patterns identified by current research and monitoring programs with AGFD and implement measures to avoid or minimize potential impacts.	Avoid potential impacts from vehicle strikes.	Vehicle strikes avoided. No SDT mortality from vehicle strikes have been observed or reported on AZARNG lands.	Number of observed or reported vehicle strikes.
	LAFB	I	F	L	I	C	L	Enforce speed limits.	Minimize mortality resulting from vehicle strikes.	Reduced reported SDT mortality.	Number of observed or reported vehicle strikes.
	MCAS Yuma	I/L	I	L	Sm	C	L	Tortoises are protected due to standard range driving safety protocol; all vehicles (military and civilian) must not exceed a 25mph speed limit on BMGR West.	Risk of road mortality reduced.	Observed or reported vehicle strikes minimized.	Records kept at MCAS Yuma Range Management.

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	MCAS Yuma	I/L	I	L	Sm	C	L	MCAS Yuma currently employs 4 Conservation Law Enforcement Officers.	Active presence of enforcement staff on the BMGR helps to educate range users and ensure compliance with conservation laws, rules and regulations.	Number of field contacts maintained or increased.	Records kept at MCAS Yuma Range Management.
	YPG	I/L	I	L	Sm	C	L	Enforce speed limits on YPG roads.	Reduced mortality due to vehicle strikes.	Observed or reported vehicle strikes reduced.	Number of observed or reported vehicle strikes on tortoise.
	YPG	I/L	I	L	Sm	C	L	Educate YPG workforce on attentive driving and safety.	Reduced mortality due to vehicle strikes.	Observed or reported vehicle strikes reduced.	Number of observed or reported vehicle strikes on tortoise.
	YPG	I/L	I	L	Sm	C	L	Restrict vehicle use to existing roads or navigable washes	Reduced mortality due to vehicle strikes.	Observed or reported vehicle strikes reduced.	Number of observed or reported vehicle strikes on tortoise.
	PNF	I/L	F	L	Sm	C	L	DC-Ecosystem Resilience -1 - Ecological conditions for habitat quality, distribution, and abundance contribute to self-sustaining populations of terrestrial and aquatic plants and animals. Conditions provide for the life history, distribution, and natural population fluctuations of the species within the capability of the ecosystem. Contiguous blocks of habitat are interconnected, support a wide array of native species, and allow for genetic and behavioral interactions.	Projects in SDT habitat would be designed to maintain habitat connectivity for SDT.	Where SDT have been documented, they continue to persist if a project is implemented.	Monitor SDT occurrence.

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	PNF	I/L	F	L	Sm	C	L	Forest Plan Component: DC-Wildlife-1 - Habitats that support populations of Southwestern Region sensitive species provide the ecological conditions that facilitate the life history, distribution, and natural population fluctuations of the species within the capability of the ecosystem.	Projects in SDT habitat would be designed to maintain habitat connectivity for SDT.	Where SDT have been documented, they continue to persist if a project is implemented.	Monitor SDT occurrence.
	TNF	Si/L	H/I/F	M	M	C	L	Work with ROW applicants and other interested parties to install or modify fencing to preclude SDT access to roadways, where practicable and fiscally prudent.	Minimize mortality associated with vehicle strikes.	Observed or reported vehicle strikes reduced.	None.
	ADOT	-	-	-	-	-	-	Coordinate and partner with State and Federal agencies and other interested parties to incorporate project design features where warranted to minimize SDT vehicle strikes.	Avoid or minimize impacts to SDT from ADOT activities.	Impacts mitigated.	Number of projects with SDT mitigation included.
	AGFD	Sm/L	I/H	L	Sm	C	L	Work with partners to seek funding to study the effectiveness of fencing and crossing structures for desert tortoises along Arizona highways as necessary to maintain habitat connectivity (e.g., fencing, culverts, underpasses), and to minimize vehicle strike mortality.	Inform management and partners.	Crossing structures implemented.	Research results.
	AGFD	Sm/L	I/H	L	Sm	C	L	Investigate developing a mobile devise tool for simple and standardized wildlife collision data collection for use by AGFD personnel; if successful expand use to external partners.	Identify roads and highways with mortality due to vehicle strikes.	Observed or reported vehicle strikes.	Number and location of observations.

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A.8. Degradation of habitat through ORV use.	BLM	Sm/S	I	L	Sm	BNI	L	Restrict motorized use to designated roads and trails, through Travel Management Plans to be completed statewide by 2020.	Avoid or minimize potential for adverse impacts caused by ORV route designation.	All Travel Management Plans that include SDT habitat are complete.	Percent of SDT habitat covered by TMPs.
	BLM	Sm/S	I	L	Sm	BNI	L	Wildlife biologists will participate in the route designation process to ensure SDT impacts are considered when determining route status and mitigation needs.	Avoid or minimize potential for adverse impacts caused by ORV route designation.	Reduced miles of motorized routes in SDT habitat.	Number of miles of routes closed in SDT habitat.
	BLM	Sm/S	I	L	Sm	BNI	L	Routes that conflict with maintaining SDT habitat will be mitigated to achieve desired future condition. Mitigation will include, but not be limited to the following: route closure, seasonal restrictions, rerouting, vehicle type restrictions, speed restrictions, etc.	Avoid or minimize potential for adverse impacts caused by ORV route designation.	Reduced miles of motorized routes in SDT habitat.	Number of miles of routes closed in SDT habitat.
	BLM	Sm/S	I	L	Sm	BNI	L	Prohibit “rock crawling” permits and designated use areas in occupied SDT habitat.	Reduce ORV related impacts and restore SDT habitat values.	No increase in number of authorized "rock crawling" areas.	Number of authorized use areas.
	BLM	Sm/S	I	L	Sm	BNI	L	Prioritize ORV enforcement activities in SDT habitat.	Reduce ORV related impacts and restore SDT habitat values.	Incidence of unauthorized off-road use reduced.	Number of new routes detected in SDT habitat.
	BLM	Sm/S	I	L	Sm	BNI	L	Conduct public education to encourage users to avoid SDT and comply with regulations.	Reduce ORV related impacts and restore SDT habitat values.	Reduced miles of motorized routes in SDT habitat.	Number of attendees at public outreach efforts.

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	BLM	Sm/S	I	L	Sm	BNI	L	Routes within SDT habitat closed as a result of travel management planning will be physically closed and/or reclaimed to restore habitat values for SDT.	Reduce ORV related impacts and restore SDT habitat values.	Route closed, are not used.	Number of closure structures installed and miles of routes in SDT habitat reclaimed.
	Reclamation	Sm/L	F/I	L	Sm	BNI	L	Work with BLM on their statewide Travel Management Plans and coordinate with BLM, AGFD, and local law enforcement.	Reduction of unauthorized trails.	Observed or reported vehicle strikes reduced.	Number of observed or reported vehicle strikes.
	BWRNWR	Sm/L	F/I/H	M	M	BNI	L	Enforce ORV regulations.	Minimize potential for adverse impacts from illegally operated ORVs.	Fewer illegal ORV intrusions.	Number of ORV violations prosecuted.
	CPNWR	Sm/S	I/F	L	M	BNI	L	Restrict motorized use to designated public use roads through enforcement and education.	Avoid or minimize potential for adverse impacts caused by ORV route designation.	Number of off road vehicle incursions reduced.	Annual summary of ORV incursions.
	HNWR	Sm/L	F/I/H	L	M	BNI	L	Enforce ORV regulations.	Minimize potential for adverse impacts from illegally operated ORV.	Fewer illegal ORV intrusions.	Number of ORV violations observed.
	INWR	Sm/L	F/I/H	L	M	BNI	L	Enforce ORV regulations.	Minimize potential for adverse impacts from illegally operated ORV.	Fewer illegal ORV intrusions.	Number of ORV violations prosecuted.
	KNWR	Sm/L	F/I/H	L	M	BNI	L	Enforce ORV regulations.	Minimize potential for adverse impacts from illegally operated ORV.	Fewer illegal ORV intrusions.	Number of ORV violations observed.

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STRESSOR[1]	Cooperator	Scope[2]	Immediacy[3]	Intensity[4]	Exposure[5]	Response[6]	Overall Threat Level[7]	CONSERVATION MEASURES	CONSERVATION BENEFITS	MEASURE OF SUCCESS	ANNUAL REPORTING METRIC
	OPCNM	Sm	I	L	Sm	BNI	L	Work with other agencies to minimize ORV use.	Minimize any potential impact to habitat.	Acres of available habitat or mitigation plans (PH: number of off-road incursions in SDT habitat).	Number of Off-road incursions that result in loss of SDT habitat.
	OPCNM	I	I	L	I	BNI	L	Enforce recreational ORV use regulations/policy.	Minimize any potential impact to habitat.	Acres of available habitat. Continue current policy.	Number of Law Enforcement actions.
	SNP	I	H	L	I	BNI	L	Enforce ORV regulations.	Reduced degradation of SDT habitat and mortality.	Enforcement of ORV policies.	Number of Law Enforcement Actions.
	AZARNG	I	H/I	L	I	BNI	L	Restrict off-road travel unless necessary for mission critical activities or habitat improvements. All such off-road travel will be evaluated for impacts to SDT habitat.	Avoid or minimize potential adverse impacts caused by off-road travel.	Reduced number of incidents of unauthorized off-road travel. Impacts from authorized off-road travel avoided or minimized.	Area of SDT habitat degraded by off-road travel.
	LAFB	I	I/F	L	I	BNI	L	Restrict recreational vehicles to designated roadways.	Minimize vehicular caused disturbance.	No new illegal roads.	Record/map "wildcat" roads.
	LAFB	I	I/F	L	I	BNI	L	Explosive ordinance removal sweeps will be restricted to seasons when SDT are least active.	Minimize vehicular caused SDT habitat disturbance.	Reduced off-road habitat damage.	N/A
	LAFB	I	I/F	L	I	BNI	L	Restrict off-road maintenance activities to minimum mission essential.	Minimize vehicular caused SDT habitat disturbance.	Reduced off-road habitat damage.	N/A

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	MCAS Yuma	Sm/L	F/I/H	L	I	BNI	L	For military and related activities: Travel off designated road/trails or outside of designated ground support areas and target areas (for maintenance and operational range clearance activities) is prohibited, travel in washes not designated as authorized roads/trails is prohibited, and parking more than 50' off roads is prohibited.	Risk of direct mortality reduced, risk of negative impact to habitat, forage, etc. reduced.	Observed or reported vehicle strikes minimized. Habitat degradation minimized.	Records kept at MCAS Yuma Range Management.
	MCAS Yuma	Sm/L	F/I/H	L	I	BNI	L	For recreational range users: no vehicles permitted off designated roads/trails; driving in washes not designated as road/trails is prohibited; camping is prohibited more than 50 feet off designated roads.	Risk of direct mortality reduced, risk of negative impact to habitat, forage, etc. reduced.	Observed or reported vehicle strikes minimized. Habitat degradation minimized.	Records kept at MCAS Yuma Range Management.
	MCAS Yuma	Sm/L	F/I/H	L	I	BNI	L	Regulations enforced by Conservation Law Enforcement Officers.	Active presence of enforcement staff on the BMGR helps to educate range users and ensure compliance with conservation laws, rules and regulations.	Number of field contacts maintained or increased.	Records kept at MCAS Yuma Range Management.
	YPG	I/L	I	L	I	BNI	L	Vehicle trails or routes are necessary for the dynamic nature of our testing and training mission. Safety requires we remain on existing roads.	Reduce SDT habitat disturbance by ORVs.	Incidents of unauthorized off-road use reduced.	N/A
	YPG	I/L	I	L	I	BNI	L	YPG is not available to the public for recreational ORV use	Reduce SDT habitat disturbance by ORVs	N/A	N/A

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	YPG	I/L	I	L	I	BNI	L	Educate YPG workforce on importance of staying on roads, attentive driving and safety.	Reduce SDT habitat disturbance by ORVs.	Incidents of unauthorized off-road use reduced.	Number of individuals trained.
	CNF	Sm/S	F/I/H	L	Sm	BNI	L	Restrict motor vehicles to the designated system of roads and motorized trails shown on the motor vehicle use map that is available at each ranger district office. Motor vehicle use is prohibited in all other locations, unless it is specifically authorized by law, permit, and/or orders issued by the Forest Service in conjunction with resource management and public safety actions.	Avoid or minimize potential for adverse impacts caused by ORV route designation.	Compliance with Forest Plan.	Evidence of off-road travel in known SDT habitat.
	CNF	Sm/S	F/I/H	L	Sm	BNI	L	Limit motorized special use activities to existing National Forest System roads and motorized trails.	Avoid or minimize potential for adverse impacts caused by ORV route designation.	Compliance with Forest Plan.	Evidence of off-road travel in known SDT habitat.
	CNF	Sm/S	F/I/H	L	Sm	BNI	L	Prohibit overland travel off system roads except within 300 feet of a designated route for the purposes of camping.	Avoid or minimize potential for adverse impacts caused by ORV route designation.	Compliance with Forest Plan.	Evidence of off-road travel in known SDT habitat.
	PNF	S/L	H	L	I	BNI	L	Forest Plan Component: Std-Rec-1: Only designated roads, motorized trails, and motorized use areas as depicted and described on the motor vehicle use map are open to public motorized vehicle use.	ORV use should not be occurring.	Compliance with Forest Plan.	

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	PNF	S/L	H	L	I	BNI	L	Forest Plan component – Guide-Rec-1:For the purpose of motorized big game retrieval: Use of motor vehicles should be limited to within 1 mile of designated roads and motorized trails to retrieve a legally hunted and tagged elk during elk hunting seasons as designated by the AGFD, and for 24 hours following the end of each season. Only one vehicle (i.e., one trip in and one trip out) per harvested animal should be operated off of designated roads and motorized trails. Hunters should use the most direct and least ground-disturbing route to accomplish the retrieval. Motorized big game retrieval should not occur when conditions are such that travel would cause damage to natural and/or cultural resources. Motor vehicles should not cross riparian corridors, streams, and rivers except at hardened crossings or crossings with existing culverts.	Avoid or minimize potential for adverse impacts caused by ORV use.	Little to no ORV traffic would occur in SDT habitat.	Evidence of off-road travel in known SDT habitat.
	PNF	S/L	H	L	I	BNI	L	DC-Ecosystem Resilience -1 - Ecological conditions for habitat quality, distribution, and abundance contribute to self-sustaining populations of terrestrial and aquatic plants and animals. Conditions provide for the life history, distribution, and natural population fluctuations of the species within the capability of the ecosystem. Contiguous blocks of habitat are interconnected, support a wide array of native species, and allow for genetic and behavioral interactions.	Projects in SDT habitat would be designed to maintain habitat connectivity for SDT.	Where SDT have been documented, they continue to persist if a project is implemented.	Monitor SDT occurrence.

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STRESSOR[1]	Cooperator	Scope[2]	Immediacy[3]	Intensity[4]	Exposure[5]	Response[6]	Overall Threat Level[7]	CONSERVATION MEASURES	CONSERVATION BENEFITS	MEASURE OF SUCCESS	ANNUAL REPORTING METRIC
	PNF	S/L	H	L	I	BNI	L	Forest Plan Component: DC-Wildlife-1 - Habitats that support populations of Southwestern Region sensitive species provide the ecological conditions that facilitate the life history, distribution, and natural population fluctuations of the species within the capability of the ecosystem.	Projects in SDT habitat would be designed to maintain habitat connectivity for SDT	Where SDT have been documented, they continue to persist if a project is implemented	Monitor SDT occurrence
	TNF	Sm/S	F	M	Sm	BNI	L	District wildlife staff will participate in the route and area designation process to ensure SDT effects are considered when determining motor vehicle use status and mitigation needs.	Minimize potential for adverse effects caused by ORV area designation.	Reduce miles of motorized routes in SDT habitat.	Number of miles of routes closed in SDT habitat.
	TNF	Sm/S	I	M	Sm	BNI	L	Routes that conflict with maintaining SDT habitat will be mitigated. Mitigation will include, but not be limited to, the following: route closure, seasonal restrictions, rerouting, vehicle type restrictions, speed restrictions, etc.	Minimize potential for adverse effects caused by ORV area designation.	Reduce miles of motorized routes in SDT habitat.	Number of miles of routes closed in SDT habitat.
	TNF	Sm/S	I	L	Sm	BNI	L	Emphasize enforcement of ORV regulations. Reclaim decommissioned and unauthorized routes when fiscally prudent.	Reduce ORV related impacts and restore SDT habitat values.	Reduced vehicle strikes of SDT.	Miles of roads decommissioned.
	AGFD	Sm/S	I	L	Sm	BNI	L	Record evidence/presence of unlawful ORV use during routine monitoring efforts; Report to Law Enforcement.	Inform management.	No increase in habitat degradation.	Number of observations.
	AGFD	Sm/S	I	L	Sm	BNI	L	Enforce statutes as authorized in Title 17-454 and 28-1174.	Reduce ORV related impacts.	Low incidence of citation.	Number of Law Enforcement actions.

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STRESSOR[1]	Cooperator	Scope[2]	Immediacy[3]	Intensity[4]	Exposure[5]	Response[6]	Overall Threat Level[7]	CONSERVATION MEASURES	CONSERVATION BENEFITS	MEASURE OF SUCCESS	ANNUAL REPORTING METRIC
	AGFD	Sm/S	I	L	Sm	BNI	L	Issue media advisories to educate the public on laws, impacts of habitat degradation for wildlife.	Prevention of illegal collection activities.	Reduced ORV related impacts.	Number of attendees at public outreach efforts. Number of media advisories.
A.9. Increased human interactions due to off-highway vehicle use.	BLM	Sm/S	I	L	Sm	B/C	L	Develop brochures and signs to educate OHV users about SDT conservation and best management practices (BMPs) to minimize direct impacts.	Better public understanding will encourage voluntary compliance with BMPs.	Incidence of unauthorized off-road use reduced.	Number of new routes detected in SDT habitat.
	BLM	Sm/S	I	L	Sm	B/C	L	Actively engage ORV user groups as partners in educating users and self-policing inappropriate behavior (the OHV Ambassador Program).	Better public understanding will encourage voluntary compliance with BMPs.	Incidence of unauthorized off-road use reduced.	Number of new routes detected in SDT habitat.
	Reclamation	Sm/L	F/I	L	Sm	B/C	L	Coordinate with BLM, AGFD, and local law enforcement to increase patrols near Reclamation lands.	Compliance with tortoise regulations and a public that is more aware of management issues.	Reduction in unauthorized road use and creation.	Number of new routes detected.
	BWRNWR	Sm/L	F/I/H	L	Sm	B/C	L	Enforce OHV regulations.	Minimize potential for adverse impacts from illegally operated OHVs.	Fewer illegal OHV intrusions.	Number of OHV violations prosecuted.

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STRESSOR[1]	Cooperator	Scope[2]	Immediacy[3]	Intensity[4]	Exposure[5]	Response[6]	Overall Threat Level[7]	CONSERVATION MEASURES	CONSERVATION BENEFITS	MEASURE OF SUCCESS	ANNUAL REPORTING METRIC
	CPNWR	SM/L	F/I/H	L	Sm	B/C	L	Develop brochures and signs to educate ORV users about SDT conservation and best management practices to minimize direct impacts.	Better public understanding will encourage voluntary compliance with BMPs.	Number of human interactions with SDT will be reduced. Number of SDT killed by off-highway vehicle use will be reduced or eliminated.	Number of outreach materials produced, distributed, and posted.
	HNWR	Sm/L	F/I/H	L	Sm	B/C	L	Enforce ORV regulations.	Minimize potential for adverse impacts from illegally operated ORVs.	Fewer illegal ORV intrusions.	Number of ORV violations observed.
	INWR	Sm/L	F/I/H	L	Sm	B/C	L	Enforce ORV regulations.	Minimize potential for adverse impacts from illegally operated ORVs.	Fewer illegal ORV intrusions.	Number of ORV violations prosecuted.
	INWR	Sm/L	F/I/H	L	Sm	B/C	L	Educate refuge visitors about ORV regulations and SDT conservation to minimize direct impacts.	Minimize potential for adverse impacts from illegally operated ORVs.	Fewer illegal ORV intrusions.	Number of ORV violations prosecuted.
	OPCNM	I	I	L	I	B/C	L	Enforce recreational ORV use regulations/policy.	minimize any potential impact to habitat	minimal human interactions. Continue current policy	Number of Law Enforcement actions.
	SNP	I	H	L	I	B/C	L	Enforce ORV regulations.	Reduced degradation of SDT habitat and mortality.	Enforcement of ORV policies.	Number of Law Enforcement Actions.

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STRESSOR[1]	Cooperator	Scope[2]	Immediacy[3]	Intensity[4]	Exposure[5]	Response[6]	Overall Threat Level[7]	CONSERVATION MEASURES	CONSERVATION BENEFITS	MEASURE OF SUCCESS	ANNUAL REPORTING METRIC
	AZARNG	I	I	L	I	B/C	L	Provide tortoise awareness briefs to all users and contractors and maintain educational signs at installations with SDT.	Increase awareness and compliance of SDT conservation practices. Avoid adverse interactions between SDTs and humans.	Reduced number of adverse human incidents with SDT from off-highway travel.	Number of human interactions with SDT from ORV use.
	LAFB	I	I/F	L	I	B/C	L	Restrict motorized vehicles to designated roadways.	Minimize human/SDT contact.	Reduced SDT removal harassment.	TBD through AIDTT.
	MCAS Yuma	Sm/L	F/I/H	L	Sm	B/C	L	Military and related range users are briefed on what tortoises and burrows look like, range users are instructed to remain mindful of tortoises and potential burrows, range users must inspect around vehicles for tortoises and other wildlife prior to moving, range users are prohibited from handling and harassing tortoises and are required to contact Range Management if they encounter a tortoise.	Risk of road mortality reduced.	Observed or reported vehicle strikes minimized.	Records kept at MCAS Yuma Range Management.
	MCAS Yuma	Sm/L	F/I/H	L	Sm	B/C	L	Recreational range users are prohibited from harassment, harming, and killing of wildlife, other than by lawful means permitted by AGFD (e.g. hunting).	Minimizes collection.	Minimum number of infractions.	Records kept at MCAS Yuma Range Management.
	YPG	I/L	I	L	I	B/C	L	Provide training to YPG workforce emphasizing SDT protection and avoidance including best management practices for driving on the range and reporting tortoise sightings.	Better understanding of YPG workforce will encourage compliance.	Incidents of unauthorized off-road use reduced.	Number of training sessions.

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	TNF	Sm/S	F	L	Si	B/C	L	Collaborate with other state and federal wildlife agencies and volunteer groups in an effort to develop educational messages for ORV users about SDT conversations and BMPs to minimize direct effects.	Encourage voluntary compliance with travel management decisions and rules.	Reduce vehicle strikes to SDT.	Number of outreach conducted.
	NRCS	-	-	-	-	-	-	Recommend implementation of practices avoid active periods of SDT.	Decreased disturbance for human presence.	N/A	N/A
	AGFD	Sm/S	I	L	Sm	B/C	L	Enforce statutes as authorized in Title 17 Sec. 17-454.	Reduce ORV related impacts.	Low incidence of citation.	Number of Law Enforcement actions.
	AGFD	Sm/S	I	L	Sm	B/C	L	Issue media advisories to educate the public on laws, impacts of habitat degradation for wildlife.	Prevention of illegal collection activities.	Reduced ORV related impacts.	Number of attendees at public outreach efforts. Number of media advisories and
A.10. Loss of habitat through grazing management practices that alter shrub cover and/or grass and forb composition, reducing thermal cover and forage availability or quality.	BLM	Si/S	I/H	L	Si	BNI	L	Evaluate plant community condition through Range Health Evaluation – permit renewal process.	Avoid or minimize potential for adverse impacts caused by grazing and maintain plant community structure and diversity.	Allotments meet DPC objectives.	Number of allotments evaluated and meeting DPC objectives.
	BLM	Si/S	I	L	Si	BNI	L	Continue to implement and enforce regulations.	Avoid or minimize potential adverse impacts to SDT.	Allotments meet DPC objectives.	Number of allotments evaluated and meeting DPC objectives.

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	BLM	Si/S	I	L	Si	BNI	L	Set Desired Plant Community objectives that incorporate SDT habitat requirements.	Avoid or minimize potential for adverse impacts caused by grazing and maintain plant community structure and diversity.	Allotments meet DPC objectives.	Number of allotments evaluated and meeting DPC objectives.
	BLM	Si/S	I	L	Si	BNI	L	Implement grazing management changes to achieve or make significant progress toward meeting Desired Plant Community objectives.	Avoid or minimize potential for adverse impacts caused by grazing and maintain plant community structure and diversity.	Allotments meet DPC objectives.	Number of allotments evaluated and meeting DPC objectives.
	BLM	Si/S	I	L	Si	BNI	L	Ensure adequate forage remains for SDT following ephemeral use periods.	Avoid or minimize potential for adverse impacts caused by grazing and maintain plant community structure and diversity.	Adequate SDT forage remains following ephemeral use.	Number of ephemeral allotments used.
	BLM	Si/S	I	L	Si	BNI	L	Encouraging livestock operators to rest or defer grazing during drought.	Avoid or minimize potential for adverse impacts caused by grazing and maintain plant community structure and diversity.	Allotments meet DPC objectives.	Number of allotments evaluated and meeting DPC objectives.

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	BLM	Si/S	I	L	Si	BNI	L	Monitor vegetative condition in areas of wild burro and SDT overlap.	Minimize habitat degradation due to wild burros.	Areas of wild burro overlap with SDT are meeting DPC objectives.	TBD through AIDTT.
	BLM	Si/S	I	L	Si	BNI	L	Pursue funding and authority to control wild burro populations within SDT habitat when warranted.	Minimize habitat degradation due to wild burros.	Areas of wild burro overlap with SDT are meeting DPC objectives.	Number of wild burros removed.
	Reclamation	-	-	-	-	-	-	Elimination of trespass cattle on Reclamation lands.	Recovery of vegetation impacted by grazing.	No cattle on Reclamation lands.	Reports of trespass cattle on Reclamation lands.
	OPCNM	M	H	L	Sm	BNI	L	Avoid areas with grazing damage to recover naturally.	Improve habitat quality.	Acres of suitable habitat.	Report acres of land in natural condition.
	OPCNM	I	I	L	I	BNI	L	Livestock grazing is only permitted on a small portion of non-wilderness.	Maintain or restore suitable habitat.	Acres of suitable habitat.	Acres reported to Government Results and Performance Act.
	SNP	I	H	L	I	BNI	L	Enforce policy that prohibits grazing with SNP boundary. Maintain boundary fence to exclude illegal grazing.	Reduced degradation of SDT habitat.	No livestock grazing within SNP boundary.	Length of boundary fence monitored and repaired.
	LAFB	I	I/F	L	I	BNI	L	Prohibit livestock grazing allotments on the BMGR East.	Maintain high quality SDT habitat.	Reduced livestock caused habitat degradation.	None.
	LAFB	I	I/F	L	I	BNI	L	Implement management procedures to reduce livestock trespass on the BMGR East.	Maintain high quality SDT habitat.	Reduced livestock caused habitat degradation.	None.
	YPG	I	H	-	I	N/A	L	No livestock grazing is authorized on YPG.	Avoid adverse impacts caused by grazing.	no grazing authorized.	N/A

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STRESSOR[1]	Cooperator	Scope[2]	Immediacy[3]	Intensity[4]	Exposure[5]	Response[6]	Overall Threat Level[7]	CONSERVATION MEASURES	CONSERVATION BENEFITS	MEASURE OF SUCCESS	ANNUAL REPORTING METRIC
	CNF	Si/S	F/I/H	L	M	BNI	L	Design grazing management practices to maintain or promote ground cover that will provide for infiltration, permeability, soil moisture storage, and soil stability appropriate for the ecological zone. Additionally, grazing management should retain ground cover sufficient for the forage and cover needs of native wildlife species.	Avoid or minimize potential for adverse impacts caused by grazing and maintain plant community structure and diversity.	SDT habitat maintained or improved.	Acres of SDT habitat maintained.
	CNF	Si/S	F/I/H	L	M	BNI	L	Grazing intensity, frequency, occurrence, and period should provide for growth and reproduction of desired plant species while maintaining or enhancing habitat for wildlife.	Avoid or minimize potential for adverse impacts caused by grazing and maintain plant community structure and diversity. SDT habitat needs would be considered and addressed in all FS livestock management actions.	SDT habitat maintained or improved.	Acres of SDT habitat maintained.
	PNF	S/L	H	L	I	BNI	L	Grazing intensity, frequency, occurrence, and period should provide for growth and reproduction of desired plant species while maintaining or enhancing habitat for wildlife, as per Forest Plan component Guide-Range-6.	SDT habitat needs would be considered and addressed in all FS livestock management actions.	SDT habitat maintained or improved.	Acres of SDT habitat maintained.

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STRESSOR[1]	Cooperator	Scope[2]	Immediacy[3]	Intensity[4]	Exposure[5]	Response[6]	Overall Threat Level[7]	CONSERVATION MEASURES	CONSERVATION BENEFITS	MEASURE OF SUCCESS	ANNUAL REPORTING METRIC
	PNF	S/L	H	L	I	BNI	L	DC-Ecosystem Resilience -1 - Ecological conditions for habitat quality, distribution, and abundance contribute to self-sustaining populations of terrestrial and aquatic plants and animals. Conditions provide for the life history, distribution, and natural population fluctuations of the species within the capability of the ecosystem. Contiguous blocks of habitat are interconnected, support a wide array of native species, and allow for genetic and behavioral interactions.	Projects in SDT habitat would be designed to maintain habitat connectivity for SDT.	Where SDT have been documented, they continue to persist if a project is implemented.	Monitor SDT occurrence.
	PNF	S/L	H	L	I	BNI	L	Forest Plan Component: DC-Wildlife-1 - Habitats that support populations of Southwestern Region sensitive species provide the ecological conditions that facilitate the life history, distribution, and natural population fluctuations of the species within the capability of the ecosystem.	Projects in SDT habitat would be designed to maintain habitat connectivity for SDT.	Where SDT have been documented, they continue to persist if a project is implemented.	Monitor SDT occurrence.
	TNF	VS	H/I/F	M	M	BNI	M	Evaluate plant community condition through rangeland resource monitoring and permit renewal process.	Minimize potential for adverse impacts caused by grazing and maintain plant community structure and diversity.	In concert with grazing practices SDT habitat is meeting desired conditions.	Acres or rangeland vegetation improved.
	TNF	VS	I/F	M	M	BNI	M	Establish desired conditions for SDT habitat	Avoid or minimize potential for adverse	In concert with grazing practices SDT	Acres or rangeland vegetation improved.

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	TNF	VS	I/F	M	M	BNI	M	Implement grazing management practices to achieve or make significant progress toward meeting desired conditions within SDT habitat.	Maintain plant community structure and diversity.	Meeting desired conditions.	Acres of rangeland vegetation improved
	TNF	Si	I/F	M	M	BNI	M	Manage grazing practices to standard.	Mitigate potential adverse impacts to SDT.	Allotments meet grazing objectives.	Terrestrial Habitat improved.
	NRCS	-	-	-	-	-	-	Work with land owners to implement prescribed grazing to increase native species success and competition with invasive species.	Improve forage for SDT and decreased potential for invasive species.	Range monitoring shows improvement in range health.	Acres planned of prescribed grazing in SDT habitat. Specific locations not
	NRCS	-	-	-	-	-	-	Work with AGFD, BLM., FWS, and Winkleman NRCD to develop and implement Best Management Practices (BMP) for livestock ranching in SDT habitat.	Avoid or minimize potential for adverse impacts caused by grazing and maintain plant community structure and diversity.	BMP implemented.	Summary of those implementing BMP.
	AGFD	-	-	-	-	-	-	Work with BLM., FWS, NRCS and Winkleman NRCD to develop and implement Best Management Practices (BMP) for livestock ranching in SDT habitat.	Avoid or minimize potential for adverse impacts caused by grazing and maintain plant community structure and diversity.	BMP implemented.	Summary of those implementing BMP.

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STRESSOR[1]	Cooperator	Scope[2]	Immediacy[3]	Intensity[4]	Exposure[5]	Response[6]	Overall Threat Level[7]	CONSERVATION MEASURES	CONSERVATION BENEFITS	MEASURE OF SUCCESS	ANNUAL REPORTING METRIC
A.11. Degradation of habitat resulting from livestock related developments (cattle guards, corrals, waters and pipelines), and concentration of livestock around water, corrals, or mineral supplements that result in loss of forage and cover and promotes establishment of invasive plant species.	BLM	I/L	H/I/F	M	Sm	BNI	L	Review on a case-by-case basis, all discretionary use requests to determine associated impacts to SDT and implement measures to avoid, minimize or mitigate impacts to achieve SDT population and habitat objectives described in land use plans.	Avoid or minimize potential adverse impacts to SDT.	Impacts mitigated.	Number of project applications reviewed.
	BLM	I/L	H/I/F	M	Sm	BNI	L	Avoid locating livestock concentration areas within ¼ mile of occupied SDT habitat.	Avoid or minimize potential for adverse impacts caused by livestock trampling.	Impacts mitigated.	Number of project applications reviewed.
	OPCNM	I	H	L	I	BNI	L	Allow areas of concentrated grazing damage to recover naturally.	Improve habitat quality.	Acres of suitable habitat.	Report acres of land in natural condition.
	LAFB	I	I	L	I	BNI	L	Place barriers around AGFD wildlife waters to prevent access to trespass livestock.	Avoid or minimize potential for adverse impacts caused by grazing and maintain plant community structure and diversity.	None.	None.
	YPG	I	N/A	N/A	I	N/A	L	No livestock grazing is authorized on YPG.	Avoid adverse impacts caused by grazing.	No grazing authorized.	N/A

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	CNF	Sm/L	H	L	I	BNI	L	Construction or reconstruction of livestock fencing and replacement of nonpermeable fencing where wildlife movement is restricted should be consistent with the appropriate AGFD standards for safe passage of wildlife and/or species-specific fencing guidelines developed at the local or regional level.	SDT habitat needs would be considered and addressed in all FS livestock management actions.	SDT habitat maintained or improved.	Acres of SDT habitat maintained.
	PNF	Sm/L	H	L	I	BNI	L	For structural improvements: implement design features that incorporate wildlife needs and reduce barriers to movement and entrapment hazards; consider wildlife needs in fence placement and design to reduce barriers and hazards to movement and minimize chances of entrapment; and remove fencing when it is no longer needed, as per Forest Plan component Guide - Range - 2.	SDT habitat needs would be considered and addressed in all FS livestock management actions	SDT habitat maintained or improved.	Acres of SDT habitat maintained.
	PNF	Sm/L	H	L	I	BNI	L	Forest Plan Component: Guide-Trans-5: To avoid unintended entrapment, wildlife friendly design for cattle guards should be incorporated for new and replacement installations.	SDT habitat needs would be considered and addressed in all FS livestock management actions.	SDT habitat maintained or improved.	Acres of SDT habitat maintained.

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STRESSOR[1]	Cooperator	Scope[2]	Immediacy[3]	Intensity[4]	Exposure[5]	Response[6]	Overall Threat Level[7]	CONSERVATION MEASURES	CONSERVATION BENEFITS	MEASURE OF SUCCESS	ANNUAL REPORTING METRIC
	PNF	Sm/L	H	L	I	BNI	L	DC-Ecosystem Resilience -1 - Ecological conditions for habitat quality, distribution, and abundance contribute to self-sustaining populations of terrestrial and aquatic plants and animals. Conditions provide for the life history, distribution, and natural population fluctuations of the species within the capability of the ecosystem. Contiguous blocks of habitat are interconnected, support a wide array of native species, and allow for genetic and behavioral interactions.	Projects in SDT habitat would be designed to maintain habitat connectivity for SDT.	Where SDT have been documented, they continue to persist if a project is implemented.	Monitor SDT occurrence.
	PNF	Sm/L	H	L	I	BNI	L	Forest Plan Component: DC-Wildlife-1 - Habitats that support populations of Southwestern Region sensitive species provide the ecological conditions that facilitate the life history, distribution, and natural population fluctuations of the species within the capability of the ecosystem.	Projects in SDT habitat would be designed to maintain habitat connectivity for SDT.	Where SDT have been documented, they continue to persist if a project is implemented.	Monitor SDT occurrence.
	TNF	M	H	L	L	BNI	L	Through the NEPA process, analyze mitigate impacts to SDT to achieve SDT population and habitat objectives described in land use plans.	Mitigate potential adverse impacts to SDT.	Impacts mitigated.	Acres of terrestrial habitat improved.
	NRCS	-	-	-	-	-	-	Recommend implementation of practices that avoid SDT primary active periods.	Decreased disturbance to SDT from human presence.	None.	None.

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	NRCS	-	-	-	-	-	-	Work with AGFD, BLM., FWS, and Winkleman NRCD to develop and implement Best Management Practices for Ranching in SDT habitat.	Avoid or minimize potential for adverse impacts caused by grazing and maintain plant community structure and diversity.	BMP implemented.	Summary of those implementing BMP.
	AGFD	-	-	-	-	-	-	Work with BLM., FWS, NRCS and Winkleman NRCD to develop and implement Best Management Practices for Ranching in SDT habitat.	Avoid or minimize potential for adverse impacts caused by grazing and maintain plant community structure and diversity.	BMP implemented.	Summary of those implementing BMP.
A.12. Degradation of habitat due to increase human activity associated with illegal immigration, smuggling, and law enforcement along the international border with Mexico.	BLM	Sm/S	I	L	Sm	BNI	L	Law enforcement personnel will work with CBP to cooperatively enforce Federal immigration and smuggling laws and provide guidance to minimize environmental impacts associated with enforcement activities to the extent practicable.	Minimize potential for adverse impacts associated with border related activities.	Incidence of off-road use reduced.	Number of new routes detected in SDT habitat.
	Reclamation	Sm	F	L	I	BNI	L	Coordinate with law enforcement personnel to patrol Reclamation lands if human activity associated with illegal immigration is reported.	Minimize impacts associated with border related activities.	Incidence of illegal human activity reduced.	Number of new routes detected.

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	CPNWR	Si/L	F/I/H	M	Si	BNI	M	Law enforcement personnel will work with CBP to cooperatively enforce Federal immigration and smuggling laws and provide guidance to minimize environmental impacts associated with enforcement activities to the extent practicable.	Minimize potential for adverse impacts associated with border related activities.	Incidence of off-road use reduced.	Number of new routes detected in SDT habitat.
	CPNWR	Si/L	F/I/H	M	Si	BNI	M	Inventory the number of unauthorized vehicle routes in SDT habitat.	Minimize potential for adverse impacts associated with border related activities.	A reduction in the number of unauthorized vehicle routes in SDT habitat.	Number of new routes detected in SDT habitat.
	CPNWR	Si/L	F/I/H	M	Si	BNI	M	Work with CBP management and local partners on an education and outreach program which will teach DHS law enforcement staff about SDT biology, habitat, and impacts from human interactions.	Minimize potential for adverse impacts associated with border related activities.	A reduction in the number of unauthorized vehicle routes in SDT habitat.	Number of outreach/education programs.
	INWR	I	F/I/H	L	I	BNI	L	Law enforcement personnel will work with CBP to cooperatively enforce Federal immigration and smuggling laws and provide guidance to minimize environmental impacts associated with enforcement activities to the extent practicable.	Minimize potential for adverse impacts associated with border related activities.	Incidence of off-road use reduced.	Number of new routes detected in SDT habitat.
	OPCNM	Si	I	L	SM	BNI	L	Work with agencies to reduce illegal immigration and mitigate off-road travel.	Minimize habitat degradation and rehabilitate currently degraded habitat.	Reduction in number of active routes and number of routes restored (acres/miles).	Number of active routes and number of routes closed.

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	LAFB	Sm	F/I	L	Sm	BNI	L	Law enforcement personnel will work with DHS to cooperatively enforce Federal immigration and smuggling laws and provide guidance to minimize environmental impacts associated with enforcement activities to the extent practicable.	Minimize potential for adverse impacts associated with border related activities.	Reduced habitat degradation from ORVs.	Number of new routes detected in SDT habitat.
	MCAS Yuma	Sm/L	F/I/H	L	Sm	B/B NI	L	Through the Barry M Goldwater Executive Council and Intergovernmental Executive Committee, develop formal agreements with US Border Patrol (USBP) regarding best management practices for road maintenance and operational road dragging associated with USBP enforcement	Risk of direct mortality reduced, risk of negative impact to habitat, forage, etc. reduced.	Observed or reported vehicle strikes minimized. Habitat degradation minimized.	Records kept at MCAS Yuma Range Management.
	MCAS Yuma	Sm/L	F/I/H	L	Sm	BNI	L	Plan and implement projects, in cooperation with US Border Patrol, to restore disturbed sites and reverse previous habitat degradation on BMGR West.	More available habitat.	Net available habitat is maintained or increased.	Records kept at MCAS Yuma Range Management.
	YPG	I	N/A	N/ A	I	N/A	L	Coordinate with Border Patrol in the event they do operations on YPG.	Minimize potential for adverse impacts associated with border related activities.	N/A	N/A
	SNP	I	F/I/H	L	I	BNI	L	Increase LE patrols to decrease illegal border activities and rehabilitate areas that have been impacted by such activities.	Minimize and rehab adverse effects on SDT from border activities.	Decrease in number of trails from border impacts.	Number of new trails roads detected, and subsequently rehabbed, in SDT

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	CBP	-	-	-	-	-	-	Provide training to CBP workforce emphasizing SDT protection and avoidance including best management practices for driving on the range and reporting tortoise sightings.	Better understanding of CBP workforce will encourage compliance.	Incidents of unauthorized off-road use reduced	Number of training sessions.
	CNF	Sm/L	F/I	L	Sm	BNI	L	Law enforcement personnel will work with DHS to cooperatively enforce Federal immigration and smuggling laws and provide guidance to minimize environmental impacts associated with enforcement activities to the extent practicable.	Minimize potential for adverse impacts associated with border related activities.	Incidence of off-road use reduced.	Number of new routes detected in SDT habitat.
	TNF	Sm	H	L	Sm	BNI	L	Law enforcement personnel will work to cooperatively enforce Federal laws to the extent practicable.	Minimize potential for adverse impacts associated with border related activities.	Incidence of off-road use reduced.	None.
B. Overutilization for commercial, recreational, scientific, or educational purposes- **Expected stressors that result in directed and incidental take for commercial, recreational, scientific, and educational purposes.**											
B1. Collection as pets.	BLM	Sm/L	H/I/F	L	Sm	C	M	Work with AIDTT to develop brochures and signs to educate public land users about SDT conservation and best management practices to minimize direct impacts.	Minimize potential for adverse impacts associated with illegal SDT collection.	Reduced incidence of collection.	Number of outreach materials produced, distributed, and posted.
	Reclamation	Sm/L	H/I/F	L	Sm	C	M	Work with the Reclamation Lands program to develop signs and brochures.	Educate the public to reduce illegal collection of tortoises.	Reduction in illegal collections.	Production and strategic placement of education materials.
	BWRNWR	Sm/L	H/I/F	L	Sm	C	M	Educate refuge visitors about SDT conservation and best management practices to minimize direct impacts.	Minimize potential for adverse impacts associated with illegal SDT collection.	Reduced incidence of collection.	Number of outreach materials produced, distributed, and posted.

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	CPNWR	Sm/L	H/I/F	L	Sm	C	M	Work with AIDTT to develop brochures and signs to educate public land users about SDT conservation and best management practices to minimize direct impacts.	Minimize potential for adverse impacts associated with illegal SDT collection.	Reduced incidence of collection.	Number of outreach materials produced, distributed, and posted.
	HNWR	Sm/L	H/I/F	L	Sm	C	M	Educate refuge visitors about SDT conservation and best management practices to minimize direct impacts.	Minimize potential for adverse impacts associated with illegal SDT collection.	Reduced incidence of collection.	Number of outreach materials produced, distributed, and posted.
	INWR	Sm/L	H/I/F	L	Sm	C	M	Educate refuge visitors about SDT conservation and best management practices to minimize direct impacts.	Minimize potential for adverse impacts associated with illegal SDT collection.	Reduced incidence of collection.	Number of outreach materials produced, distributed, and posted.
	OPCNM	Sm/L	H/I/F	L	Sm	C	M	Work with LE agencies to minimize and interdict illegal collection; remind staff to report cases to LE immediately.	Reduce collection.	N/A	N/A
	SNP	Sm/L	H/I/F	L	Sm	C	M	Increase LE patrols and vigilance regarding SDT collection	Reduce number of successful tortoise collections	Reduced incidence of collection.	Reduced incidence of SDT collection
	AZARNG	Sm/L	H/I/F	L	Sm	C	M	Continue tortoise awareness briefs to all users and contractors and maintain educational signs at installations with SDT.	Educate the public to reduce illegal collection of tortoises.	Reduction in illegal collections.	Number of users and contractors briefed.
	LAFB	Sm/L	H/I/F	L	Sm	C	M	Work with AIDTT to develop brochures and signs to educate public land users about SDT conservation and best management practices to minimize direct impacts.	Minimize potential for adverse impacts associated with illegal SDT collection.	Reduced incidence of collection.	Number of public outreach materials developed and where distributed.
	LAFB	Sm/L	H/I/F	L	Sm	C	M	Include language regarding SDT collection and/or harassment in the public use map provided with Recreation Permits.	Reduce incidence of collection	None.	None.

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	MCAS Yuma	Sm/L	H/I/F	L	Sm	C	M	All range users are prohibited from handling and harassing tortoises.	Minimizes collection.	Minimum number of infractions.	Records kept at MCAS Yuma Range Management.
	MCAS Yuma	Sm/L	H/I/F	L	Sm	C	M	Regulations enforced by Conservation Law Enforcement Officers	Active presence of enforcement staff on the BMGR helps to educate range users and ensure compliance with conservation laws, rules and regulations.	Number of field contacts maintained or increased.	Records kept at MCAS Yuma Range Management.
	CNF	Sm/L	H/I/F	L	Sm	C	M	Work with AIDTT to develop brochures and signs to educate public land users about SDT conservation and best management practices to minimize direct impacts.	Minimize potential for adverse impacts associated with illegal SDT collection.	Reduced incidence of collection.	Number of outreach materials produced, distributed, and posted.
	AGFD	Sm/L	H/I/F	L	Sm	C	M	Work with AIDTT to develop brochures and signs to educate public land users about SDT conservation and best management practices to minimize direct impacts.	Educated public.	An educated public.	Number of outreach materials produced, distributed, and posted.
	AGFD	Sm/L	H/I/F	L	Sm	C	M	Provide outreach through presentations, media advisories, and the website to educate the public on laws, issues of disease and genetics, and to promote acquiring tortoises through the tortoise adoption program.	Low incidence of illegal collection.	An educated public.	Number of attendees of public efforts. Number of media advisories and resulting coverage.
	AGFD	Sm/L	H/I/F	L	Sm	C	M	Enforce Statute (ARS Sec. 17-331), Rule (R12-4-404), and Commission Order (43) as appropriate.	Enforcement of regulations.	Reduced incidence of collection.	Number of Law Enforcement actions.

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STRESSOR[1]	Cooperator	Scope[2]	Immediacy[3]	Intensity[4]	Exposure[5]	Response[6]	Overall Threat Level[7]	CONSERVATION MEASURES	CONSERVATION BENEFITS	MEASURE OF SUCCESS	ANNUAL REPORTING METRIC
B.2. Handling stress may result in decrease fitness and increase susceptibility to secondary stressors.	BLM	Sm	I	L	Sm	B/C	L	Work with AIDTT to investigate new inventory/monitoring methods that more accurately, less intrusively and more cost effectively fulfill population management needs.	Minimize potential for adverse impacts associated with research and management.	New methodologies are developed and implemented.	Protocols finalized, summary of decisions included.
	BLM	Sm	I	L	Sm	B/C	M	Work with AIDTT to develop brochures and signs to educate public land users about SDT conservation and best management practices to minimize direct impacts.	Minimize potential for adverse impacts associated with handling SDT.	Reduced stress induces mortality.	Number of outreach materials produced, distributed, and posted.
	Reclamation	Sm	I	L	Sm	B/C	L	Work with AIDTT to investigate new inventory/monitoring methods that more accurately, less intrusively and more cost effectively fulfill population management needs.	Minimize potential for adverse impacts associated with research and management.	New methodologies are developed and implemented.	Protocols finalized, summary of decisions included.
	BWRNWR	Sm	I	L	Sm	B/C	L	Work with AIDTT to investigate new inventory/monitoring methods that more accurately, less intrusively and more cost effectively fulfill population management needs.	Minimize potential for adverse impacts associated with research and management.	New methodologies are developed and implemented.	Protocols finalized, summary of decisions included.
	CPNWR	Sm	I	L	Sm	B/C	L	Work with AIDTT to develop public outreach materials that educate the public on methods to move SDT off roads and the impact on SDT from handling stress.	Minimize potential for adverse impacts associated with moving a SDT off a road or handling them.	Increased public awareness on methods to handle wild SDT.	Number of public outreach materials developed and where distributed.
	HNWR	Sm	I	L	Sm	B/C	L	Work with AIDTT to investigate new inventory/monitoring methods that more accurately, less intrusively and more cost effectively fulfill population management needs.	Minimize potential for adverse impacts associated with research and management.	New methodologies are developed and implemented.	Protocols finalized, summary of decisions included.

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	INWR	Sm	I	L	Sm	B/C	L	Work with AIDTT to investigate new inventory/monitoring methods that more accurately, less intrusively and more cost effectively fulfill population management needs.	Minimize potential for adverse impacts associated with research and management.	New methodologies are developed and implemented.	Protocols finalized, summary of decisions included.
	OPCNM	Sm	I	L	Sm	B/C	M	Ensure that scientific projects minimize non-essential handling.	Reduce stress.	Reduce injury of voiding bladder.	Number of captures reported & approved.
	SNP	Sm	I	L	Sm	B/C	L	Work with AIDTT to develop public outreach materials that educate the public on methods to move SDT off roads and the impact on SDT from handling stress.	Minimize potential for adverse impacts associated with handling SDT.	Increased public awareness on methods to handle wild SDT.	Number of outreach materials produced, distributed, and posted.
	AZARNG	I	I/F	L	I	B/C	M	Continue tortoise awareness briefs to all users and contractors on methods and protocols to move tortoises.	Minimize potential for adverse impacts associated with moving tortoises.	Increased public awareness of methods to handle wild tortoise.	Number of staff trained and number of tortoises moved or handled.
	MCAS Yuma	Sm/L	F/I/H	L	I	B	M	All biologists trained in handling tortoises.	Reduced stress.	Minimized number of stress-related impacts.	Records kept at MCAS Yuma Range Management.
	MCAS Yuma	Sm/L	F/I/H	L	I	B	L	Obtain appropriate Scientific Collection Permit through AGFD.	Reduced risk of over utilization.	Activities remain within parameters established by valid permits.	Records kept at MCAS Yuma Range Management and submitted to AGFD.
	LAFB	I	I	L	I	B/C	L	Work with AIDTT to investigate new inventory/monitoring methods that more accurately, less intrusively and more cost effectively fulfill population management needs.	Minimize potential for adverse impacts associated with research and management.	New methodologies are developed and implemented.	None.
	YPG	I	I	L	I	BNI	L	Only authorized individuals may handle SDT.	Minimize potential impacts from research and monitoring.	improving procedures for research and handling.	Description of technique modifications.

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	YPG	I	I	L	I	BNI	L	Tortoise may only be moved to protect the individual from imminent harm	Minimize potential impacts handling SDT	Increased awareness on methods to handle tortoise	Number of tortoise handled
	ADOT	Sm	I	L	Sm	B/C	L	Collect data on SDT sightings in ADOT ROW and provide to AGFD.	Gain info on road kill impacts.	Data added to HDMS.	Number of HDMS reports submitted.
	ADOT	Sm	I	L	Sm	B/C	M	Partner with AGFD to facilitate development of survey and handling procedures.	Minimize potential for adverse impacts associated with moving a tortoise off a road; SDT in ROW are reported.	New methodologies are developed and implemented.	Protocols finalized.
	ADOT	Sm	I	L	Sm	B/C	L	Follow the most current protocol for relocating any SDT that may be impacted by an ADOT construction or maintenance project.	Minimize potential for adverse impacts associated with moving a tortoise off a road; SDT in ROW are reported.	Personnel are trained; SDT encounters are reported.	Number attending trainings; number of HDMS reports.
	ADOT	Sm	I	L	Sm	B/C	M	Provide awareness training and/or information to ADOT and contractor personnel working on construction and maintenance projects in areas with suitable habitat.	Minimize potential for adverse impacts associated with moving a tortoise off a road; SDT in ROW are reported.	Personnel are trained; SDT encounters are reported.	Number attending trainings; number of HDMS reports.
	AGFD	Sm	I	L	Sm	B/C	L	Work with AIDTT to investigate new inventory/monitoring methods that more accurately, less intrusively and more cost effectively fulfill population management needs.	Minimize potential for adverse impacts associated with research and management.	New methodologies are developed and implemented.	Protocols finalized, summary of decisions included.
	AGFD	Sm	I	L	Sm	B/C	M	Issue media advisories to educate public on methods to move tortoises off roads.	Minimize potential for adverse impacts associated with moving a tortoise off roads.	Increased public awareness on methods to handle wild tortoises.	Number of media advisories and resulting coverage.

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***C. Disease or predation* - disease and predators that are suspected of decreasing population viability**											
C. 1. Ravens	OPCNM	I	I	L	I	?	L	Continue to use animal-proof trash cans; remind CBP to minimize trash at checkpoint.	Reduce subsidized raven population.	Abundance of ravens.	Annual bird monitoring report.
	AZARNG	I	I	L	I	?	L	All garbage and food waste must be properly disposed of in a covered receptacle.	Minimize potential predation by ravens.	No net increase in ravens associated with human activity.	None.
	MCAS Yuma	I	I	L	I	?	L	Burying, dumping, abandoning, or disposing of solid waste, except in approved containers or at established landfills, is prohibited.	Minimize potential predation by ravens.	No net increase in ravens associated with human activity.	N/A
	LAFB	I	I	L	I	?	L	Maintain high quality SDT habitat to provide cover/harborage for hatchling SDT.	Reduced SDT depredation.	Increased hatchling survival.	None.
	YPG	I	I	L	I	?	L	All garbage and food waste must be properly disposed of in a covered receptacle.	Minimize potential predation by ravens.	No net increase in ravens associated with human activity.	N/A
	YPG	I	I	L	I	?	L	Feeding of wildlife is prohibited.	Minimize potential predation by ravens.	No net increase in ravens assoc. w/human activity.	N/A
	NRCS	I	I	L	I	?	L	Avoid placement of structures that create avian predator perches near known SDT habitat.	Minimize potential predation by ravens.	None.	None.
	AGFD	I	I	L	I	?	L	Record presence/absence during routine monitoring efforts.	Inform management.	Abundance of ravens.	Number of observations.
C.2. Trauma or direct mortality inflicted by feral or off-leash dogs.	OPCNM	I	I	L	I	?	L	Remove problem dogs. Adopt policy of prohibiting dogs on trails or off-leash.	Reduce potential for mortality.	Reduce number of SDT's injured by dogs.	Number of cases reported.

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	SNP	S/L	F/I/H	M	M	C	H	Work with law enforcement staff to reduce number of dogs off leash in park.	Reduced direct mortality and injury to SDTs.	Reduce percentage of tortoises showing damage by dogs.	Number of Law Enforcement Actions.
	LAFB	I	I	L	I	B	L	Educate public by including a SDT conservation brochure as part of the recreation permitting process.	Reduced possible SDT depredation.	None.	Number of observations reported.
	MCAS Yuma	I	I	L	I	B	L	Educate public through recreation permitting process and Conservation Law Enforcement.	Reduced potential for spread of disease.	None.	None.
	YPG	I	L	L	I	B	L	All pets on YPG must remain on leash or be otherwise confined.	Minimize potential mortality due to dogs	Continuing enforcement	N/A
	YPG	I	L	L	I	B	L	In the event range personnel see feral dogs, it is reported to Emergency Services who will appropriately remove the animal.	Minimize potential mortality due to dogs.	Continuing enforcement	N/A
	CNF	I	L	L	I	B	L	A portion of SDT habitat on the Santa Catalina EMA is included in the Bighorn sheep management area that includes a closure to dogs since the late 1980s.	Minimize potential for adverse impacts associated with feral off leash dogs.	Reduction in numbers of tortoises killed by dogs.	Reported numbers of tortoises killed by dogs.
	AGFD	I	L	L	I	B	L	Record presence/absence during routine monitoring efforts.	Inform management.	Abundance of feral off-leash dogs.	Number of observations.
C.3. Direct human predation (killing tortoises not associated with collection for scientific purposes).	OPCNM	I	I	L	I	C	L	Work with LE agencies to minimize and interdict illegal collecting or killing; remind staff to report cases to LE immediately.	Reduce collecting or killing.	Reduced losses.	Number of cases reported.
	SNP	I	I	L	I	C	L	Work with law enforcement staff to reduce illegal killing of tortoises.	Reduced direct mortality and injury to SDTs.	Reduced direct mortality and injury to SDTs.	Number of Law Enforcement actions
	AZARNG	I	I	L	I	C	L	Killing or harming tortoise is strictly prohibited.	Reduce collecting or killing.	Reduced losses.	None.

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	LAFB	I	I	L	I	C	L	Educate public by including a SDT conservation brochure as part of the recreation permitting process.	Reduced potential for spread of disease.	None.	None.
	MCAS Yuma	I	I	L	I	C	L	Educate public through recreation permitting process and Conservation Law Enforcement.	Reduced potential for spread of disease.	None.	None.
	YPG	I	I	L	I	C	L	Killing or harming tortoise is strictly prohibited			Report any documented incidents.
	AGFD	I	I	L	I	C	L	Record presence/absence during routine monitoring efforts; Report to Law Enforcement.	Inform management.	No increase in mortality due to intentional killing.	Number of observations.
	AGFD	I	I	L	I	C	L	Enforce Statute (Title 17-331), Rule (R12-4-404), and Commission Order (43) as appropriate.	Enforcement of regulations.	Regulations enforced.	Number of Law Enforcement actions.
	AGFD	I	I	L	I	C	L	Provide outreach through presentations, media advisories, and the website to educate the public on laws.	Educated public.	An educated public.	Number of attendees at public efforts. Number of media advisories and resulting coverage.
C.4. URTD in wild tortoises.	BWRNWR	I	I	L	I	BNI	L	Record URTD symptoms when observed.	Help track spread of the disease or identify outbreaks.	Identify number of animals with disease.	Report cases to AGFD or FWS.
	HNWR	I	I	L	I	BNI	L	Record URTD symptoms when observed.	Help track spread of the disease or identify outbreaks.	Identify number of animals with disease.	Report cases to AGFD or FWS.
	OPCNM	I	I	L	I	BNI	L	Record URTD symptoms when observed.	Help track spread of the disease or identify outbreaks.	Identify number of animals with disease.	Report cases to AGFD or FWS.
	AZARNG	I	L	L	I	BNI	L	Handle tortoise only when necessary using proper methods and protocols to move tortoises out of harm's way.	Reduce potential spread of disease.	None.	None.
	LAFB	I	I	L	I	BNI	L	Implement safe handling procedures during management activities.	Reduced SDT mortalities.	None.	None.

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	MCAS Yuma	I	I	L	I	BNI	L	Implement safe handling procedures during management activities.	Reduced SDT mortalities.	None.	None.
	YPG	I	I	L	I	BNI	L	Handle tortoise only when necessary for protection of animals from imminent harm or authorized research activity.	Reduce potential spread of disease.		Number of tortoises handled.
	YPG	I	I	L	I	BNI	L	Move tortoises in accordance with the *Guidelines for Handling Sonoran Desert Tortoise During Development Projects.*	Reduce potential spread of disease.		Number of tortoises moved.
	AGFD	I	I	L	I	BNI	L	Record presence/absence during routine monitoring efforts.	Inform management.	No increase in mortality linked to presence of URTD.	Number of positive or negative observations.
C.5. Cutaneous dyskeratosis.	BWRNWR	I	I	L	I	BNI	L	Record cutaneous dyskeratosis symptoms when observed.	Help track spread of the disease or identify outbreaks.	Identify number of animals with disease.	Report cases to AGFD or FWS.
	HNWR	I	I	L	I	BNI	L	Record cutaneous dyskeratosis symptoms when observed.	Help track spread of the disease or identify outbreaks.	Identify number of animals with disease.	Report cases to AGFD or FWS.
	OPCNM	I	I	L	I	BNI	L	Record cutaneous dyskeratosis symptoms when observed.	Help track spread of the disease or identify outbreaks.	Identify number of animals with disease.	Report cases to AGFD or FWS.
	AZARNG	I	L	L	I	BNI	L	Handle tortoise only when necessary using proper methods and protocols to move tortoises from harms way.	None.	None.	None.
	LAFB	I	I	L	I	BNI	L	Implement safe handling procedures during management activities.	Reduced potential for spread of disease.	None.	None.
	MCAS Yuma	I	I	L	I	BNI	L	Implement safe handling procedures during management activities.	Reduced potential for spread of disease.	None.	None.
	YPG	I	I	L	I	BNI	L	Handle tortoise only when necessary for protection of animals from imminent harm or authorized research activity.	None.	None.	Number of tortoises handled.

Appendix A: Stressor/Conservation Measure Matrix

STRESSOR[1]	Cooperator	Scope[2]	Immediacy[3]	Intensity[4]	Exposure[5]	Response[6]	Overall Threat Level[7]	CONSERVATION MEASURES	CONSERVATION BENEFITS	MEASURE OF SUCCESS	ANNUAL REPORTING METRIC
	YPG	I	I	L	I	BNI	L	Move tortoises in accordance with the *Guidelines for Handling Sonoran Desert Tortoise During Development Projects.*	None.	None.	Number of tortoises moved.
	AGFD	I	I	L	I	BNI	L	Record presence/absence during routine monitoring efforts.	Inform management.	No increase in mortality linked to presence of shell disease.	Number of positive or negative observations.
C.6. Intentional or accidental release of captive tortoises may introduce disease and increase risk of genetic contamination.	BWRNWR	I	I	L	I	B	L	Enforce regulations that prohibit release of wildlife on the refuge.	Enforcement of regulations.	Reduced incidence of release.	Number if regulatory violations prosecuted.
	HNWR	I	I	L	I	B	L	Enforce regulations that prohibit release of wildlife on the refuge.	Enforcement of regulations.	Reduced incidence of release.	Number if regulatory violations prosecuted.
	INWR	I	I	L	I	B	L	Enforce regulations that prohibit release of wildlife on the refuge.	Enforcement of regulations.	Reduced incidence of release.	Number if regulatory violations prosecuted.
	KNWR	I	I	L	I	B	L	Enforce regulations that prohibit release of wildlife on the refuge.	Enforcement of regulations.	Reduced incidence of release.	Number if regulatory violations prosecuted.
	OPCNM	I	I	L	I	B	L	Remind staff to intervene or report any releases immediately.	Lower the risk of disease or exotic genes.	Reduces number of accidental releases.	None.
	SNP	I	L	L	I	BNI	L	Work with law enforcement and interpretive staff to reduce the number of intentional releases in park through education.	Lowered risk of disease in SDTs.	Healthy tortoise population.	Number of Law Enforcement Actions; number of public presentations.
	LAFB	I	?	L	I	BNI	M	Educate public by including a SDT conservation brochure as part of the recreation permitting process.	Reduced potential for spread of disease.	None	None
	YPG	I	L	L	I	BNI	L	Release of captive tortoise is prohibited.	Enforce regulations.	Healthy tortoise population.	NA

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STRESSOR[1]	Cooperator	Scope[2]	Immediacy[3]	Intensity[4]	Exposure[5]	Response[6]	Overall Threat Level[7]	CONSERVATION MEASURES	CONSERVATION BENEFITS	MEASURE OF SUCCESS	ANNUAL REPORTING METRIC
	AGFD	I	L	L	I	BNI	L	Enforce statute as authorized in Title 17 Sec. 17-306.	Enforce regulations.	Low incidence of citation.	Number of Law Enforcement actions.
	AGFD	I	L	L	I	BNI	M	Outreach through presentations, media advisories, and website to educate the public on impact of disease and genetics on wild tortoise populations, and to promote re-homing captive tortoises through the tortoise adoption program.	Prevention of illegal release activities.	Reduced number of offspring surrendered to state-sanctioned adoption facilities.	Number of attendees at public outreach efforts. Number of media advisories and resulting coverage.
	AGFD	I	L	L	I	BNI	L	Enforce guidelines that restrict tortoises to one per household or same-gender pairs.	Implementation and enforcement of guidelines.	Reduced number of offspring surrendered to state-sanctioned adoption facilities.	Number of hatchling and small juvenile tortoises surrendered to adoption facilities.
	AGFD	I	L	L	I	BNI	L	House centralized adoption program at the Department's Wildlife Center and through the Arizona-Sonora Desert Museum.	Enforcement of guidelines.	Reduced number of offspring surrendered to state-sanctioned adoption facilities.	Number of hatchling and small juvenile tortoises surrendered to adoption facilities.
	AGFD	I	L	L	I	BNI	L	Enforce rules as authorized in R12-4-406.	Enforcement of regulations; Prevention and conviction of illegal possession activities.	Reduced number of Mohave desert tortoises imported into Arizona.	Number of Law Enforcement actions.
	AGFD	I	L	L	I	BNI	M	Rewrite AGFD Article 4 Rule(s) to restrict captive propagation.	Specific enforceable rule.	Reduced number of offspring surrendered to state-sanctioned adoption facilities.	Number of hatchling and small juvenile tortoises surrendered to adoption facilities.

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STRESSOR[1]	Cooperator	Scope[2]	Immediacy[3]	Intensity[4]	Exposure[5]	Response[6]	Overall Threat Level[7]	CONSERVATION MEASURES	CONSERVATION BENEFITS	MEASURE OF SUCCESS	ANNUAL REPORTING METRIC
D. Inadequacy of existing regulations- This section was deleted, as all Federal and State partners existing regulations within this CCA are considered adequate, and content was moved to appropriate sections above.											
E. Other natural or manmade factors affecting the species' continue existence - **stressors that cannot be listed under one of the above categories**											
Environmental Contaminants											
E.1. Exposure to contaminants through ingestion or inhalation that result from current or former mining operations.	BLM	I	H	L	I	BNI	L	Prioritize clean up and remediation of contaminants associated with abandoned mines.	Reduce or eliminate potential exposure.	Reduction of known contaminant sites.	Number of sites inventoried and cleaned up.
	CPNWR	I	H	L	I	BNI	L	Prioritize clean up and remediation of contaminants associated with abandoned mines.	Reduce or eliminate potential exposure.	Reduction of known contamination sites.	Number of sites inventoried and cleaned up.
	PNF	I	H	L	I	BNI	L	DC-Ecosystem Resilience -1 - Ecological conditions for habitat quality, distribution, and abundance contribute to self-sustaining populations of terrestrial and aquatic plants and animals. Conditions provide for the life history, distribution, and natural population fluctuations of the species within the capability of the ecosystem. Contiguous blocks of habitat are interconnected, support a wide array of native species, and allow for genetic and behavioral interactions.	Projects in SDT habitat would be designed to maintain habitat connectivity for SDT.	Where SDT have been documented, they continue to persist if a project is implemented.	Monitor SDT occurrence.
	PNF	I	H	L	I	BNI	L	Forest Plan Component: DC-Wildlife-1 - Habitats that support populations of Southwestern Region sensitive species provide the ecological conditions that facilitate the life history, distribution, and natural population fluctuations of the species within the capability of the ecosystem.	Projects in SDT habitat would be designed to maintain habitat connectivity for SDT.	Where SDT have been documented, they continue to persist if a project is implemented.	Monitor SDT occurrence.

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STRESSOR[1]	Cooperator	Scope[2]	Immediacy[3]	Intensity[4]	Exposure[5]	Response[6]	Overall Threat Level[7]	CONSERVATION MEASURES	CONSERVATION BENEFITS	MEASURE OF SUCCESS	ANNUAL REPORTING METRIC
	PNF	S/L	H/I/F	L	I	BNI	L	Forest Plan Component: Guide-Locatable Minerals -2: Given that the Forest Service function is the management and protection of surface resources in a manner compatible with reasonable and logical mining operations, the following should be included in plans of operations for locatable minerals: • Mitigation measures should be used for Southwestern Region sensitive species to minimize impacts to populations due to mineral exploration or extraction activity. • Closing and reclaiming abandoned mine lands should be given high priority.	Minerals projects would include design features to meet SDT needs.	Maintained SDT habitat.	Acres of SDT habitat maintained.
	TNF	Sm	H/F	L	Sm	BNI	L	Prioritize clean up and remediation of contaminants associated with abandoned mines.	Perform mining operation per 36CFR228	Prevent contaminant sites.	Number of clean-up efforts.
E.2.Balloons and Trash	CPNWR	I	I	L	I	BNI	M	Educate the local population and visitors about the impact of plastics, balloons, and trash on SDT. Develop education and outreach material in both English and Spanish and distribute material to local residents, visitors, and border towns in Mexico.	Better public understanding will encourage voluntary compliance with best management practices.	Increased public awareness on the impact on SDT from released helium balloons and trash.	Number of public outreach materials developed and where distributed.
	CPNWR	I/L	I	L	I	BNI	L	Prioritize the clean-up of illegal trash sites in SDT habitat.	Less habitat degradation and potential for SDT to ingest trash.	Number of sites cleaned, lbs. of trash removed.	Enter data into the ADEQ website for illegal trash removal.

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	OPCNM	I	I	L	I	BNI	L	Continue to remove trash at selected sites.	Minimize habitat degradation.	Reduced trash and document any SDT mortalities from trash.	Number of NPS organized trash pick-up days.
	SNP	I	I	L	I	BNI	L	Clean up trash and educate people to not discard trash bags and balloons.	Reduced mortality.	No evidence of SDTs killed by balloons or trash.	Number of patrol hours (Staff or volunteer).
Climate Change											
E.3. Increased susceptibility to stochastic environmental factors because of small population size and isolation from other populations.	BLM	VS	F	?	VS	BNI	?	Monitor long-term population and habitat trend range-wide and pursue alternative population monitoring methods (occupancy monitoring) that fills data gaps.	Long-term monitoring will allow informed management decisions to adapt to changing conditions.	Stable SDT populations.	Monitoring results.
	BWRNWR	VS	F	?	VS	BNI	?	Monitor long-term population and habitat trend range-wide and pursue alternative population monitoring methods (occupancy monitoring) that fills data gaps as personnel resources allow.	Long-term monitoring will allow informed management decisions to adapt to changing conditions.	Stable SDT populations.	Monitoring results.
	CPNWR	VS	F	?	VS	BNI	?	Monitor long-term population and habitat trend range-wide and pursue alternative population monitoring methods that fills data gaps.	Long-term monitoring will allow informed management decisions to adapt to changing conditions.	Stable SDT populations.	Monitoring results.

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STRESSOR[1]	Cooperator	Scope[2]	Immediacy[3]	Intensity[4]	Exposure[5]	Response[6]	Overall Threat Level[7]	CONSERVATION MEASURES	CONSERVATION BENEFITS	MEASURE OF SUCCESS	ANNUAL REPORTING METRIC
	HNWR	VS	F	?	VS	BNI	?	Monitor long-term population and habitat trend range-wide and pursue alternative population monitoring methods that fills data gaps as personnel resources allow.	Long-term monitoring will allow informed management decisions to adapt to changing conditions.	Stable SDT populations.	Monitoring results.
	INWR	VS	F	?	VS	BNI	?	Monitor long-term population and habitat trend range-wide and pursue alternative population monitoring methods (occupancy monitoring) that fills data gaps.	Long-term monitoring will allow informed management decisions to adapt to changing conditions.	Stable SDT populations.	Monitoring results.
	OPCNM	VS	F	?	?	BNI	?	Monitor population.	Provide information for management decisions.	Persistence and adaptation.	Monitoring results.
	SNP	VS	F	?	I	BNI	?	Continue long-term monitoring with NPS and other lands.	Long-term monitoring will allow informed management decisions to adapt to changing conditions.	Stable SDT populations.	Monitoring results.
	AZARNG	VS	F	?	VS	BNI	?	Monitor regional long-term population and habitat trends, implement management practices using the best available science, and maintain movement corridors for SDT.	Management decisions based on BAS and connectivity intact to facilitate movement.	Stable SDT populations.	Monitoring results.

Appendix A: Stressor/Conservation Measure Matrix

STRESSOR[1]	Cooperator	Scope[2]	Immediacy[3]	Intensity[4]	Exposure[5]	Response[6]	Overall Threat Level[7]	CONSERVATION MEASURES	CONSERVATION BENEFITS	MEASURE OF SUCCESS	ANNUAL REPORTING METRIC
	LAFB	VS	F	?	VS	BNI	?	Continue to monitor population.	Inform management decisions to adapt to changing conditions.	Stable SDT populations.	Monitoring results.
	AGFD	VS	F	?	VS	BNI	?	Monitor long term population and habitat trend range-wide and pursue alternative population monitoring methods that fills data gaps.	Inform management decisions to adapt to changing conditions.	Stable SDT populations.	Monitoring results.

Notes: For columns C-H, assign these values for your respective area and not for the entire species' range.

1. Stressor - a process or event having a negative impact on the SDT. Stressors are grouped into the five listing/delisting criteria.

2. Scope - the geographic and temporal extent of the stressor. The following are used to describe geographic extent: "I" (Insignificant - stressor's geographic extent negligible); "Sm" (Small - <10% of population's potential range); "M" (Moderate - 11-30% of population's potential range); "Si" (Significant - 31-60% of population's potential range); or "VS" (Very Significant - > 60% of population's potential range). The following are used to describe temporal extent: "L" (Long-term - stressor expected to be persistent without intervention): or "S" (Short-term - stressor expected to dissipate on its own with <5-10 years).

3. Immediacy - the action time frame of the stressor. The following are used to describe immediacy: "F" (Future - effects anticipated in future); "I" (Imminent - effects occurring now); or "H" (Historic - effects already realized, but restorative action necessary).

4. Intensity - the strength of the stressor itself to harm the species. The following are used to describe intensity: "L" (Low - minor reductions in range or vital rages [survival and reproductive capacity]); "M" (Moderate - reductions in range or vital rates); or "H" (High - sever reductions in vital rates).

5. Exposure - the extent to which a target resource or individual SDT and stressor actual overlap in space and time; the level of the total population exposed to stressor. The following are used to describe exposure: "I" (Insignificant - level of exposure negligible); "Sm" (Small - <10% of population exposed); "M" (Moderate - 11-30% of population exposed); "Si" (Significant - 31-60% of population exposed); and "VS" (Very Significant - >60% of population exposed).

6. Response - the change in the species' behavior, reproductive capacity or survival due to a specific stress; level of physiological/behavioral response to exposer to stress. The following are used to describe response: "B" (Behavioral - startle, displace, etc.); "BNI" (Basic Need Inhibited - capacity to meet basic needs of feed/breed/shelter altered, possibly reducing growth or vital rates); "C" (Confirmed mortality or identifiable reduction in individual growth or vital rates); or "S" (Significant mortality or reduction in individual growth or vital rates).

7. Overall Threat Level - the integration of the scope, immediacy, and intensity of the stressor with the exposure and response of the species measured at the population or species level. The following are used to describe the overall threat level; "L" (Low - no action needed at this time); "M" (Moderate - action is needed); "H" (High - immediate action is needed); or "S" (Severe - immediate action is essential for survival of population.

APPENDIX B
Signatories to the
Candidate Conservation Agreement
for the Sonoran Desert Tortoise

IN WITNESS WHEREOF, THE PARTIES HERETO have executed this Candidate Conservation Agreement for the Sonoran Desert Tortoise as of the last date written below

Larry D Voyles 3/18/15
Date

Larry D. Voyles
Director
Arizona Game and Fish Department

Dallas 2 Hammit 18 Mar 2015
Date

Dallas Hammit, P.E.
Deputy Director
Transportation/State Engineer
Arizona Department of Transportation

3-17-2015
Date

Raymond Suazo
State Director
Bureau of Land Management

4/7/2015
Date

Terry Fulp
Regional Director
Bureau of Reclamation

28 APR 15
Date

Scott L. Pleus
Brigadier General, USAF
Commander, 56th Fighter Wing

3/19/15
Date

William M. Myer
COL, EN
Chief, Environmental Programs Division

Randy Murray 12 Mar 2015
Date

Randy Murray
Colonel, U.S. Army
Commanding

20 Mar 2015
Date

Ricardo Martinez
Colonel, U.S. Marine Corps
Commanding Officer
Marine Corps Air Station
Yuma, AZ

3/9/2015
Date

Jim Upchurch
Forest Supervisor
Forest Service
Coronado National Forest

3/20/15
Date

Neil Bosworth
Forest Supervisor
Forest Service
Tonto National Forest

3-10-15
Date

Teresa Chase
Forest Supervisor
Prescott National Forest

3/3/15
Date

Darla Sidles
Superintendent
Saguaro National Park

3-3-15
Date

Brent Range
Superintendent
Organ Pipe Cactus National Monument

04/06/15
Date

Keisha L. Tatem
State Conservationist
Natural Resources Conservation District

4/17/15
Date

John W. Scanlon
Assistant Chief
U.S. Customs & Border Protection
U.S. Border Patrol
Tucson Sector

6/19/15

Date

Steven L. Spangle
Field Supervisor, Arizona Ecological Service
U.S. Fish and Wildlife Service

BLM Sonoran Desert Tortoise Conservation Implementation Reporting				
CONSERVATION MEASURES	**CONSERVATION BENEFITS**	**MEASURE OF SUCCESS**	**ANNUAL REPORTING METRIC**	**ANNUAL IMPLEMENTATION DOCUMENTATION TO BE SHARED WITH AIDTT (DESCRIPTION)**
Invasive Species and Fire				
Immediately suppress wildfires in Sonoran desert scrub vegetative communities.	Minimize Sonoran desert tortoise (SDT) habitat impacts associated with wild fires.	Average fire size reduced.	**Summary of annual fire reports (number and size of fires in SDT habitat).**	**Report the number of fires and acreage burned in SDT habitat.**
In cooperation with the U.S. Fish and Wildlife Service (USFWS), review and implement Minimum Impact Suppression Techniques (MIST) to minimize impacts of suppression activities to SDT habitat.	Avoid or minimize potential for adverse impacts caused by fire suppression activities.	Coordinated with the USFWS, updated MIST being implemented.	**MIST implemented.**	**NA - Standard Operating Procedure**
Work with partners (AIDTT, local volunteers and organizations) to control or eradicate invasive plant species, especially buffelgrass.	Minimize potential for large or repeat fires in SDT habitat.	Decrease in buffelgrass.	**Summary of invasive species control efforts.**	**Report the number of invasive plant species control efforts undertaken in SDT habitat, number of acres treated and provide maps of areas inventoried, areas of infestation and areas treated. All mapping data will be in Graphic Information Systems (GIS) format and include associated metadata.**
Inventory and map invasive plant infestations and prioritize treatments in SDT habitat.	Minimize potential for large or repeat fires in SDT habitat.	Treatments prioritized and implemented.	**Acres treated, maps updated.**	
Land Tenure				
Designate for retention all lands containing occupied SDT habitat unless it is clearly in the public interest to dispose of those lands. Prioritize high quality SDT habitat for acquisition, as opportunities arise.	Maintain habitat and improve manageability.	Acres of available habitat maintained or increasing.	**Summary of land tenure actions.**	**Report number of acres of SDT habitat acquired or disposed of and provide maps of subject lands. All mapping data will be in GIS format and include associated metadata.**
Large Scale Energy Development				
Ensure SDT conservation allocations, objectives and management decisions to maintain or restore habitat connectivity are incorporated into planning documents during revision or amendment.	Avoid or minimize potential for adverse impacts and avoid habitat fragmentation.	All planning documents address SDT conservation priorities.	**Plans finalized, summary of decisions included.**	**Provide description of management plans completed (including amendments and revisions) and a summary of SDT conservation decision included.**
Through the National Environmental Policy Act process, ensure permitted activities conform to SDT management objectives contained in land use plans.	Avoid or minimize potential for adverse impacts and avoid habitat fragmentation.	Conformance documented.	**Number of project applications reviewed.**	**Provide a summary of energy related applications reviewed. Include project name and type of land use reviewed.**
Review all permitting activities on a case-by-case basis to determine associated impacts to SDT and implement measures to avoid, minimize or mitigate impacts to achieve SDT population and habitat objectives described in land use plans.	Avoid or minimize potential for adverse impacts caused by development.	Impacts mitigated.	**Number of project applications reviewed.**	

Work with project applicants to minimize potential impacts to sensitive wildlife species and habitat loss and incorporate design features, mitigation and stipulations into authorizations that restore or maintain habitat connectivity.	Avoid or minimize potential for adverse impacts caused by development.	Impacts mitigated.	**Number of project applications reviewed.**	
Minerals Activities				
All mining plans of operations will be assessed for impacts to SDT habitat on a case-by-case basis.	Avoid or minimize potential for adverse impacts associated with mining and minerals extraction activities.	Impacts mitigated.	**Number of mining plans reviewed.**	**Provide a summary of mining operations reviewed. Include project name, number of acres of unmitigated or residual SDT habitat loss associated with approved mining plans under 43 CFR 3809 or number of acres of SDT habitat associated with mineral material sales authorized or denied.**
Adverse impacts to desert tortoise will be mitigated to the extent allowable in the 43 CFR 3809 regulations.	Avoid or minimize potential for adverse impacts associated with mining and minerals extraction activities.	Impacts mitigated.	**Acres unmitigated or residual habitat loss.**	
Salable mineral material permits will be prohibited in occupied SDT habitat unless it is clearly in the public interest to permit them.	Avoid or minimize potential for adverse impacts associated with mining and minerals extraction activities.	No net loss of habitat due to mineral material sales.	**Acreage authorized and denied.**	
Abandoned Mine Lands				
Prioritize and target potential SDT hazards associated with abandoned mines for reclamation to eliminate potential entrapment.	Minimize hazards associated with abandoned mines.	Incidence of entrapment reduced.	**Number of hazardous mine features reclaimed.**	**Report # of abandoned mine features reclaimed or hazardous materials sites remediated within SDT habitat.**
Prioritize clean up and remediation of contaminants associated with abandoned mines.	Reduce or eliminate potential exposure.	Reduction of known contaminant sites.	**Number of sites inventoried and cleaned up.**	
Roads and Highways				
Review all permitted activities on a case-by-case basis to determine associated impacts to SDT and implement measures to avoid, minimize or mitigate impacts to achieve SDT population and habitat objectives described in land use plans.	Avoid or minimize potential for adverse impacts caused by development.	Impacts mitigated.	**Number of project applications reviewed.**	**Provide a summary of road or highway right-of-way (ROW) applications reviewed and design features or mitigation incorporated to conserve SDT.**
Work with applicants to locate facilities so as to minimize potential impacts to sensitive wildlife species and habitat loss.	Avoid or minimize potential for adverse impacts caused by development.	Impacts mitigated.	**Number of project applications reviewed.**	
Incorporate design features, mitigation and stipulations into ROW authorizations that restore or maintain habitat connectivity (e.g. fencing, culverts, underpasses) and minimize vehicle strike mortality.	Avoid or minimize potential for adverse impacts caused by development.	Impacts mitigated.	**Number of project applications reviewed.**	

Work with ROW holders to install or modify fencing to preclude SDT access to roadways, where practicable.	Minimize mortality associated with vehicle strikes.	Observed or reported vehicle strikes reduced.	**Number of observed or reported vehicle strikes.**	**Report locations (UTM NAD83) incidental observations and reports of SDT road mortalities.**
Travel Management and Off-Highway-Vehicle (OHV)				
Restrict motorized use to designated roads and trails, through Travel Management Plans (TMP) to be completed statewide by 2020.	Avoid or minimize potential for adverse impacts caused by off-road vehicle (ORV) route designation.	All TMP that include SDT habitat are complete.	**Percent of SDT habitat covered by TMPs.**	**Reported by the State Office.**
Wildlife biologists will participate in the route designation process to ensure SDT impacts are considered when determining route status and mitigation needs.	Avoid or minimize potential for adverse impacts caused by ORV route designation.	Reduced miles of motorized routes in SDT habitat.	**Number of miles of routes closed in SDT habitat.**	**Report number of miles of routes in SDT habitat closed in TMP.**
Routes that conflict with maintaining desert tortoise habitat will be mitigated to achieve desired future condition. Mitigation will include, but not be limited to the following: route closure, seasonal restrictions, rerouting, vehicle type restrictions, speed restrictions, etc.	Avoid or minimize potential for adverse impacts caused by ORV route designation.	Reduced miles of motorized routes in SDT habitat.	**Number of miles of routes closed in SDT habitat.**	
Prohibit "rock crawling" permits and designated use areas in occupied SDT habitat.	Reduce ORV related impacts and restore SDT habitat values.	No increase in number of authorized "rock crawling" areas.	**Number of authorized use areas.**	**Report number of Rock Crawling areas authorized in SDT habitat.**
Conduct public education to encourage users to avoid SDT and comply with regulations.	Reduce ORV related impacts and restore SDT habitat values.	Reduced miles of motorized routes in SDT habitat.	**Number of attendees at public outreach efforts.**	**Report number of public participants in SDT related outreach and educational efforts for public land users.**
Routes within SDT habitat closed as a result of travel management planning will be physically closed and/or reclaimed to restore habitat values for SDT.	Reduce ORV related impacts and restore SDT habitat values.	Route closed, are not used.	**Number of closure structures installed and miles of routes in SDT habitat reclaimed.**	**Report number of vehicle route closures installed and miles of routes reclaimed in SDT habitat.**
Prioritize ORV enforcement activities in SDT habitat.	Reduce ORV related impacts and restore SDT habitat values.	Incidence of unauthorized off-road use reduced.	**Number of new routes detected in SDT habitat.**	**Report number of new unauthorized routes detected in SDT habitat.**
Develop brochures and signs to educate OHV users about SDT conservation and best management practices (BMPs) to minimize direct impacts.	Better public understanding will encourage voluntary compliance with BMPs.	Incidence of unauthorized off-road use reduced.	**Number of new routes detected in SDT habitat.**	
Actively engage OHV user groups as partners in educating users and self-policing inappropriate behavior (the ORV Ambassador Program).	Better public understanding will encourage voluntary compliance with BMPs.	Incidence of unauthorized off-road use reduced.	**Number of new routes detected in SDT habitat.**	

Livestock and Burro Management				
Evaluate plant community condition through Range Health Evaluation – permit renewal process.	Avoid or minimize potential for adverse impacts caused by grazing and maintain plant community structure and diversity.	Allotments meet Desired Plant Community (DPC) objectives.	**Number of allotments evaluated and meeting DPC objectives.**	**Report number of allotments containing SDT habitat evaluated in Land Health Evaluations and meeting DPC objectives.**
Implement and enforce regulations.	Avoid or minimize potential adverse impacts to SDT.	Allotments meet DPC objectives.	**Number of allotments evaluated and meeting DPC objectives.**	
Set DPC objectives that incorporate SDT habitat requirements.	Avoid or minimize potential for adverse impacts caused by grazing and maintain plant community structure and diversity.	Allotments meet DPC objectives.	**Number of allotments evaluated and meeting DPC objectives.**	
Implement grazing management changes to achieve or make significant progress toward meeting Desired Plant Community objectives.	Avoid or minimize potential for adverse impacts caused by grazing and maintain plant community structure and diversity.	Allotments meet DPC objectives.	**Number of allotments evaluated and meeting DPC objectives.**	
Encouraging livestock operators to rest or defer grazing during drought.	Avoid or minimize potential for adverse impacts caused by grazing and maintain plant community structure and diversity.	Allotments meet DPC objectives.	**Number of allotments evaluated and meeting DPC objectives.**	
Ensure adequate forage remains for SDT following ephemeral use periods.	Avoid or minimize potential for adverse impacts caused by grazing and maintain plant community structure and diversity.	Adequate SDT forage remains following ephemeral use.	**Number of ephemeral allotments used.**	**Report number of ephemeral use permits authorized containing SDT habitat.**
Monitor vegetative condition in areas of wild burro and SDT overlap.	Minimize habitat degradation due to wild burros.	Areas of wild burro overlap with SDT are meeting DPC objectives.	**TBD through AIDTT.**	**Report number of areas monitored for wild burro impacts in SDT habitat.**
Pursue funding and authority to control wild burro populations within SDT habitat when warranted.	Minimize habitat degradation due to wild burros.	Areas of wild burro overlap with SDT are meeting DPC objectives.	**Number of wild burros removed.**	**Report number of burros removed from SDT habitat.**
Review on a case-by-case basis, all discretionary use requests to determine associated impacts to SDT and implement measures to avoid, minimize or mitigate impacts to achieve SDT population and habitat objectives described in land use plans.	Avoid or minimize potential adverse impacts to SDT.	Impacts mitigated.	**Number of project applications reviewed.**	**Provide a summary of range improvement applications or projects reviewed in SDT habitat.**
Avoid locating livestock concentration areas within ¼ mile of occupied SDT habitat.	Avoid or minimize potential for adverse impacts caused by livestock trampling.	Impacts mitigated.	**Number of project applications reviewed.**	

Border Activities				
Law enforcement personnel will work with Customs and Border Protection to cooperatively enforce Federal immigration and smuggling laws and provide guidance to minimize environmental impacts associated with enforcement activities to the extent practicable.	Minimize potential for adverse impacts associated with border related activities.	Incidence of off-road use reduced.	**Number of new routes detected in SDT habitat.**	**Report number of new unauthorized routes detected in SDT habitat.**
Public Education and Outreach				
Work with AIDTT to develop brochures and signs to educate public land users about SDT conservation and best management practices to minimize direct impacts.	Minimize potential for adverse impacts associated with illegal SDT collection.	Reduced incidence of collection.	**Number of outreach materials produced, distributed, and posted.**	**NA - Cooperative with AIDTT.**
Population Monitoring				
Work with AIDTT to investigate new inventory/monitoring methods that more accurately, less intrusively and more cost effectively fulfill population management needs.	Minimize potential for adverse impacts associated with research and management.	New methodologies are developed and implemented.	**Protocols finalized, summary of decisions included.**	**NA - Cooperative with AIDTT.**
Monitor long term population and habitat trend range-wide and pursue alternative population monitoring methods (occupancy monitoring) that fills data gaps.	Long term monitoring will allow informed management decisions to adapt to changing conditions.	Stable SDT populations.	**Monitoring results.**	**Report population monitoring results.**